1908.

NEW ZEALAND.

THE GOLDFIELDS OF NEW ZEALAND.

(REPORT ON)

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

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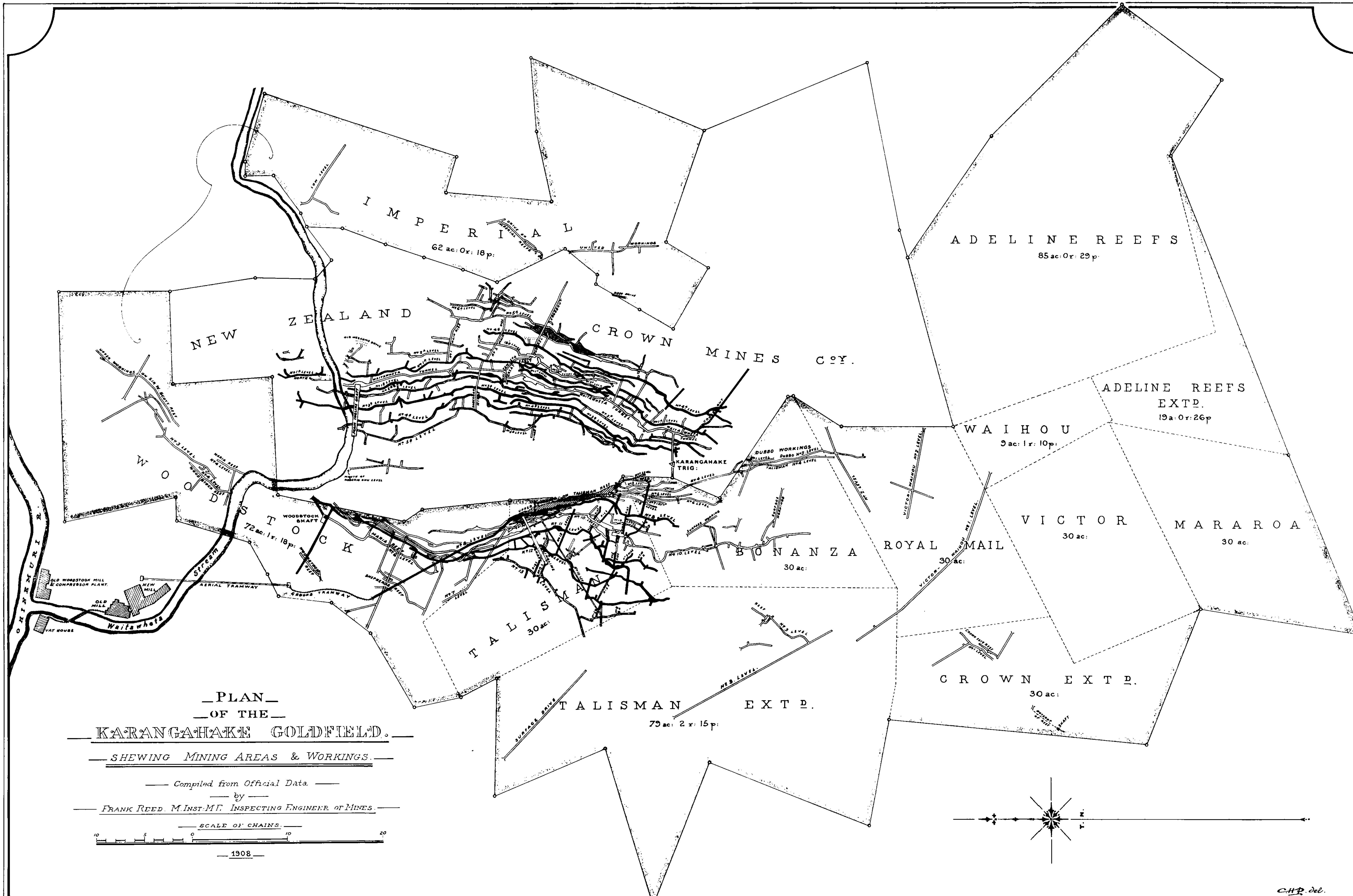
IMPERIAL
62 ac: 0 r: 18 p:
NEW ZEALAND CROWN MINES Coy.
ADELINE REEFS
85 ac: 0 r: 29 p:
ADELINE REEFS EXTD.
19 a: 0 r: 26 p
WAIHOU
9 ac: 1 r: 10 p:
VICTOR
30 ac:
MARAROA
30 ac.
ROYAL MAIL
30 ac:
BONANZA
30 ac:
WOODSTOCK
72 ac: 1 r: 18 p:
TALISMAN
30 ac:
TALISMAN EXTD.
79 ac: 2 r: 15 p:
CROWN EXTD.
30 ac:
KARANGAHAKE TRIG:
DUBBO WORKINGS
WOODSTOCK SHAFT
AERIAL TRAMWAY
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OLD WOODSTOCK MILL & COMPRESSOR PLANT.
NEW MILL
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PLAN
OF THE
KARANGAHAKE GOLDFIELD.

SHEWING MINING AREAS & WORKINGS.

Compiled from Official Data
by
FRANK REED. M.INST.M.E. INSPECTING ENGINEER OF MINES.

SCALE OF CHAINS.

1908

KARANGAHAKE AND THE OHINEMURI RIVER: LOOKING NORTH

REPORT.

Mr. FRANK REED, M.Inst.M.E., Lic Surveyor, Inspecting Engineer of Mines, to the Hon. JAMES MCGOWAN, Minister of Mines.

SIR,— Mines Department, Wellington, 24th April, 1908.

I have the honour to submit the annual reports of inspection, together with those 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, 1907.

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, 1907, to the 31st March, 1908.

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

I. Production of Minerals.

II. Persons employed.

III. Accidents.

IV. Gold-mining—

(1.) Quartz.
(2.) Dredging.
(3.) Alluvial.

V. Minerals other than Gold.

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Appendices.—Reports of—

(*a.*) Inspectors of Mines.
(*b.*) Wardens.
(*c.*) Directors of Schools of Mines.
(*d.*) Water-race Managers.
(*e.*) Improvements in Mining and Metallurgical Processes.
(*f.*) Mining Statistics.
(*g.*) Examinations under "The Mining Act, 1905," and Holders of Certificates.

I. PRODUCTION OF MINERALS.

The appended statement shows the value of the outputs from the various metalliferous mines and gumfields in New Zealand from the 1st January, 1853, to the 31st December, 1907 :—

Classification.	1906.	1907.	Increase or Decrease.	Total from the 1st January, 1853, to the 31st December, 1907.
	£	£	£	£
Gold	2,270,904	2,027,490	243,414†	71,528,978
Silver	143,572	169,484	25,912*	1,090,751
Copper-ore	...	595	595*	18,823
Chrome-ore	...	...	...	38,002
Manganese-ore	40	26	14†	61,857
Antimony-ore	...	2,118	2,118*	54,716
Hæmatite ore	...	5	5*	444
Mixed minerals	18,421	30,448	12,027*	189,300
Kauri-gum	522,486	579,888	57,402*	14,022,905
Totals	2,955,423	**2,810,054**	**145,369†**	**87,005,776**

* Increase. † Decrease.

II. PERSONS EMPLOYED.

The appended 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	2,888	3,405	2,845	**9,138**
Antimony	2	19	21	**42**
Copper	47	63	2	**112**
Hæmatite	...	...	2	**2**
Iron	...	23	2	**25**
Platinum	...	...	11	**11**
Scheelite	...	...	51	**51**
Cinnabar	2	...	2	**4**
Tin	...	...	2	**2**
Greenstone	...	...	2	**2**
Totals	**2,939**	**3,510**	**2,940**	**9,389**

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 Underground.		Surface.		About Dredges.		Total.	
	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.
Northern	...	1	1	4	...	1	...	5	1	6	...	...	2	17
West Coast	...	...	1	...	...	...	...	...	1	2	1	1	3	3
Southern	...	...	...	...	...	...	...	...	...	1	2	1	2	2
Totals	...	**1**	**2**	**4**	...	**1**	...	**5**	**2**	**9**	**3**	**2**	**7**	**22**

Being at the rate of ·84 fatalities per 1,000 persons employed.

IV. GOLD-MINING.

For the year a decline of £243,414 in the value of gold-production below that of the previous year has to be recorded, this decline being confined to alluvial and dredge-mining, the gradual exhaustion of which has been apparent for several years past. During the year, however, the scanty rainfall and consequent reduction of water-supplies has greatly contributed to the abnormal decline in the production of alluvial gold. It is extremely satisfactory to note that the returns from the quartz-mines again constitute a record for the Dominion, showing an increased production of £50,485 above that of the previous year. Dividends declared by registered gold-mining companies amounted to £731,951, representing the high proportion of 36 per cent. of the value of the total production from all gold-mines, which is probably the highest proportion ever recorded in any country. These figures would be considerably increased if the profits of the privately owned mines, which are unobtainable, were added to the dividends of the public companies here given.

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

—	Production of Gold, 1907.	Dividends paid, 1907.	Percentage of Production paid in Dividends.	Number of Persons ordinarily employed.
	£	£	Per Cent.	
Quartz-mining	1,544,572	628,866	40·7	3,740
Dredge-mining	419,634	89,707	21·1	1,150
Alluvial mining ...	63,284	13,378	21·1	4,248
Totals, 1907 ...	**2,027,490**	**731,951**	**36·0**	**9,138**
Totals, 1906 ...	2,270,904	790,020	34·7	8,551

For comparison, the value of the production and the proportion of the same paid in dividends in New Zealand, Western Australia, and Transvaal is here given :—

State or Country.	Production of Gold, 1907.	Dividends paid.	Percentage of Production paid in Dividends.
	£	£	Per Cent.
New Zealand, 1907	**2,027,490**	**731,951**	**36·0**
West Australia, 1907	7,106,419	1,635,271	23·01
Transvaal, 1907 (year ending in June) ...	26,640,490	6,572,963	24·7

(1.) QUARTZ-MINING.

This, the most productive branch of gold-mining in New Zealand, continues to increase in prosperity, as shown in the following statement :—

Inspection District.	Tons of Ore treated (of 2,000 lb.).		Value of Bullion.		Dividends paid.	
	1907.	1906.	1907.	1906.	1907.	1906.
			£	£	£	£
Northern	520,061	464,237	1,375,035	1,312,720	589,691	590,135
West Coast	98,027	100,207	160,533	169,929	39,175	51,718
Southern	8,190	9,877	9,004	11,438	...	...
Totals	**626,278**	574,321	**1,544,572**	1,494,087	**628,866**	641,853

The following is a statement obtained from companies' returns showing the quantity of quartz treated, the value of bullion yielded, together with working-costs, and dividends paid by the principal quartz-mines during the year :—

Name of Mine.	Tons of Quartz treated.†	Value of Bullion.	Average Value per Ton.†	Total Cost per Ton.†	Dividends paid.		Number of Persons ordinarily employed.
					1907.	Total to End of December, 1907.	
Northern District—		£	£ s. d.	£ s. d.	£	£	
Waihi Gold-mining Company (Ltd.)‡	356,974	826,010	2 6 3	1 0 0·46	396,726	2,693,274	1,500
Grand Junction Gold-mining Company (Ltd.)	40,875	71,742	1 15 1	*	...	...	290
Waiotahi Gold-mining Company (Ltd.)	11,562	149,833	12 19 2	2 11 11	117,000	391,800	122
Talisman Consolidated (Ltd.) ...	46,025	184,446	4 0 2	1 4 1½	75,000	165,000	320
Komata Reefs (Ltd.)	28,430	47,129	1 13 6	*	...	26,667	170
New Zealand Crown Mines (Ltd.)	22,072	57,242	2 11 10	*	...	70,000	160
May Queen (Ltd.)	2,692	3,771	1 8 0	1 15 3	...	*	32
West Coast District—							
Keep-it-Dark Quartz-mining Company (Ltd.)	13,441	15,795	1 3 6	0 15 7	3,000	157,667	56
Progress Mines of New Zealand (Ltd.)	55,305	87,805	1 11 9	1 0 1·54	34,375	295,625	320
Consolidated Gold-fields of New Zealand (Ltd.)	25,681	44,470	1 14 7	*	...	125,487	175
Big River Gold-mining Company (Ltd.)	685	4,285	6 5 1	*	1,800	1,800	16
Other quartz-mines	22,536	52,044	2 6 2	*	965	*	579
Totals, 1907	**626,278**	**1,544,572**	**2 9 3**	...	**628,866**	*	**3,740**

† Short tons of 2,000 lb. dry weight. ‡ The total value of the output of this company at the end of the year was £6,290,113. The dividends here given are free of income-tax. * Unknown.

Northern Inspection District

The history of the northern goldfields for the year has been one of progress, and developments have occurred on the Waihi and Karangahake goldfields which augur well for the continued prosperity of the quartz-mining industry. The features of the year have been the steadily increasing bullion-producing powers of the Waihi and Talisman Mines, the result of improved ore-values obtained from the development of the deepest levels, together with more complete extraction, by recent improvements in the milling, treatment, and bullion-saving plants on these goldfields.

On the Thames Goldfield, formerly the most productive in the Dominion, there has been a decline in the gold-production owing to the practical exhaustion of the rich run of gold at the Waiotahi Mine, and of the upper auriferous zone throughout the field generally. It is satisfactory to note, however, that a commencement has been made in (Government subsidised) deep-sinking operations by the May Queen Company from the Queen of Beauty pumping-shaft, which it is proposed to deepen to the 1,000 ft. level for the purpose of unwatering and developing the lower levels, which have hitherto been inaccessible. Owing to the central position of this shaft, the whole of the rich area which has in the past produced bullion to the value of between £7,000,000 and £8,000,000 sterling will be accessible at the 1,000 ft. level by means of crosscuts of inconsiderable length from the Queen of Beauty shaft.

Waihi Gold-mining Company (Limited): In the foregoing statistics the prosperity of the famous Waihi Mine is shown; upon comparison with the returns for the previous year an increase, both in production and dividends paid, will be noted. The underground developments continue to be very satisfactory, and the ore-reserves in sight have increased, and are now estimated by the company to be 1,299,979 short tons. The most important developments have appeared in the No. 8 (850 ft.) and No. 9 (1,000 ft.) levels, the latter being the deepest operations in the mine and on the goldfield. To describe the underground operations without accompanying plans and sections would be unsatisfactory, owing to the immense ramification of workings upon the complex vein system here exploited, but some impression of the magnitude of operations carried out may be gained from the following particulars regarding the length of drifting along, and average width of the veins being mined at the No. 8 (850 ft.) level, the deepest level of actual mining operations at the end of 1907:—

Name of Quartz Vein.	Length Driven on Level. Ft.	Average Width of Quartz Vein. Ft.
Royal	1,425	15
Empire	1,038	29
New Reef	50	Not known.
Martha	2,644	110
Welcome	226	110
Total	5,383	264

Regarding this extensive width of quartz veins, it may be stated that the bulk is considered by the management to be payable. During the early part of the present year — 1908 — further developments of importance have been carried out. At the No. 8 level the Edward vein has been intersected, and has been found to have improved in ore-values and increased in width. In the southern drive at this level crosscuts have proved the reef at different points to be from 75 ft. to 92 ft. wide, and to be worth from £10 5s. 10d. to £3 3s. per ton. At the No. 9 level (1,000 ft.) a crosscut from the No. 5 shaft has intersected the Royal reef, 16 ft. wide, 9 ft. of which averaged over £1 7s. per ton. At the reduction-works there are installations of 330 stamps, the total average number running during the year being 316·5, with an average daily duty of 3·794 tons per stamp. In addition, there are twelve tube mills, eight of which are now driven by 3 units (of 200-horse power each) of Crossley gas-engines (a 1,000-horse-power plant of this type having been installed), which have already effected an economy of 50 per cent. in coal-consumption. The tube mills are of the Davidson 22 ft. type, run at a speed of 27·5 revolutions per minute, and have proved most efficient in the reduction of the pyritic chalcedonic quartz of average hardness from this mine. Each mill is loaded with 5·5 tons of flints, the quantity consumed being 18 cwt. per mill per week. Barry's patent Honeycomb liners are used, and have proved most satisfactory, the life per set being from twelve to fifteen months, and the cost per ton milled being under one-sixth of that of the imported silex-boxes formerly in use. A paper on the subject of these liners has been courteously contributed by Mr. H. P. Barry, M.Inst.M.M., and this appears in Appendix E, attached to this report. The daily tonnage of sands passing through the tube mills is about 77 tons per mill. After grinding in three tube mills, 70·87 per cent. of the slimes has been found to pass through a screen of 150 mesh. The cost of running the tube mills per ton of sand passed through them is 1s. 2d., and on the total mill tonnage 9·1d. per ton of ore crushed. The chief benefits derived from the use of tube mills at Waihi are—(1) Increased extraction, amounting to about one-sixth per ton on the whole of the ore crushed; (2) increased tonnage of fully 36 per cent.; (3) a saving of 75 per cent. on the cost of screens; (4) amalgamation improved by from 5 to 7 per cent.; (5) the slime, owing to the contained fine sand, is more easily treated. The reduction of milling-cost due to the use of the tube mills is fully 6d. per ton on the total tonnage; this, together with one-sixth improved extraction, represents a total increased saving of 2s. per ton. After the tube-mill treatment the slimes are treated by agitation, and finally by vacuum filtering. During the past year thirty-two tall agitator circulating tanks of B. and M. type have been installed, together with the necessary air-compressors,

vacuum and solution pumps. This machine, which has given great satisfaction on the New Zealand and Mexican goldfields, consists of a deep cylindrical-shaped vat, with a large pipe running up the centre, and it is by this means that agitation is carried out by the aid of air forced into the residues, no other power being required to operate it. This vacuum, applied as it is, causes the whole of the charge to boil up, in appearance similar to the more active of the boiling-mud pools in the thermal districts of this Dominion. A specially written paper on this efficient agitator, kindly contributed by the inventor and patentee, Mr. F. C. Brown, superintendent of the Waihi Grand Junction Mine, appears in Appendix E. The total extraction obtained at the Waihi Mine was, according to assay, 89 per cent. of the gold and 70·3 per cent. of the silver contents. During the year a settlement occurred on the hanging-wall side of the Martha vein above No. 5 level, but beyond the destruction of a small section of old timbering no damage was done, the old levels and depleted stopes having previously been almost completely packed to the surface. Subsidences of this nature may be expected after removing such large masses of solid vein-matter and replacing the same with mullock or any other packing, for, however carefully packing may be constructed, such stability as that given by the original vein-filling cannot be attained; moreover, the exploitation of the ramified veins at Waihi tends to partially detach large and weighty masses of country rock from the original formation. Every precaution that engineering skill can devise is being taken to secure this mine from injury by subsidences, and no fear need be entertained that these precautions will not be successful.

Waihi Grand Junction Mine: The opening-up of this mine has proceeded with very fair results, and there can now be no doubt but that the Waihi vein system exists in the north-west area of the property, and will be further developed as depth is attained; but as the mine is drained to a considerable extent by the pumps at the adjoining Waihi Mine, its development at depth is at present controlled by that company's unwatering operations. During the year the principal developments have been concentrated on the Nos. 2, 3, and 4 levels, at depths respectively of 500 ft., 636 ft., and 794 ft., and the whole of the milling-ore has been obtained from the Martha and No. 2 veins; but with the attainment of depth, on the evidence of discoveries which have been made during the early part of 1908, other veins will shortly contribute to the output, and with this end in view the main shaft is now being deepened to the No. 5 level. The reduction plant, which is electrically driven, is otherwise very similar in character to that employed at the Waihi Mine, and the process of treatment is almost identical.

The Talisman Consolidated (Limited) Mine is now the leading bullion-producing mine on the Karangahake Goldfield, and ranks second only to the Waihi Mine in this Dominion. A plan and section of this mine which accompany this report will serve to illustrate the magnitude of mining operations, and the engineering skill by which several small mines, which formerly were unsuccessfully worked as separate concerns, have now been consolidated and worked most profitably as one mine. The foregoing statistical tables show that during the past year there has been a substantial increase in production and value per ton of ore treated, likewise in dividends paid by this company. The feature of the year has been the exceptional richness of the ore in the lowest levels: at levels Nos. 11 and 12, Bonanza section, the rich sulphide-ore chute has been proved to extend much further southward than in the upper levels, where from a seam 2 in. or 3 in. in width it has strengthened rapidly in width and values; and in the No. 12 level it has been driven along for some hundreds of feet; at the No. 13 level, at a vertical depth of 1,700 ft. from the apex of the vein, this ore-shoot continues to be of exceptional richness, and a considerable quantity of it has been exported for special treatment on account of its refractory character. To enable the management to handle the increasing output from this mine, additional installations are being made to the power and treatment plant.

Waiotahi Mine, Thames Goldfield: Owing to the practical exhaustion of the "bonanza" which was discovered between the 4th and 5th levels towards the end of 1904, and from which ore approaching in value £400,000 has since been won, there has been a decline in gold-production and dividends paid during 1907, but this mine still produces profitable milling-ore of lower grade, and will continue to appear among the dividend-paying mines. The principal developments during the year have been devoted to the No. 6 level (500 ft.), and from thence a winze was sunk 80 ft. to the water-level, but as yet nothing of importance has been disclosed. The deep-sinking and unwatering operations at present being carried out at the adjacent Queen of Beauty shaft to the 1,000 ft. level will be of considerable benefit to this property by enabling continued development to the aforesaid depth.

West Coast Inspection District.

There has to be recorded a slight decline of £9,396 in the value of the gold-production during the year from the Reefton goldfield, but developments have been satisfactory, and it is probable that an improvement will occur during 1908.

The operations of the Progress Mines (Limited) continue to be very satisfactory, as proved by the regularity of the dividends, the sum of £34,375 having been so declared annually for the past three years. The most important feature at this mine during the year was the successful development of profitable ore-bodies on the Nos. 9 and 11 levels. On the latter (1,450 ft.) a vein of considerable value was proved for 140 ft. in length, and a quantity of high-grade ore was obtained from it.

The mines of the Consolidated Goldfields (Limited) have improved their position by an increase both in the quantity of ore treated and the value of the production. At the Wealth of Nations Mine developments were concentrated on the Nos. 8 and 10 levels, at the former of which a valuable but irregular and narrow block of ore was disclosed. The quartz mined was taken almost exclusively from the main reef on the Nos. 7 and 8 levels. At the Golden Fleece Mine, also the property of this com-

pany, developments consisted in driving upon No. 14 level to the limit of the ore-body with unimportant results. At the Keep-it-Dark Mine, which has so long been, and still continues, on the dividend-paying list, developments during the year have not been up to the average, but it is satisfactory to note that the ore-values are now improving as depth is attained.

Operations at the Blackwater Mines (Limited) have during the year been carried out systematically on sound lines, and without ostentation, and there is satisfactory evidence to suppose that the gold-production of the West Coast district will shortly be increased from this mine. A main shaft has been sunk past the No. 3 level to a depth of 457 ft., head-gear and winding equipment have been erected, and on the completion of the milling and treatment plant now being speedily installed this mine will enter upon its career under favourable auspices.

Southern Inspection District.

There has to be recorded a slight increase in the production of the quartz-mines in the Provinces of Otago and Southland, but the yield for the year only amounted to £9,004, and, as in the case of the previous year, no dividends were declared by registered quartz-mining companies. It is gratifying to state, however, that renewed activity is being devoted to this branch of mining.

At the mine of the Barewood Gold-mining Company (Limited) improved prospects have recently been obtained at the No. 4 (300 ft.) level. A 29-horse-power Campbell producer-gas plant (Tangye, maker) was installed for operating the battery, with such beneficial results that a saving of 2s. 7d. per ton of ore milled has been effected in the cost of fuel when compared with that consumed by the oil-engine formerly in use. The testimony in favour of gas plants for power-generation at this and the Waihi Mine, where they have been lately introduced, is entirely satisfactory.

(2.) Dredge-mining.

During the year, as will be seen from the following statement, the average yield per working dredge was £3,278, being an increase of £277 on that obtained during the former year; there has, however, to be recorded a decline of £81,565 in the gold-production, and the number of working dredges has decreased by thirty-nine.

There is now reason to believe that the industry has settled down to a steady and permanent level, which will be more satisfactory to shareholders. There has been a tendency in the past to place expensive dredges upon claims which after a few phenomenal yields, or perhaps not even that, have subsequently turned out valueless; but this condition has now materially altered, and claims are worked systematically by well-established methods, and, as a result, the industry, taken all round, has been run on sound commercial lines. It has been proved that it is of no advantage moving the dredge about on the claim for the purpose of picking the eyes out of it; experience has taught that the only proper method is to work it in a face, taking the bad with the good. The application of electricity has been extended by the Earnscleugh Gold-dredging Company to their No. 5 dredge, as a result of the successful installation of this power on the same company's No. 3 dredge the previous year, by which a saving in the cost of power amounting to 50 per cent. was accomplished.

The introduction of shaking tables of different design to replace revolving screens, which appeared to be in favour during the previous year, has not proved as satisfactory as was expected, and the tendency is now to revert to the revolving screen and elevator in preference to the stationary sluice-box, although it must be admitted, after inspection of the areas dredged over, that by the latter appliance the ground operated upon is restored to a more suitable condition for agricultural purposes.

The following statement shows the number of dredges, the gold produced by them, and the dividends paid during 1906 and 1907:—

Inspection District.	Number of Dredges.				Number of Persons ordinarily employed.	Yield during 1907.	Average Yield per Dredge, 1907.	Dividends paid.	
	1906.		1907.						
	Idle.	At work.	Idle.	At work.				1907.	1906.
						£	£	£	£
West Coast ...	7	31	2	25	201	75,676	3,027	16,488	24,086
Southern ...	23	136	35	103	949	343,958	3,339	73,219	79,636
Totals ...	30	167	**37**	**128**	**1,150**	**419,634**	**3,278**	**89,707**	103,722

In the Southern District eight dredges are now operated by hydraulic power and two by electricity.

The following is a statement regarding the most productive dredges the property of registered companies during the year, the dividends declared by privately owned dredges being unobtainable:—

Name of Dredge.	Production during 1907.	Dividends paid	
		During 1907.	To 31st December, 1907.
West Coast District—	£	£	£
Pactolus (2 dredges)	17,337	10,312	48,125
No Town Creek	7,897	3,600	20,400
Southern District—			
Electric	9,797	4,550	122,850
Golden Treasure	7,099	2,301	20,995
Manuherikia	4,852	1,800	28,550
Masterton	8,639	4,500	19,500
Mystery Flat	9,071	5,236	13,504
Otago	7,788	1,250	14,750
Rise and Shine	14,075	6,000	9,900
Waikaka Syndicate	10,344	4,900	11,900
Waikaka United	12,908	7,560	26,600
Argyle	4,713	Unknown	6,492
Other working dredges (both districts) ...	305,114	37,698	271,482
Totals	**419,634**	**89,707**	**615,048**

In the Southern Inspection District the Waikaia field has proved most consistent during the year, the Mystery Flat, Waikaia, and Koputai dredges obtaining some excellent returns. Since its opening at the beginning of 1905 this field has progressed wonderfully; seven dredges, the property of registered companies, have produced gold to the value of £124,222, of which £47,973 has been returned as dividends, in addition to which there is one privately owned dredge, the Duke of Gordon, from which the returns are not available.

The Molyneux River has throughout its course furnished its usual quota to the year's yield, but there has been nothing remarkable about the operations of individual dredges, very few of those in Otago exceeding 100 oz. for any week.

On the West Coast dredge-mining operations gradually continue to decline. On this field the most profitable work was carried out by the Pactolus No. 2 dredge, operating at Nelson Creek, where a rich run of gold was encountered, from which during the first week in December a return of 350 oz. of gold was obtained, which constitutes a record for West Coast dredges. The Pactolus Company declared during the year £10,312 in dividends, the highest of any dredging company in the Dominion.

(3.) Alluvial Mining.

The prolonged droughts on the goldfields of the South Island during 1906 and 1907 have proved disastrous to the alluvial gold-mining industry, and the annual value of the gold-production from this source, which formerly was recorded in millions of pounds sterling, during 1907 only amounted to £63,284, independent of the gold-dredging returns.

At the well-known Blue-spur Mine hydraulic sluicing and elevating operations were retarded during the year, owing to the shortage of water, no less than 2,500 hours when compared with the time worked during 1905, and a similar state of affairs existed at most of the other sluicing claims.

The dividend-paying mines included the Arrow Falls Sluicing Company, £1,505; the Paterson's Freehold Company, £2,400; the Waitahuna, £1,075; and the Roxburgh Amalgamated, £2,915; the latter company having been enabled, owing to their extensive water-rights from the Teviot River and storage-dam at Lake Onslow, to supply all their requirements.

A method of obtaining water for hydraulic sluicing by other means than the construction of lengthy races at high elevations is now extensively employed in the Western States of America and in British Columbia, where the later installations of hydraulic plants use turbines and centrifugal pumps of several steps to raise the water from creek or river against considerable heads, and deliver the same at the sluicing-face at high pressure for operating giant nozzles. The power by which these pumps are operated may be either electrical, steam, producer-gas, or hydraulic. In this Dominion there has for some time been installed one plant of this character at the claim of the Tamaiti Gold-mining Company (Limited), on the Tuapeka River, Otago. This plant has now been in operation long enough to pronounce definitely as to its efficiency and economy from actual working tests, and it has been found that beyond a trifling expenditure in lubricating-oil, amounting to about 1s. per day, and the wear-and-tear of the belting, the capital and working expenditure do not exceed those of the ordinary hydraulic sluicing and elevating systems, no extra labour being necessary; but, on the other hand, a considerable economy is effected in the cost of the construction of lengthy conduits, and their maintenance.

The Tamaiti Company, for the purpose of working the alluvial terrace banks of the Tuapeka River, where the water necessary for hydraulic sluicing and elevating may not be conducted by races in the ordinary manner owing to the unfavourable configuration of the country, installed a plant in design somewhat similar to that in successful operation at Rogue River, Oregon, U.S.A. The Tuapeka River, situated at a level considerably below the area to be worked, is utilised

to operate a powerful Sampson turbine, the water-level being raised 30 feet by means of a dam across the river near the claim. The power thus obtained is applied to centrifugal pumps, which raise the water to such a level as to enable its being used in the ordinary manner for hydraulic sluicing and elevating. The following comparison of the conditions prevailing and the plant installed at the Tamaiti Claim, New Zealand, and at the Rogue River, Oregon, U.S.A., will serve to illustrate that this system may be successfully applied to either large or small concerns :—

—	Tamaiti Gold-mining Company, Otago, New Zealand.	Rogue River Company, Oregon, U.S.A.
Water utilised for turbines	73 cubic feet per second	3,538 cubic feet per second.
Head at turbines	30 ft.	21 ft.
Turbine-installation	One 26 in. horizontal single discharge, Sampson type	4 units of four turbines each, vertical draft-tube type.
Power conveyed by	Belting	Transmission-gear, and a line-shaft connected directly to flexible couplings attached to the pumps.
Pumps (to claim)	1 unit of 4 step 10 in. centrifugal type (Tangye)	4 units of 5 step 18 in. centrifugal type.
Pipe-main (to claim)	10 in. diameter	22 in. diameter.
Height pumped (to claim)	160 ft.	430 ft.
Pumps raise (to claim)	6 to 6·5 cubic feet per second (one pump)	Each pump 20 cubic feet per second (four pumps employed).
Size of Giant nozzles	Various (small)	3 in. diameter (four employed).
Pressure of water at nozzles at claim	Not gauged	160 lb. per square inch.

Note.—The total cost of the Tamaiti plant and equipment, including the dam, was only £3,000 (approximately).

Alluvial-mining operations at Ross Flat, Westland (a plan and sections of which accompany this report), after many years of inactivity, are about to be re-established by the Ross Goldfields (Limited), which company has been formed for the purpose of unwatering and working the deep alluvial gravels, which have remained unworked since 1887, when, through the inadequacy of the pumping equipment then employed, an inflow of water from old workings flooded the mine then being worked by the Ross United Company. The present company is capitalised at £80,000, of which £50,000 is to be devoted to working-capital, with shares to the value of £10,000 held in reserve for future issue for a similar purpose if required. The following is the scheme, evolved for the most part by Mr. H. M. Smyth, M.A., the company's electrical engineer, by which it is proposed to recover and exploit this goldfield. It is proposed to utilise water-power, conveyed from Lake Kanieri, which lies at a level of 422 ft. above the sea, and is supplied by a catchment area of 16 square miles, by the already-constructed Kanieri water-race, the property of this company, for a distance of about six miles to the Kanieri Forks, where it will be used for the purpose of generating electricity for transmission to Ross Flat, there to be utilised as a motive power to work centrifugal pumps, hoists, lighting, and all mining machinery, The capacity of the water-race is 40 cubic feet per second, and it will deliver into the pipes at an effective elevation of 240 ft. above the Pelton wheels at the power-house. The power will be transmitted from thence about twenty-two miles to Ross Flat, the line of transmission for the greater part of this distance following the main road and the railway-line. The pumps employed are designed to deal with 3,500 gallons per minute under normal conditions, from a depth of 400 ft., and 4,500 gallons per minute in case of an emergency. It is further proposed to construct a drainage adit to remove the flood and surface water to a depth of 90 ft. below the present surface-level at the mine, thus reducing the pumping of the water from the deep levels by 90 ft. of vertical height. It is then intended to open out and repair the main pumping-shaft of the old Ross United Company, and to place the electrical pump-motors and new pumps in that shaft, and to unwater it to its entire depth—viz., 390 ft. The next operation will be to unwater all the old workings of the Ross United, Cassius, and Morning Star mines, together with all the old claims on the Ross Flat area. A new working and winding shaft will then be sunk in such a position as to command the efficient and economical working of the entire flat. This shaft it is proposed to sink 100 ft. deeper than any of the present known workings, so as to open out new gold-bearing deposits, and, if possible, reach the main bottom, which has never yet been done at Ross Flat. The present intention is to open out drives, and work the rich auriferous layers which had to be abandoned by the Ross United and Cassius Company owing to inundation. These auriferous layers averaged in value 11s. 4d. per cubic yard, and during the last two days of the Cassius operations £325 was reported to have been won. The cost of mining did not then exceed 5s. per cubic yard. The present company contemplate dealing with at least 300 cubic yards per shift, and propose to work three shifts per day. A contract has been let for the erection and installation of all the electrical plant from the power-house to the mine, to be completed by April, 1909. The power-line will consist of three hard-drawn copper wires, No. 5, B. and S., having a cross-section of 33·102 circular mils, and diameter 0·18194 in. The lines are to be mounted in the form of an equilateral triangle of 3 ft. side, one on the top of the pole and one at each end of the cross-arms. The pumps are to be two Worthington multi-stage turbine pumps, connected to three-phase squirrel-cage type of induction motors, each pump to have a capacity of 1,000 gallons per minute ; also two multi-stage turbine sinking-pumps of a capacity of 750 gallons per minute. The Pelton wheels are to be of the twin type, with double jets, giving 550-horse power each, also one small Pelton of 25-horse power. Two three-phase alternating-current generators will be used. The above undertaking will be watched with considerable interest by the mining community, for, in addition to the exploration and development of the deepest gravels yet mined, it is the first attempt that has been made to apply hydro-electric power to deep alluvial mining in this Dominion. These operations have been subsidised by the Government to the extent of £15,000 from the item specially voted by Parliament.

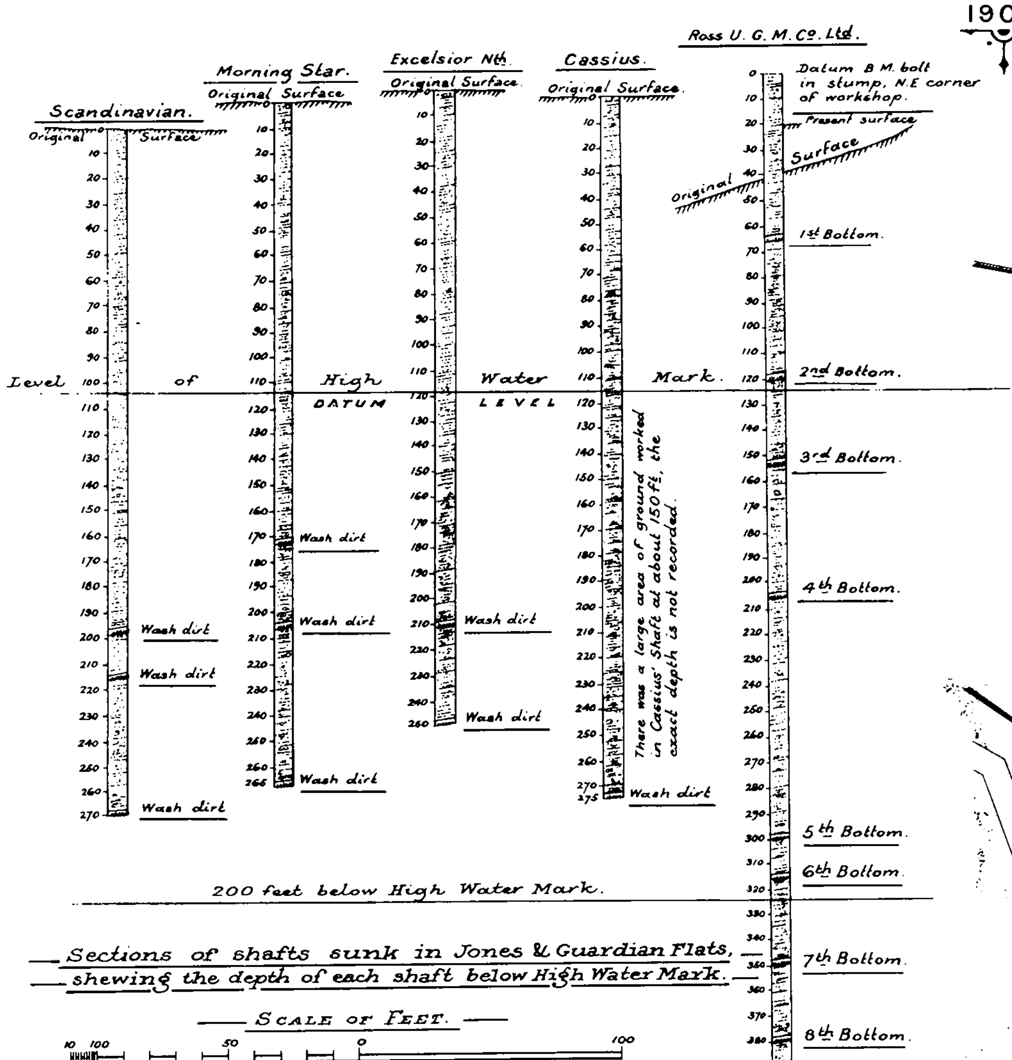
PLAN & SECTIONS OF ROSS GOLDFIELD.

SHOWING ALLUVIAL GOLD WORKINGS, LEASES, &c.

Compiled from Official Records
by
Frank Reed. M Inst: M.E., Lic: Surveyor. Inspecting Engineer of Mines.

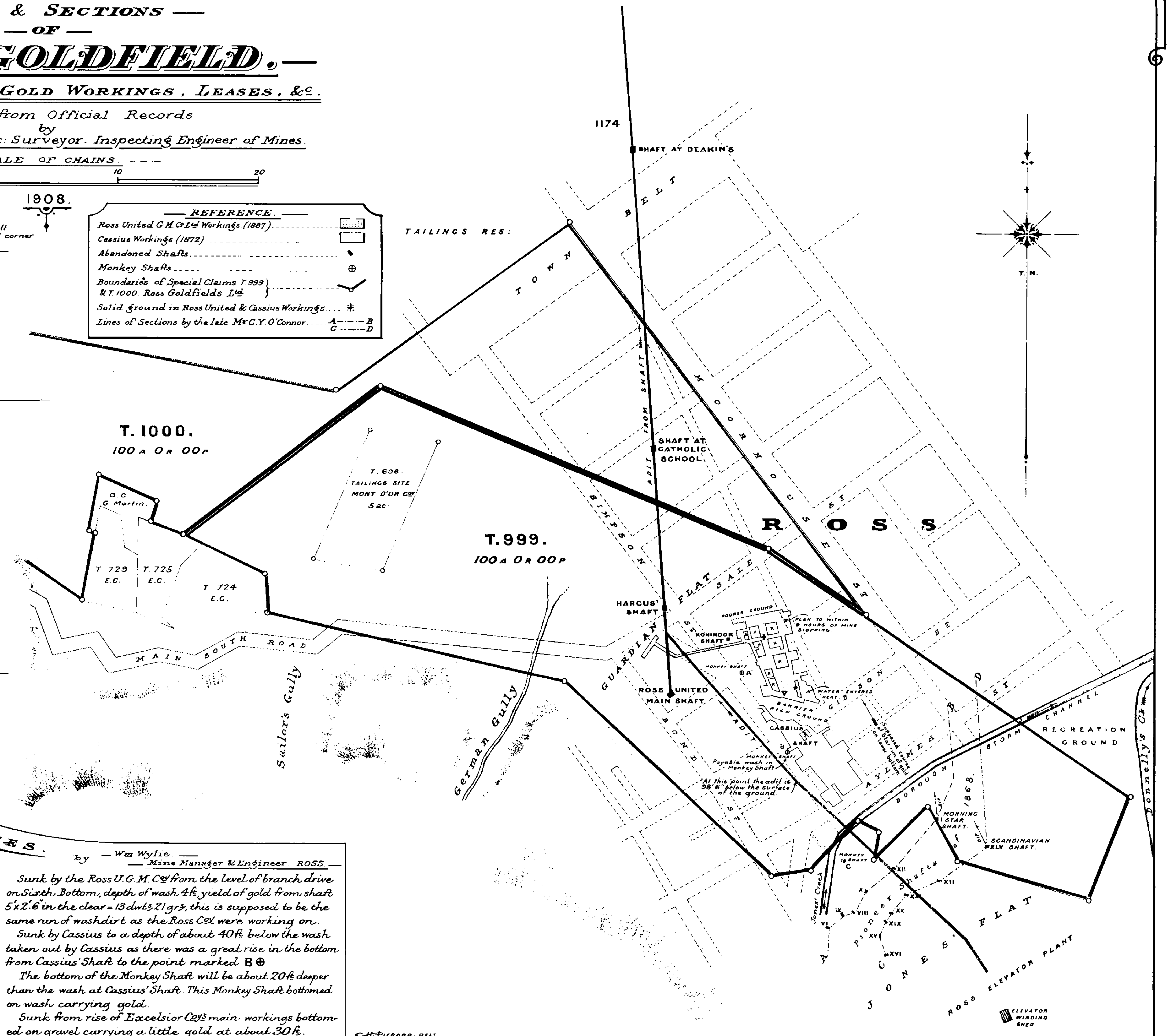
SCALE OF CHAINS.

1908.



Sections of shafts sunk in Jones & Guardian Flats, shewing the depth of each shaft below High Water Mark.

SCALE OF FEET.



GENERAL NOTES.

by Wm Wylie
Mine Manager & Engineer ROSS

The point marked thus ∇ on the Ross United Gold Mining Coy's workings is 32 ft below the level of "Cassius" shaft as shewn in section. The fall in the Ross U.G.M. Coy's Ltd workings between the points marked ∇ & + is about 11 ft. The rise between "Cassius" & northern shaft of the Excelsior Coy being 29 ft.

Prior to inundation the Cassius Claim worked 35 weeks & 4 days; the Morning Star worked 34 weeks; & the Excelsior 27 weeks 5 days; the amount of gold obtained was:– from Cassius Claim 4722 ozs, 11 dwts 17 grs, the Morning Star 4094 ozs 6 dwts 23 grs, and from the Excelsior Claim 2726 ozs 11 dwts 5 grs making a total yield of 11,543 ozs 9 dwts 21 grs, during a period (taking the average) of 32½ weeks; which is 366 ozs 9 dwts 5 grs per week.

The whole area worked by these companies from 1867 to 1872 does not exceed seven acres.

The result of 35 days work from the Ross U.G.M. Coy's shaft was 614 ozs 14 dwts 0 grs.

Monkey Shaft thus A ⊕ Sunk by the Ross U.G.M. Coy from the level of branch drive on Sixth Bottom, depth of wash 4 ft, yield of gold from shaft 5'x 2'6" in the clear = 13 dwts 21 grs, this is supposed to be the same run of washdirt as the Ross Coy were working on.

Monkey Shaft thus B ⊕ Sunk by Cassius to a depth of about 40 ft below the wash taken out by Cassius as there was a great rise in the bottom from Cassius' Shaft to the point marked B ⊕

The bottom of the Monkey Shaft will be about 20 ft deeper than the wash at Cassius' Shaft. This Monkey Shaft bottomed on wash carrying gold.

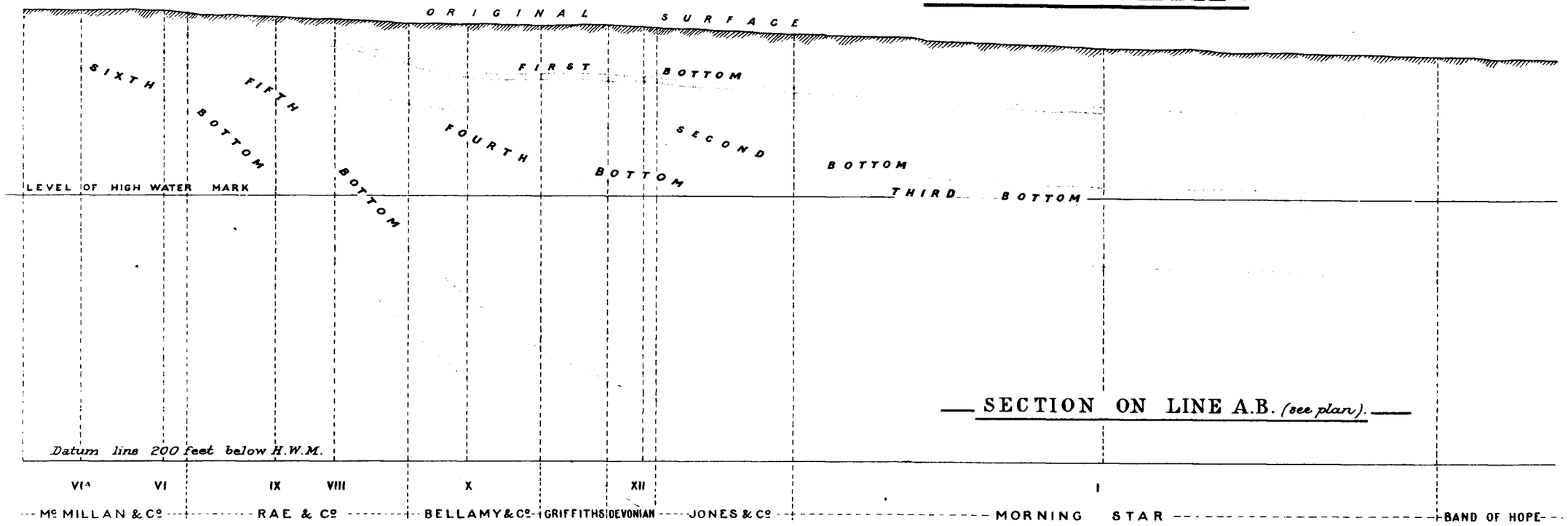
Monkey Shaft thus C ⊕ Sunk from rise of Excelsior Coy's main workings bottomed on gravel carrying a little gold at about 30 ft.

By Authority: John Mackay, Government Printer.

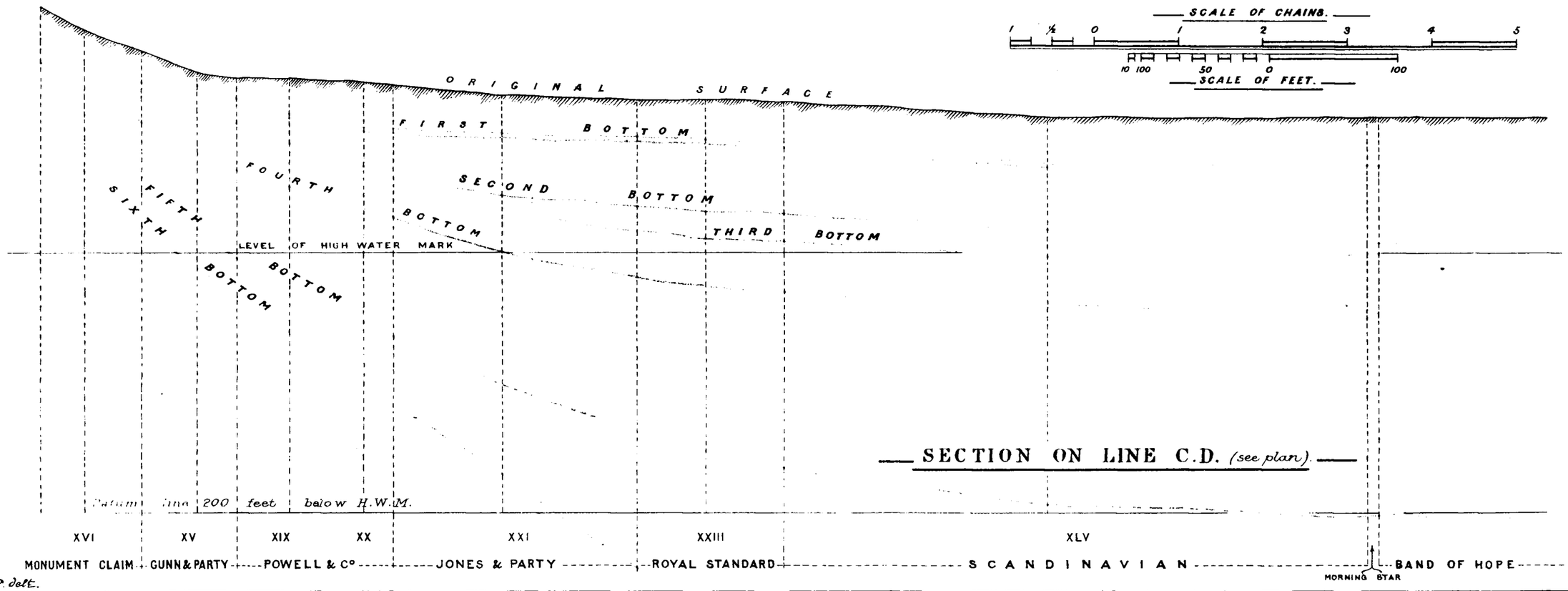
2350 - 6/06 - 521

Reproduced from Sections by the late C.Y.O'Connor. C.B. M Inst C.E.
by Frank Reed. M.I.M.E. Inspecting Engineer of Mines.
1908.

SECTIONS OF THE PIONEER ALLUVIAL GOLD WORKINGS ON ROSS FLAT.



SECTION ON LINE A.B. (see plan).



SECTION ON LINE C.D. (see plan).

C.H.P. delt.

By Authority: John Mackay, Government Printer.

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V. MINERALS OTHER THAN GOLD.

Copper.

The sudden and severe fall in the market prices of the industrial metals has proved disconcerting to forecasts and projects based upon values that have been found to be unnatural and unstable, and has acted prejudicially to the continuation of the development of several of the copper-mines which had been reopened during the late era of high prices.

At Whangaroa operations are still carried on at two properties, at one of which—viz., the Northern Mine—underground developments have disclosed an improvement in width of formation and values.

Near Woodville the old Maharahara Mine, which was recently reopened by an Auckland company, has been for the third time in its history closed down, protection having been granted. The mining operations at this mine consist of two drives in the eastern slope of the Ruahine Ranges, distant from Woodville about nine miles by road. These drives, which have a difference in level of about 300 ft., both intersect a large lode of siliceous hæmatite containing copper-ore in pockets in the form of chalcopyrite and other sulphides, but not apparently in sufficient quantity to be payable. A shipment of this ore was exported for treatment, and £2,138 was reported to have been spent upon the property during the year.

In the South Island the Maoriland Copper Company, nea Nelson, have carried out a considerable amount of development-work on their United, Monster, and Champion Mines. Pumping and sawmill plants have been erected, and there is every appearance that systematic work is intended.

Scheelite.

An increase of £12,079 in the export of scheelite has to be recorded for the year, the concentrates from this valuable ore finding a ready and improving market in Europe.

Induced by the success attending the operations of Messrs. W. and G. Donaldson, of Macrae's Flat, Otago, and Messrs. Reid and party at Glenorchy, Lake Wakatipu, together with the high price ruling for tungstic acid, which is extracted from the concentrates of this mineral, a number of scheelite-mining leases have been recently taken up in Otago.

Milling and concentrating plants have been installed at Macrae's, Otago, and at Glenorchy, Lake Wakatipu, and there is every reason to believe that scheelite-mining will shortly become an important industry in the Dominion.

This mineral occurs commonly in mica schist and altered sedimentary rocks. At Macrae's it is found in bunches and stringers through the quartz.

At the Lake Wakatipu Mine the concentrates amount to about 4 per cent. of the ore milled.

The uses of tungstic acid are various. It is used as a mordant in calico-printing, as a constituent in some finer grades of paint, and renders clothing non-inflammable. Its greatest use, however, is in the manufacture of steel of the very highest grades, such as engineers' tool steel for turning-lathes, and steel for the inner tubes of big guns. Its characteristics are great density, toughness, and hardness. Such steel is placed on the market by different makers under a variety of names—nickel tungsten steel, high-speed steel, self-hardening steel, &c. It has within the last few years revolutionised engineering methods. A 1 in. lathe operating on mild steel has removed as much as 7½ cwt. of parings per hour. The lathe may be driven at a speed so great that it becomes glowing hot, yet it does not lose its temper, and is therefore an ideal tool-steel. Turning-work can now be done at less than half the former price, and work which formerly was done at the forge is now done with this steel in the same time that it would take to heat the iron. The steel would be more largely employed but for the fact that the old style of lathe is not strong enough or high enough in speed to make the best uses of it. There is an increasing demand for scheelite, and the future of these mines may be looked forward to with confidence.

Antimony.

At the Alexandra South Antimony Mine winding and pumping machinery has been erected by a syndicate, and it is reported that a company has recently been promoted to work this property. At this mine a small antimony-bearing lode is enclosed in a mica-schist country rock, the matrix of the ore being quartz, in which the antimonite occurs as short irregular bands. The lode outcrops at two points —viz., on the right bank of the Clutha River, about 15 chains above Alexandra Bridge, also at a point about 15 chains further along the road to Clyde. The strike of the vein is about N.N.E. and S.S.W., underlaying to the W.N.W. at an angle of about 45°.

In the North Island nothing of importance has to be recorded in the development of this mineral.

On the West Coast prospecting operations have been carried out at Resolution Bay, Preservation Inlet, and Murray Creek, near Reefton, but no plants have been installed, and it is premature to express an opinion as to the prospects.

Cinnabar.

During the past year very little has been done as regards prospecting for or the development of cinnabar-bearing veins.

In Otago prospecting operations have revealed the presence of this mineral in lode formation on the ranges between the Nokomai and Nevis Rivers. In many of the alluvial deposits of Otago and Southland cinnabar in the form of grains is of frequent occurrence.

Iron.

The hæmatite-deposits at Parapara, near Collingwood, remain unworked, the present depressed state of the mining market in London being considered inopportune for the promotion of a company to operate the same

VI. STATE AID TO MINING.

Subsidised Roads and Tracks.

The expenditure (as subsidies) and the liabilities on outstanding authorities for the year ending the 31st March, 1908, are as follows:—

Name of Local Body.	Expenditure for the Year ending 31st March, 1908.	Liabilities on Authorities on 31st March, 1908.
	£ s. d.	£ s. d.
Sunbeam Gold and Silver Company	...	78 3 6
Tauranga County	25 0 0	25 0 0
Thames County	465 5 6	84 14 6
Ross Borough	50 0 0	...
Lake County	40 0 0	...
Contingencies	762 10 8	...
Totals	1,342 16 2	187 18 0

Roads constructed by Direct Grants.

The following statement shows the expenditure and liabilities on authorities issued on roads from direct grants to the several local bodies during the year ending the 31st March, 1908:—

Name of Local Body.	Expenditure for the Year ending 31st March, 1908.	Liabilities on Authorities on 31st March, 1908.
	£ s. d.	£ s. d.
Whangarei County	...	100 0 0
Coromandel County	4,533 0 0	5,633 0 0
Thames County	2,710 6 2	4,533 12 6
Thames Borough...	300 0 0	100 0 0
Ohinemuri County	1,599 11 0	4,977 13 3
Pelorus Road Board	638 6 3	79 10 0
Takaka County	879 4 6	1,779 17 0
Collingwood County	676 0 6	1,864 0 0
Waimea County	832 8 11	935 0 0
Stoke Road Board	...	50 0 0
Buller County	5,760 11 4	4,989 1 0
Inangahua County	3,276 14 9	4,027 13 11
Grey County	2,091 17 10	2,335 0 0
Brunner Borough	254 17 0	...
Westland County	6,857 2 0	877 1 0
Ross Borough	241 12 6	10 13 7
Waihemo County	...	150 0 0
Tuapeka County	212 6 9	100 0 0
Vincent County	2,132 15 10	396 19 0
Lake County	212 0 0	938 0 0
Southland County	660 0 0	100 0 0
Wallace County	200 0 0	300 0 0
Stewart Island County	...	318 1 5
Roads Department	3,082 4 8	977 17 4
Totals	37,151 0 0	35,573 0 0

Prospecting for Gold.

The following statement shows the expenditure and liabilities on authorities issued in subsidies to prospecting associations and parties of miners in the different counties for the year ending the 31st March, 1908:—

Name of County.	Expenditure for Year ending 31st March, 1908.	Liabilities on Authorities on 31st March, 1908.
	£ s. d.	£ s. d.
Coromandel	349 17 0	395 11 0
Ohinemuri...	87 5 4	156 17 0
Marlborough	...	50 0 0
Takaka	113 0 0	...
Buller	107 18 0	27 10 0
Inangahua	279 18 0	451 17 0
Westland	558 14 9	859 10 6
Lake	89 14 5	359 5 7
Tuapeka	...	100 0 0
Grey	153 5 6	219 14 6
Totals	1,739 13 0	2,620 5 7

VII. SCHOOLS OF MINES.

The schools of mines, which have now been established twenty-three years, continue to contribute to the education of mining and metallurgical students at the principal mining centres, and the number of important positions occupied by students from these schools on many of the great mining fields of the world testifies to the efficiency of the curriculum.

Expenditure on Schools of Mines.

The following table shows the expenditure by the Government on schools of mines since their inauguration, 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.	£ 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
Totals ...	18,439 2 5	1,687 15 9	1,146	16,275 15 0	37,548 13 2

The schools-of-mines examinations were held in December, 1907, and seventy-seven students presented themselves for examination in some of the twenty subjects on which papers were set, the result of such examinations appearing in the *New Zealand Gazette* of the 30th January, 1908. No student succeeded in obtaining first-class passes to the requisite number to entitle him to one of the four Government scholarships at the University of Otago, which are of the annual value of £50, and are tenable for three years.

I have, &c.,

Frank Reed,
Inspecting Engineer of Mines.

APPENDIX.

(*a.*) REPORTS OF INSPECTORS OF MINES.

Mr. Boyd Bennie, Inspector of Mines, Thames, to the Under-Secretary, Mines Department, Wellington.

Sir,— Inspector of Mines Office, Thames, 28th March, 1908.

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 the 31st December, 1907.

Waihi Gold-mining Company (Limited).—The following is a concise report, bearing principally on the mining operations conducted at Nos. 8 and 9 levels, where the most important development-works have been carried on during the year.

No. 9 level (1,000 ft.): North-west crosscut from No. 5 shaft.—This has been extended a total distance of 42 ft. A dam constructed of brick, with cast-iron frame and door, has been erected at a point 24 ft. in this crosscut. This dam is large enough to enable trucking to be carried on through it. In case of emergency it can be closed in a few seconds. At 36 ft. in, the north crosscut towards No. 4 shaft has been commenced. At this same point a south crosscut has been started, with the object of intersecting the Royal lode. The country rock is very firm, and is giving out very little water. A cistern measuring 118 ft. by 7 ft. by 5 ft. has been excavated, also a valve-chamber measuring 33 ft. by 15½ ft. by 15 ft. for third plunger of C pump. It is anticipated that the water will be tapped and pumping commenced from this level early in 1908.

No. 8 level (850 ft.): The greater part of the mine-development during the year has been done on this level.

Royal lode east of North section junction: The level was advanced 406 ft., making a total of 772 ft. Everything points to this lode continuing in width and values as further development proceeds.

West of North section junction: The level was advanced 363 ft., making a total of 653 ft. from North section junction.

No. 4 shaft, north-west crosscut: This crosscut has been extended 128 ft., making a total of 703 ft. from No. 4 shaft. At 584 ft. the Martha lode was intersected, and proved to be 110 ft. wide.

Empire lode: The level was extended westward 657 ft., making a total of 964 ft. from No. 4 shaft, north-west crosscut. At 964 ft. a crosscut was projected north-west 55 ft., where a connection was made to level on Edward lode.

East of No. 4 shaft crosscut: The level was extended 24 ft., making a total of 74 ft.

New reef at 226 ft. in No. 4 shaft, north-west crosscut: The level was driven westward on course of this lode 50 ft., and this vein will be explored during the coming year.

Martha lode: This was intersected for the first time on this level at 584 ft. in No. 4 shaft, north-west crosscut, and proved to be 110 ft. wide. To facilitate the working of this large ore-body, it was deemed advisable to divide it into three sections—namely, Regina section, South section, and North section. A total length of 516 ft. was opened up on the Regina section; a total of 1,176 ft. was driven on South section; and on the North section 616 ft. was driven east and 336 ft. of the main crosscut.

No. 6 shaft crosscut: This has been connected with the Martha lode, No. 6 shaft giving good ventilation. The distance is 143 ft.

No. 2 shaft, west crosscut: This was driven a total length of 300 ft. from No. 2 shaft. At 69 ft. the south section of Welcome lode was met, and proved to be 45 ft. wide. At 160 ft. the second part of the Welcome lode is met; the width of this second body at right angles is 20 ft. The Martha lode was intersected at 248 ft.

Welcome lode: Owing to the lode being very wide, driving has been done on its course in two places. On the South section driving was commenced at 64 ft. from No. 2 shaft, and at 165 ft. on second portion. The South section drive was driven a total of 226 ft.

No. 7 level (700 ft.): Royal lode: The level was extended on the reef for 588 ft. to west of North section junction, or to 51 ft. west of the Edward junction. Two stoping-blocks on the shrinkage method are in operation. They contain at present 27,750 tons of broken ore.

Rex lode: The south end of the level was advanced from 909 ft. to 1,002 ft. from Royal junction.

The irregular mass of ore on the Welcome lode of No. 2 shaft has opened up well. No. 2 shaft has been sunk to No. 8 level, and the drives connected through to the other shafts. A new winding-engine has been erected at No. 4 shaft. No. 5 shaft has been sunk to No. 9 level (1,000 ft.), where the third plunger set is being erected. No. 6 shaft has been sunk and connected through at No. 8 level (850 ft.). The brace with automatic tipping-gear is erected, and the railway-hoppers under it are nearing completion. The main south-east crosscut has been advanced to 1,300 ft. from No. 5 shaft. The Rex reef was passed through at 779 ft., where it was 6 ft. wide. Nothing else but small quartz veins has been met with as yet.

Shafts: Shafts Nos. 2 and 5 have been sunk during the year. The total depths of the six shafts at the close of the year and the depths sunk during the year are as follows: No. 1—total depth, 708½ ft.; No. 2—total depth, 935 ft.; sunk during year, 39 ft.: No. 3—total depth, 348 ft.: No. 4—total depth, 853½ ft.: No. 5—total depth, 1,020 ft.; sunk during year, 157 ft.: No. 6—total depth, 856 ft. About

270,000 tons of filling-material has been obtained from the various filling cuttings and deadwork crosscuts for filling up the depleted stoping-area underground. Nine shafts are in use for conveying the filling into the mine, and the depths of those shafts vary from 500 ft. to 700 ft. Crosscuts to filling pass were projected at Nos. 2, 4, 5, 6, 7, and 8 levels. The total footage driven, risen, and sunk during the year is 19,039 ft.; and the total tonnage of ore crushed amounted to 356,974 (dry weight of 2,000 lb. per ton). The ore has been obtained in the following proportions from the various reefs worked during the year: Martha reef, 177,800 tons; Royal reef, 46,645 tons; Empire reef, 45,660 tons; Welcome reef, 43,339 tons; Edward reef, 13,239 tons; Albert reef, 12,231 tons; Regina reef, 4,339 tons; Victoria reef, 3,871 tons; Princess reef, 3,076 tons; Magazine reef, 2,252 tons; Reef I, 1,528 tons; No. 2 reef, 1,346 tons; Reef J, 1,208 tons; Rex reef, 240 tons: total, 356,974 tons.

The total quantity of water raised to the surface during the year from Nos. 8 and 9 levels was as follows: A pump, nil; B pump, 90,015,359 gallons; C pump, 417,413,000 gallons: total, 507,728,359 gallons.

Subsidence: In October last a settlement was noticed on the hanging-wall side of the Martha, the line of settlement being along the Magazine and Regina lodes, which are practically worked out from the surface to No. 5 level. As most of the old levels have been packed from the surface, and all the depleted stopes well filled with mullock, it is impossible for a serious subsidence to happen. To prevent any excitement among the men underground, the company promptly withdrew them until the settlement had found a solid foundation against the foot-wall, and then resumed operations after a delay of ten hours. Beyond a few sets of timber broken and a small quantity of country rock flaked off the walls of some of the upper crosscuts, no damage was done.

Reduction-works: The tonnages crushed at the three mills, together with the totals crushed during 1906, were respectively as follows: Waihi mill (ninety stamps) and three tube mills running full time (one spare)—1907, 117,409; 1906, 111,056. Victoria mill (200 stamps) and two tube mills all the year, five tube mills during last two months—1907, 211,062; 1906, 189,261. Union mill (forty stamps)—1907, 28,503; 1906, 28,549. Totals,—1907, 356,974; 1906, 328,866. The increased tonnage during the year 1907 thus amounts to 28,108 tons. The total average number of stamps running, exclusive of Sundays and the period at Christmas time during which time the mills were stopped, was 316·488 stamps out of 330 stamps. The total average duty per stamp per diem was 3·794, representing an increase of 0·29 ton per stamp per diem compared with the previous year.

Waihi mill (90 stamps): The balance of the old main shafting was removed during the stoppage at Christmas time and replaced with a stronger one. The No. 2 slimes plant has been finished off, so that it is now possible to treat the whole of the slimes by this means. The elevator wheels Nos. 4 and 5, not being of sufficient capacity to deal with the increased output, have been replaced with larger ones of improved construction. These were built complete, then taken down and re-erected in their proper position during the annual stoppage. The turbine from low-pressure race, which was badly worn, has been brought to surface, and completely overhauled. Its running has been greatly improved. The Honeycomb tube-mill liners continue to give satisfaction, the life of a set of the thickness used being from twelve to fifteen months, and the cost per ton milled being under one-sixth of what it was when using imported silex-boxes. A sawmill is being erected to deal with the timber brought down the Ratarua Tramway. The company has also added to the office buildings at the Victoria mill a room which is being fitted up to receive any person injured while at work.

Victoria mill (producer-gas and tube-mill plants): The main portions of these plants have been completed, and everything in connection with the producers and gas-engine is working satisfactorily. The cost of this power will be considerably lower than the cost of steam, the consumption of coal per horse-power being only about one-half. At present there are seven tube mills erected, which, with the concentrating plant and elevator wheels, are driven by three 200-horse-power Crossley gas-engines. The slimes plant has one unit out of the three completed; the balance will be finished early in the year. The thirty-two agitator tall tanks, worked with compressed air, are erected; the pipe-work is being completed. Eight are now finished, and being filled with slime. The necessary air-compressors, vacuum pumps, and solution-pumps are partly completed, and some are running, the power being supplied by a 200-horse-power Crossley gas-engine. To drive the motors on the overhead cranes, a 35-horse-power gas-engine is used to run the generator, 35-horse-power gas-engine also driving the electric-light dynamo. Another 35-horse-power gas-engine is being erected to drive the blowers, loam mills, &c., in the foundry. The concentrates-treatment plant has been increased by the addition of a standard-size tube mill and six more agitator vats, and a 3 ft. 6 in. Martin filter-press is being erected in place of the small central-filled Dehne press.

Union mill (40 stamps): At present no tube mills are working in this plant. A short conveyor was erected to distribute the ore from the elevator from stone-breaker to the end ore-bin.

The mines and mills were regularly visited during the year, and everything was carried out in a most efficient manner. That great care was exercised for the safety of the men cannot be questioned, and I am pleased to chronicle that no fatal accidents have happened at the mine, although occasionally a few of a serious nature have occurred. At the Victoria mill one fatal accident happened through a workman getting caught in the coupling of a driving-shaft, and being whirled round. An average of fifteen hundred men were employed by the company.

Waihi Grand Junction Gold-mining Company (Limited).—The operations carried out for the past year are as follows:—

No. 2 level (500 ft.): The drive on the Martha lode has been widened out for stoping, and it is found that a large quantity of ore of good quality exists here. The drive on the No. 2 lode has been timbered ready for stoping, and the grade of the drive has been reduced so as to make it easier to truck mullock.

No. 3 level (636 ft.): The drive on the Martha lode has been extended to the boundary, and stoping operations continued. No development-work was done on the No. 2 lode. Stoping operations have been continued, with satisfactory results.

No. 4 level (794 ft.): The drive west on the Martha has been extended to the boundary. Several crosscuts were put out to the hanging-wall, and these showed the reef to be about 45 ft. wide, but with the exception of about 6 ft. on the foot-wall the ore is low grade. Stoping operations have been commenced here. The drive east on the Martha has been extended, and is now about 520 ft. east of the crosscut. For the whole distance there is ore along the foot-wall, but it is very irregular both in width and value. Four crosscuts were put out to the hanging-wall, and these show the reef to be about 30 ft. wide, but the hanging-wall portion is low-grade ore. The drive east on No. 2 lode was extended, and is now about 620 ft. east on the crosscut. Some very good ore was encountered in the drive, and stoping was commenced. A crosscut is being put out towards the Martha lode, and it is expected that it will require about 200 ft. to connect the two drives. A crosscut was commenced to the south of the shaft, and a reef was intersected at about 20 ft. from the shaft. This proved to be a wide reef, but of low values. This crosscut will be extended during the coming year. A start was made to sink the shaft to No. 5 level, but at 20 ft. below the level a reef was cut which brought in a quantity of water, and after sinking to 30 ft. it was decided to suspend operations until a large electrically driven pump had been installed.

Mining machinery: The electric hoist has been working for about nine months, and proves to be a very satisfactory machine for the work. In order to facilitate hoisting operations, a hopper was constructed at No. 4 level, and the ore from the upper levels is sent by gravity to the hopper. By this arrangement all the hoisting of ore is done from the one level. A complete set of new guides has been put in the shaft, as the old ones were badly worn.

Battery: This has been kept steadily running during the year. It was proved early in the year that concentration was necessary in connection with the present process, so eight tables were installed, and this number has since been increased to twelve. The concentrates were at first shipped to Australia for treatment, but the company is now treating them at the mill very satisfactorily. The present process consists of crushing in the battery through ten-mesh screens, the duty per stamp being from 6 to 7 tons per diem. From the stamps the ore goes direct to the tube mills, by means of which it is ground to an exceedingly fine state. The next operation is concentration (amalgamation has been discarded, as it is unnecessary with this ore), after which the pulp is separated into two products—sands and slimes. The sands are treated by percolation, and the slimes by agitation and vacuum filtering. The concentrates are treated by being ground to slimes in a tube mill, and they are then agitated in cyanide solution. Two classes of agitation are used, the A. Z. machine and the B. and M. tanks. The latter require far less power and attention than the former, and are far cheaper to install. After the agitation, the concentrates are filtered by the vacuum process. The future programme of the company is to go in for finer grinding, and to gradually eliminate the sand treatment and treat everything as slimes, and with this object in view extra mills are being installed, and eight B. and M. tanks, each 13 ft. by 55 ft., are being erected. Tests show that the operation of concentrating can be dispensed with provided the ore is all ground exceedingly fine, so ultimately the whole of the ore will be treated by one process, which will mean cheaper handling, both as regards labour and the mechanical cost.

Power-station: Everything in connection with this has been running most satisfactorily, and it has been demonstrated that an up-to-date central station is both economical and convenient.

Waihi West section: Very little work has been done here for the year, but it is the intention of the company to do some stoping on a run of ore that has been opened up, and if the results are satisfactory, extensive work will probably be undertaken.

The mine was inspected several times during the year, and found to be in good order; the ventilation was good, and every precaution was taken for the safety of the men. The return for the year is 40,875 tons treated, for a yield of 78,854·13 oz. (mostly silver), for a value of £71,741 14s. 11d. 293 men were employed.

Waihi Extended.—During the year the shaft was sunk from the No. 3 level (630 ft.) to No. 4 level (786 ft.), and continued to a depth of 806 ft. from the surface, after which a crosscut was commenced to intersect the No. 2 lode. At 100 ft. what was thought to be No. 2 lode was cut and driven on for a distance of 400 ft., and a connection made with a winze from No. 3 level. This greatly improved the ventilation. At 500 ft. from the shaft a crosscut was driven, and after passing through 7 ft. of country a strong body of ore was cut, which proved to be about 20 ft. in width, and carried payable values in parts. As the vertical depth between Nos. 3 and 4 levels is 170 ft., there is consequently a considerable quantity of ore in sight. This mine is now emerging from what may be termed the "prospecting stage," and it is hoped that the company will soon meet with success. As shown by the following figures, a considerable amount of prospecting has been carried out for the year: Sinking the shaft, 163 ft.; driving and crosscutting, 670 ft.; rising and sinking on reef, 220 ft. An average of seventeen men were employed.

Waihi Syndicate (Limited).—Operations have been confined to sinking the shaft, which has now attained a depth of 539 ft., 144 ft. having been sunk for the year. I understand that an English company hold an option over the property, and that their capital has become exhausted. In June last, work was suspended until further capital could be raised, but the mine is still lying idle. Up to time of closing down £8,000 had been expended on the property, including machinery and shaft-sinking, equivalent to £15 per foot, which may be considered very satisfactory. The country for the last 120 ft. was andesite, and from the collar of the shaft down to a depth of 419 ft. the ground was of a pumice character with coarse gravel. Here a quantity of water was met with, and offered much

hindrance to sinking, but below this depth the work has been conducted with less trouble. As the shaft was securely timbered, and new guides and mine-cages were installed prior to the time of closing down, the unwatering of the mine will be effected by the pump and baling with tanks, and it is expected that very little damage will be done to the shaft by the rising of the water. The mine was inspected during the year. Only one accident of a serious nature happened, through a piece of rock and a lining-board falling down the shaft and striking a workman on the head. An average of twenty men were employed up to the time of closing down.

Walker's Gigantic Mine.—After a considerable amount of prospecting work had been carried out in the way of driving and sinking, the mine was closed down and protection applied for.

Pride of Waihi.—This property is situated north-east of the Extended Mine. Last year some prospecting was done from the Extended Mine by the company, who started a prospecting drive, which, however, was not extended for any great length. The property has been under protection for a greater part of the year.

Waihi East Syndicate.—This syndicate's mine adjoins the Waihi-Gladstone, and the work carried out consists of driving a prospecting adit level. A lode was cut and driven on for some length. The manager intends driving towards the Gladstone property, in hopes of cutting one or more of the ore-bodies said to be running into the mine. Two men were employed, and at the time of my visit operations were being carried on satisfactorily.

Waihi Gladstone Mine.—The company have done a considerable amount of pro pecting, but with very little success. A crosscut was driven a distance of 400 ft. at the No. 2 level 200 ft.), making a total distance of 600 ft. from the shaft. Several ore-bodies were cut through, but they yielded unremunerative values. The last lode cut is 13 ft. wide, but the ore proving poor in this place, and the ventilation being indifferent, further prospecting on the lode was postponed for a time. The work was done by contract, and an average of four men were employed.

Ohinemuri River Syndicate.—Very little work has been done on this claim for the past year, but I am informed that additional capital has been raised, and that preparations are being made for the addition of new machinery to the plant.

Waihi Beach.—The chief work for the year was the extension of the north and south drives on the Treasure Island reef, where encouraging prospects are said to have been met with. The lode has been driven on south of the crosscut for a distance of 154 ft., with an average width of 3 ft. 6 in. The North section was driven a distance of 47 ft., making a total length of 757 ft. north of the crosscut. Assays were made, and the average value is said to be about £2 14s. 10d. The lode in the North section is about 5 ft. wide, and as it is intact from the level 355 ft. deep, there is a considerable quantity of ore to be stoped, and should this ore-body retain the same value throughout its length and height, it will be a valuable one. The north-east drive, on the Treasure Island lode, was known to be approaching a large reef, and a dam was constructed to prevent the flooding of the mine in the event of a sudden influx of water when the reef was cut. Unfortunately a great inrush of water was occasioned by cutting into the reef, with the result that either the dam was carried away, or that the leakage through the dam was sufficiently large to permit the flooding of the mine. Consequently operations were suspended pending the erection of additional machinery and the installation of another pump to cope with the water. The company has expended £14,300 in prospecting and developing the mine. It is said that the expense of carting machinery and coal to the mine is greatly augmented through there being no formed road from Waihi. The Ohinemuri County Council intend making a road to the mine, towards the construction of which the Mines Department will give assistance. The mine was inspected during the year, and found to be in good order. An average of twelve men were employed.

Katikati.

The Eliza Claim.—Prospecting-work has been done, with but little success. A low level was driven, towards which the Mines Department granted a subsidy. A track was constructed from Thompson's Track to the mine, enabling supplies to be brought in with greater convenience than hitherto. It is intended to drive a tunnel from the level of the creek into the hill, which will provide fully 200 ft. of backs.

Owharoa.

Rising Sun Claim.—During the year a little driving was done on a reef in the adit level, and encouraging prospects having been met with, the manager decided to prospect. A winze was sunk and driving done on the reef, from which good values were obtained. The reef is 15 in. wide. An average of four men were employed.

Waitekauri.

New Waitekauri.—The mine is a portion of the property belonging to the old Waitekauri Gold-mining Company, and has an area of over 9 acres. Mining operations for the year have been confined to stoping and ri ing on a block of ore left in by the old company. The block is situated between the Horn and the Queen levels, and the lode averages 4 ft. in width and is 900 ft. long. The mine is connected with the mill by a ground-tram 3,200 ft. in extent, and also by an aerial tramway 800 ft. long. 254 tons of ore was crushed, for a yield of 152 oz., giving a value of £265 17s. 6d. An average of thirteen men were employed.

Maoriland.—Operations have principally been confined to stoping on a block of ore above the adit level, from which 934 tons were crushed, for a value of £1,234 14s. Better results were expected, and, as the owners are mostly working-men, the demand made on them to meet the difference of expenditure over income caused great inconvenience, and consequently the mine has been closed down and protection granted.

New Golden Cross.—A syndicate has taken up a portion of the claim belonging to the old Waitekauri Company, and reopened two of the old adit levels. Four men were employed prospecting small blocks of ore left by the former company, but nothing of importance has been revealed.

Durbar.—This mine is situated at Waitekauri, and is a portion of the Alpha ground, where a considerable amount of work was done formerly. The present company's operations are confined to prospecting in the upper levels, and a parcel of 100 tons of ore was mined and sold to the Komata Reefs Company at £1 19s. per ton. Another parcel of 10 tons was treated at the Day Dawn and Norfolk Company's battery. Four men were employed, and the mine, when inspected, was found in good order.

Huanui.—A considerable amount of driving and rising has been done. Samples of ore taken from the reef worked were satisfactory.

New Zealand Jubilee Mine.—Mining operations have been directed to the Horn level section, where the main lode has been driven on for 363 ft. south, but no payable ore was encountered. Altogether, 700 ft. has been driven, risen, and crosscut. Five men were employed.

Ohinemuri.

Talisman Consolidated (Limited).—In the mine at Nos. 11 (river-level) and 12 levels (200 ft.) the payable ore in the Bonanza section has been found to extend much further south than it did in the upper workings, and the values have also shown an improvement. In the bottom level, No. 13 (400 ft.), in the Southern section, ore of a very high grade has been met with, the richer portion of which is being bagged for shipment. During the coming year it is intended to continue vigorous development southward on Nos. 11, 12, and 13 levels, and as soon as the new power plant is available shaft-sinking will be resumed. A new power plant will also be installed, having sufficient capacity to supply all probable requirements. The past year has been the most profitable one the company has experienced, and the general appearance of the mine indicates that the present year should show equally favourable results. I regret to announce that one fatal accident happened at this mine, but through no carelessness or lack of precaution on the part of the management. For the year, 46,025 tons of ore were treated, for a value of £184,445, being a decrease in tonnage and an increase of £32,434. An average of 320 men were employed.

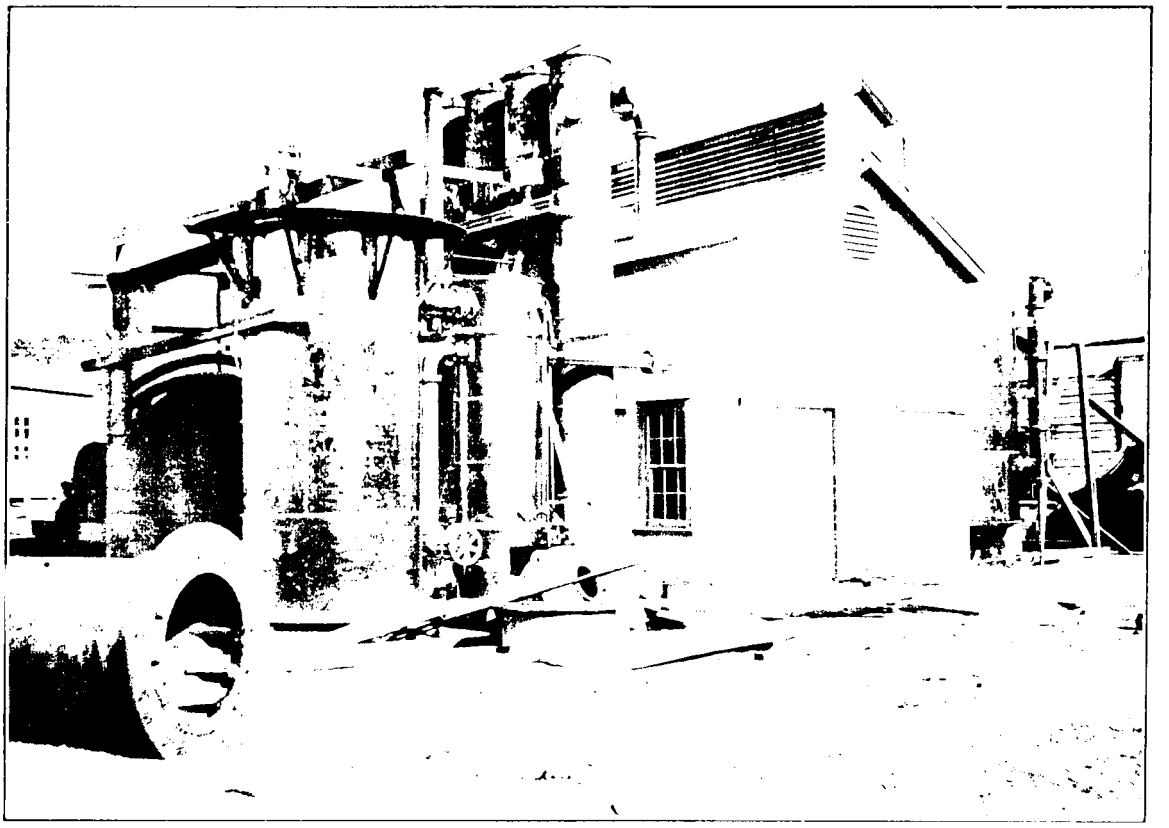
New Zealand Crown Mines (Limited).—The main shaft has been sunk a depth of 10 ft. only, making a depth of 46 ft. below No. 5 level (481 ft.) and 526 ft. below the Waitawheta Tunnel. On the No. 5 level a winze was sunk to a depth of 234 ft., when a stream of water was struck, which absorbed the surplus pumping-power, and sinking had to be suspended. The water flowing from the winze gave off a small volume of sulphuretted-hydrogen gas. The sinking of the main shaft was suspended pending the erection of machinery of efficient pumping capacity. No. 5 level (481 ft.), south of the main-incline shaft, has been extended a distance of 229 ft., making a total distance of 2,094 ft. driven from the shaft. During the extension of the drive a shoot of ore, 5 ft. in width and 120 ft. in length, was met with, carrying an assay-value of £6 per ton. A crosscut has been started from No. 5 level for the purpose of cutting the new reef, which is situated about 480 ft. east of the Crown lode. A distance of 128 ft. has been driven. In the upper workings the new reef yielded good values, and should it make good values down below the Waitawheta level the crosscut will open up a large area of ground for stoping. The New Reef section, Waitawheta level (river-level), south of the south-east crosscut, has been extended 405 ft., making the total distance driven from the crosscut 747 ft. 10 in. The average width of the reef was 1 ft. 1 in., and the average value of the ore £1 4s. 9d. per ton. No. 1 level (86 ft.), No. 2 level (155 ft.), No. 3 level (226 ft.), and No. 4 level (340 ft.), above the Waitawheta level, were extended for about the same distance (400 ft.), and the values ranged from £2 to £4 per ton. No. 1 rise has been extended, making a total height of 678 ft. above the Waitawheta level, and connected by a drive from the side of the Karangahake Mountain, considerably improving the ventilation in the New Reef section. The company's water-race on the Ohinemuri River, which was destroyed in the early part of the year, is now being reconstructed, and the milling plant has been worked by steam. The mine was inspected on several occasions, and found to be in good order. An average of 160 men were employed. At the company's mill 22,072 tons of ore were treated, for a value of £57,242, showing a substantial increase over the previous year.

Comstock United.—This mine has not yet emerged from the prospecting stage. Early in the year a company was formed, and their attention has been directed to driving on a lode of considerable width, and, from samples of ore taken, it is said that there are sections carrying fair values. Considering the length of the drive, the ventilation, caused by a line of pipes and a water-tromp on the exhaust system, is very good. For upwards of thirteen years Mr. Tregoweth has held to the mine, spending an amount of capital and carrying out a great amount of prospecting. The mine, when inspected, was found in good order. An average of five men were employed.

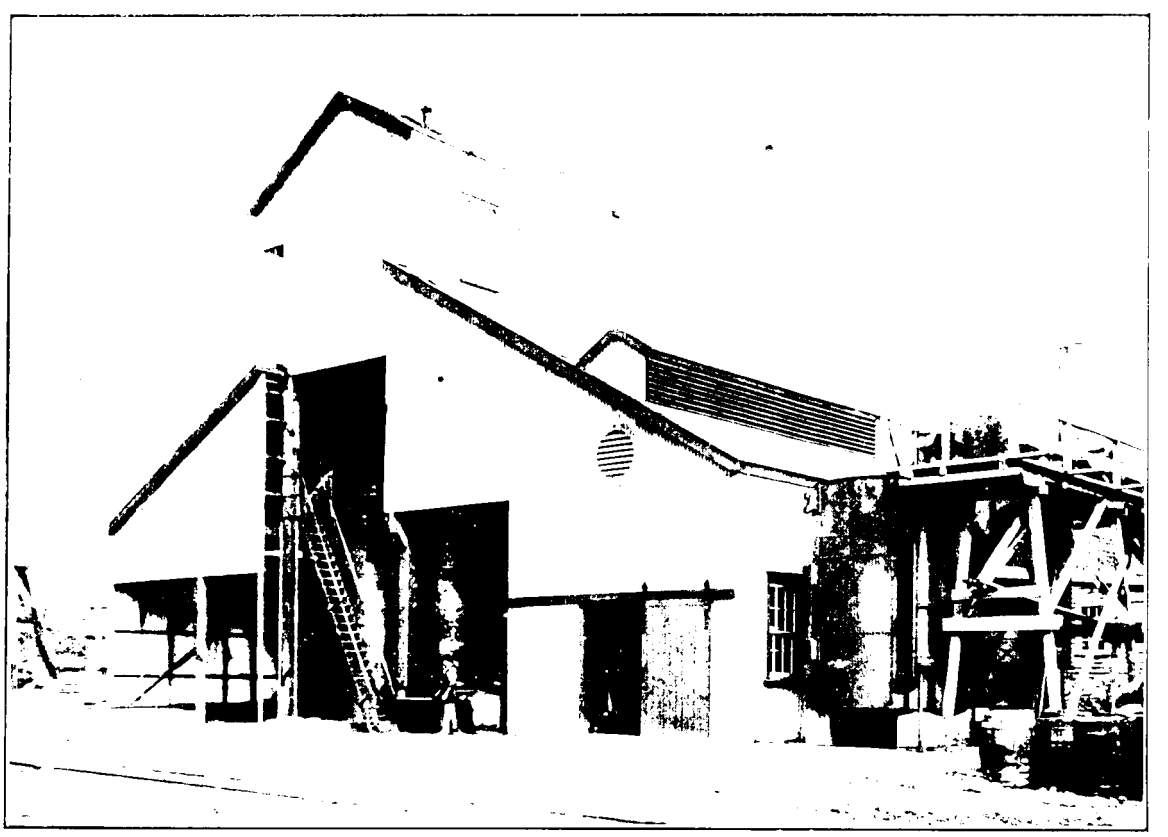
Karangahake Gold-mining Company.—This company opened up a claim early in the year, and carried on mining operations most vigorously. Two levels were driven into the hill, with a view of cutting the Woodstock reef. When No. 1 level (70 ft. deep) had been driven a distance of 25 ft., a new leader was cut, and samples taken. Prospecting on the outcrop of the leader revealed some very rich specimens. A winze was then sunk for 15 ft. on the leader, at which depth stone showing gold freely was found. A low level—No. 2 (120 ft.)—has been commenced, the intention being to cut the leader at a depth. An average of seventeen men were employed.

Te Aroha District.

Hardy's Mines (Limited).—This company's mine was under protection for some time, and later in the year a contract was let to drive a tunnel, about 125 ft. below the Colonist No. 4 level.

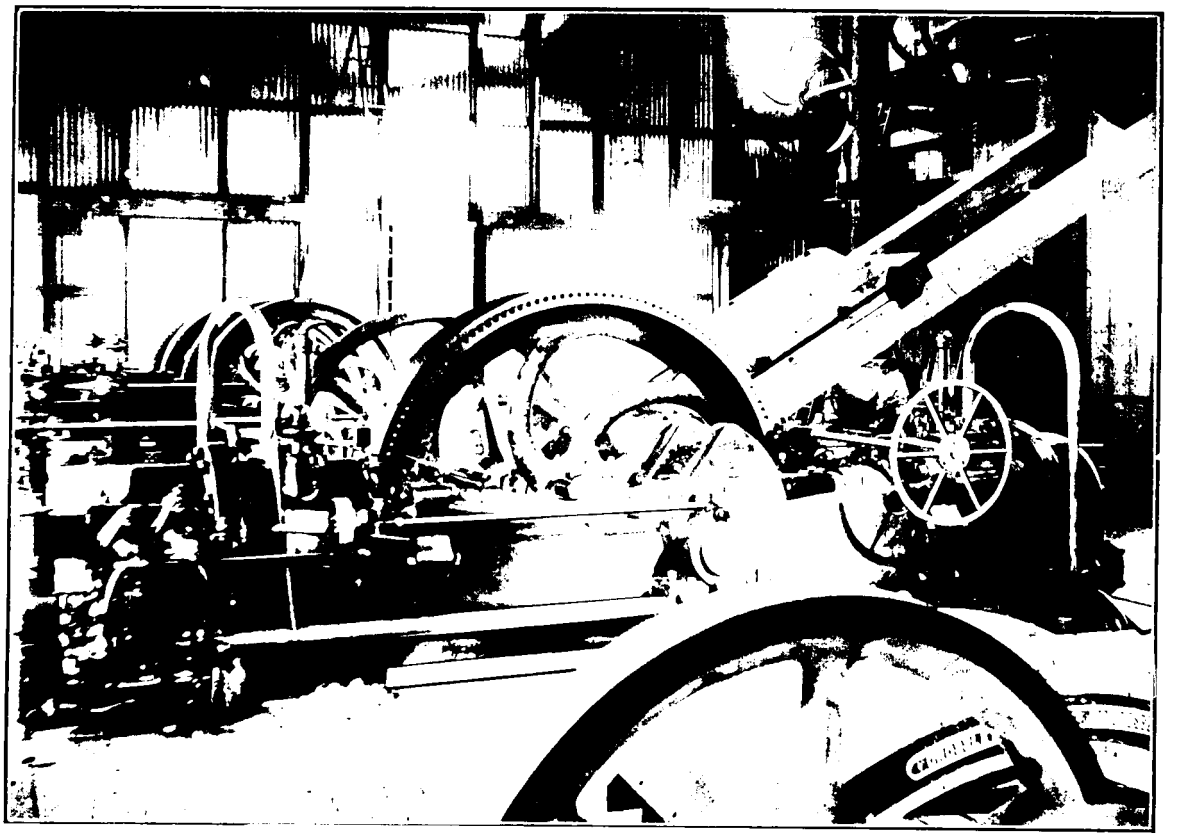


In course of Erection.

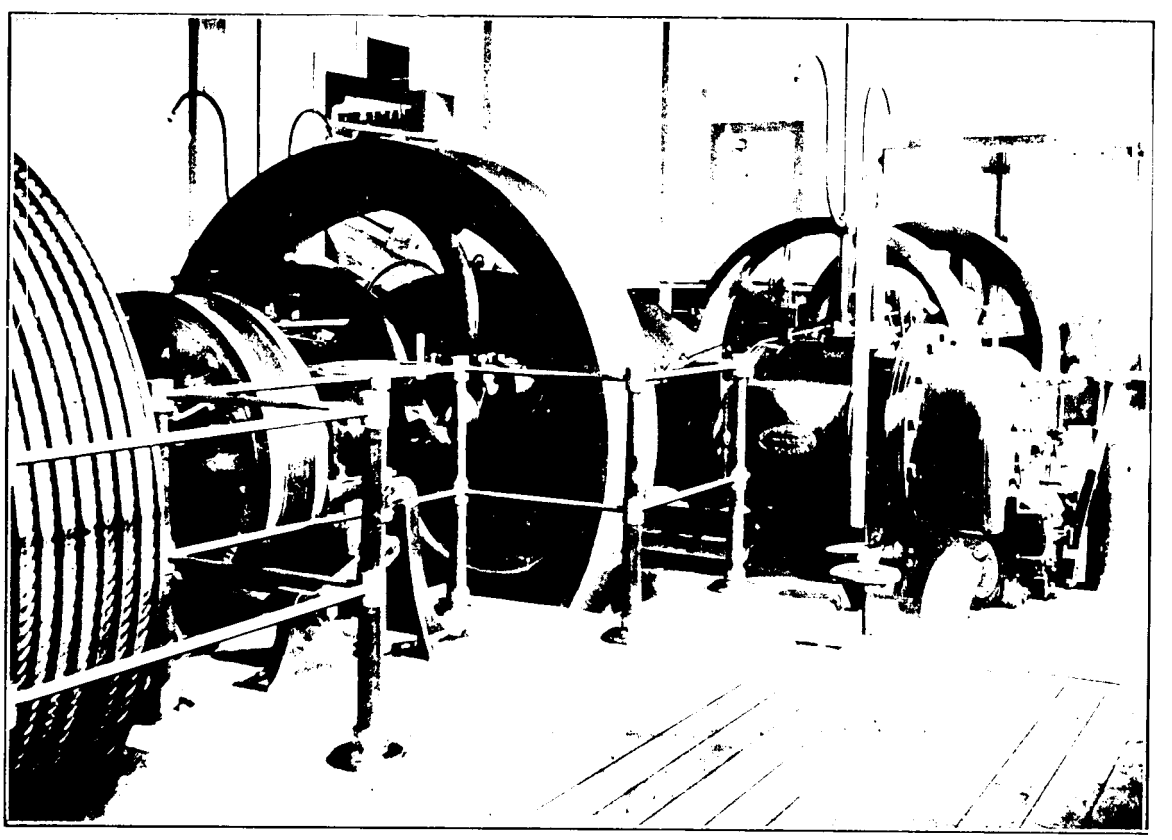


Completed and working.

Waihi Gold Mining Company (Limited): 1,000 horse-power Crossley Producer-gas Plant.



One Engine of 200 horse-power, and two of 40-horse power in the background.



The Main Engine-room, containing three units of 200-horse-power each, two of which are here shown. All drive Tube Mills.

Waihi Gold-mining Company: 1,000-horse-power Crossley Producer-gas Plant.

THE TALISMAN CONSOLIDATED. LTD.

SECTION OF WORKINGS.

Compiled from Official Data.

by

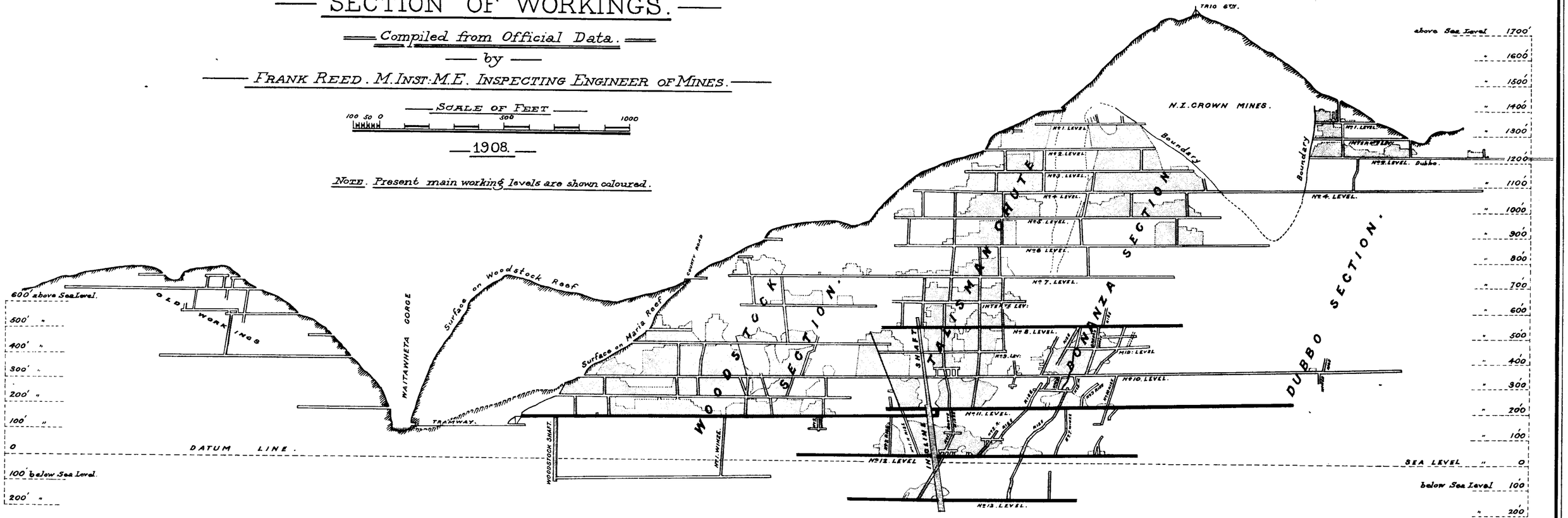
FRANK REED. M.INST:M.E. INSPECTING ENGINEER OF MINES.

SCALE OF FEET

100 50 0 500 1000

1908.

NOTE. Present main working levels are shown coloured.



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By Authority: John Mackay, Government Printer.

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It is intended to extend this drive to a distance of 850 ft., to cut several reefs known to exist in that part of the company's property. Rock-drills are being used in the new drive, and at the end of the year 80 ft. had been driven. An average of nine men were employed.

Komata District.

Komata Reefs Mine.—No. 3 level: A considerable amount of driving was done on the No. 1 reef in a northerly direction, and this showed the reef to average 8 ft. in width, the average value being £2 10s. A winze was put down to the No. 4 level (420 ft.), but evidently in a poor place, as the average value of the ore was 16s. per ton. No. 2 reef was driven on 65 ft. in a northerly direction, and the present face shows the reef pinched to about 1 ft. in width. Some very good ore was met with in this drive. Two winzes were put down to the No. 4 level, and these both show that the ore carried down to that level. No. 4 level (420 ft.): A large amount of driving was done on the No. 1 reef. The average width was 5 ft., and the value of the ore will average about £2 per ton. This drive has added very considerably to the ore-reserves. A winze was commenced, and has been put down about 70 ft., showing good ore all the way down. No. 2 reef was also driven on, but without encouraging results. A winze was put down to the No. 5 level (540 ft.), and this showed good ore all the way down. No. 5 level (540 ft.): A distance of 245 ft. was driven on the No. 2 reef in a northerly direction, and the last 180 ft. has been in very good ore, the average width being 5 ft. This drive is very encouraging, and is proving that the ore-body worked on in the upper levels is extending down. Stoping operations were carried on as usual on the two reefs. The battery has been kept steadily running during the year, and is now handling 110 tons of ore per day. The process consists of crushing in the battery of twenty stamps through screens with four holes to the linear inch; grinding in tube mills (two, each 16 ft. by 4 ft.), so that 60 per cent. of the pulp goes through 200-mesh sieve; and then separation of the pulp into sand and slime. The sand (about 50 per cent. of the whole) is treated by percolation, and the slimes by agitation in eight B. and M. agitation-tanks, and subsequent filtering in Turn-over vacuum filters. The process is very simple, and gives excellent results, the extraction of the gold being 93 per cent. and of the silver 83 per cent. The assay-value of the ore treated was £1 16s. 3d. Both the mine and the battery were always found to be worked efficiently, leaving no room for complaint. 28,420 tons of ore were treated, for a value of £47,128. An average of 170 men were employed.

Hikutaia District.

New Maratoto Mine.—During the year operations were confined to stoping on the Maratoto and Payrock reefs, from which 954 tons of ore were obtained and treated, for a value of £864 12s. 6d. The return did not come up to expectations. An average of ten men were employed.

Silver Stream Mine.—This claim is owned by a syndicate of four men, who are themselves working the property. When the mine was visited, it was found that the ore above the adit level had been stoped out, and a winze had been sunk below the level. 14 tons of ore was treated, for a value of £934.

Champion Mine.—Little or nothing has been done in the mine during the past year. Attention has been given to the erection of a battery and the construction of a water-race. On the completion of these works, active development-work will be undertaken in the mine.

Kirikiri.

Kirikiri Mine.—The company have started a low level, with the object of opening up another block of ground, which, when completed, will give 170 ft. of backs. Nine men were employed stoping, driving, and crosscutting, and 275 tons of ore was treated, for a value of £745.

East Coast Mines.

Auckland Mine.—Operations were confined to the working of a small block of ore on the outcrop of the reef, which was found to be of a payable character. Some of the old stopes were filled with earth and rubbly quartz from the cap of the reef, and it was thought that it would pay to run out the filling and have it put through the mill. However, expectations were not realised. The surface block of ore having been worked out, and the values at No. 4 level (adit) proved to be unpayable, the mine was closed down, as extra pumping and winding machinery would be necessary in order to sink below the low level (No. 4). Two men were employed, and 350 tons of ore treated, for a return of 280 oz., valued at £512 11s. 10d.

Waimangu Mine.—The prospecting carried on during the year has consisted chiefly of trenching and driving. Several reefs were discovered, but of an unpayable character, and the mine has consequently closed down. A parcel of ore of 11 tons was treated, for a value of £53.

Taihoa Mine.—During the past year very little work has been done. A new company has been formed, and I believe they intend to test thoroughly the ore-bodies on the property.

Golden Belt.—Driving and stoping on the reef in the upper level has been the only work of importance done. 3,000 tons of ore were treated, for a value of £4,753 18s. 10d., which covered the cost of mining and milling. The mine was inspected and found in good order. An average of forty-five men were employed.

Tairua Broken Hill.—Operations were confined to the new reef in the foot-wall of the Blucher reef. Some good ore was obtained from this lode, which has a width of 3 ft. The mine was found in good order. 2,501 tons of ore were treated, for a value of £11,321. Sixty men were employed.

Coronation Claim.—This mine has been under protection for the greater part of the year,

Golden Hills.—The work consists of driving a low level, which will give 600 ft. of backs. When 100 ft. had been driven a lode averaging 6 ft. was intersected, and gave satisfactory results. It is proposed by the company to prospect the ground in a vigorous manner. An average of eight men were employed.

Tairua Triumph.—Seven men were employed driving a low level to intersect the reef system worked in the upper level, with satisfactory results.

GUMTOWN.

Kapowai Mine.—A low level has been driven a distance of 540 ft. without intersecting any reef, and it is intended to continue this prospecting drive for some distance yet. The company suffered considerably from the recent bush-fires, and some time will have elapsed before everything is again in order. A summary of work done is as follows: Driving, 1,233 ft.; rising, 145 ft. An average of thirteen men were employed, and 460 tons of ore was treated, for a value of £569 11s.

THAMES DISTRICT.

Waiotahi Mine.—The company's attention has been directed towards driving and stoping on the main Cure and foot-wall reefs, at the No. 6 level (500 ft.). A winze was sunk for a distance of 80 ft. down to the water-level, and about 100 ft. of driving has been done from the bottom of it, but nothing encouraging was met with. A considerable amount of driving was also done on several reefs at that level, and some blocks of ore are now opened up for stoping. The return for the year shows a big falling-away from that of the previous year. Substantial returns were maintained for a greater portion of that time, after which there was a heavy decline. 11,562 tons of ore were treated, for a value of £149,833 11s. 1d., enabling the company to pay dividends to the extent of £117,000. An average of 122 men were employed.

Kuranui-Caledonian Mine.—The principal works undertaken during the past year were prospecting the Specimen leader and No. 2 reef between Nos. 2 (203 ft.) and 3 (239 ft.) levels, and driving a crosscut at No. 1 level (130 ft.) to intersect the reef system at a depth of 150 ft. below the Moanataiari tunnel-level in the Kuranui section of the property. Between Nos. 2 and 3 levels a considerable amount of driving was done both on the Specimen and No. 2 reef; at several points excellent indications were met with, but nothing of a payable character was discovered. The crosscut at No. 1 level (130 ft.) has now been extended a total distance of 560 ft.; several ore-bodies have been intersected, and a little gold seen in one of them. The work is almost under the point where it is expected the Kuranui reef system will be intersected. All these lodes gave excellent results where worked in the upper levels, consequently the company is looking forward with confidence to opening up some valuable blocks of ground in this section of the mine. During the year twenty-six loads of quartz and 11 lb. of picked stone were treated, for a return of 48 oz. 6 dwt. of gold, valued at £125 8s. 11d. An average of ten men were employed.

New Moanataiari.—Work has been confined to the development of the Cambria reef, which traverses the property from the western to the eastern boundary, a distance of 1,155 ft. The mine was under protection for six months, and with the limit number of men employed. During the remainder of the year the work done was very little. 100 tons of ore was treated, for a yield of 62 oz. 11 dwt., valued at £161 9s. 8d. Eight men were employed.

Old Alburnia.—Mining operations for the year have been purely of a prospecting character. The main Moanataiari tunnel has been extended a further 253 ft., and at that point a large reef was cut and driven on both east and west. The western drive on the reef was extended 261 ft. The lode maintained its width, and, although the country looked favourable, nothing of any importance was discovered. Driving was stopped. The drive on the eastern course of the reef was continued for a distance of 472 ft. Crosscuts were driven at various points, with a view to finding the width of the ore-body. Sample tests showed the ore to be of low grade, and unpayable. The men who have been working a portion of the claim on tribute have met with better success. 111 tons of ore and 256 lb. of picked stone were treated, for a yield of 377 oz. 19 dwt., valued at £981 18s. 1d. Eight wages-men and twelve tributers were employed.

Kuranui Mine.—Work has chiefly been of a prospecting character, conducted on the surface or upper levels, where driving, rising, sinking, and stoping was done on several small ore-bodies in the vicinity of the place in which very rich specimens were found by Hunt and party, and from which remunerative returns were obtained afterwards by a public company. Unfortunately for the present holders, it appears that all the rich patches have been worked out. It is hoped, however, that by continuing prospecting something of a permanent and payable character may be discovered. 206 tons of ore was treated, for a yield of 351 oz., valued at £827. An average of six men were employed.

Victoria Mine.—Prospecting-work has been carried on during the year at No. 2 level (145 ft.), No. 3 level (243 ft.), and No. 4 level (332 ft.) on various lodes in the way of driving, rising, sinking, and stoping, and from time to time gold was won from the ore broken, but nothing of a payable character was discovered. 73 loads of ore and 138 lb. of picked stone yielded 270 oz., valued at £759.

Thames Gold-mining Company (Limited).—The principal work for the past year has been driving a crosscut from the Moanataiari main tunnel into the Nonpareil section. When a distance of 730 ft. had been reached, a small leader of quartz was cut through and driven on without favourable results. The main crosscut is being extended, with a view to intersecting other bodies known to traverse the Nonpareil section. 32 tons of ore was treated, for 48 oz., valued at £129.

New Saxon Mine.—Work for the year chiefly consisted of prospecting. A considerable amount of labour has also been expended on improving the ventilation, which was faulty in the early part of the year. The company do not contemplate any scheme of development above the present water-

level, but are confining their attention to sinking winzes under the No. 4 level (520 ft.), on the Cardigan No. 1 reef. The company treated 101 tons of ore from the mine, for a yield of 53 oz., valued at £154. An average of six men were employed.

New May Queen Mine.—Mining operations have been confined to Nos. 5 and 6 levels. At No. 5 level (627 ft. from the collar of the shaft) a crosscut to cut the St. Hippo lode was extended 300 ft., making a total distance of about 600 ft. At that point a lode was met with and driven on for over 100 ft. on each side of the crosscut. The lode varied from 3 ft. to 10 ft. in width, but so far the values are unpayable. It is hoped that further exploration of the lode will disclose better results. Blocks of ground on the No. 4 and North-west lodes have been stoped out to the No. 4 level (500 ft.), with favourable results. In the foot-wall of No. 4 lode a small leader, 3 in. wide, has been driven on, the quartz showing gold freely, and some picked stone was secured. A winze is being sunk on the leader. The work at No. 6 level (720 ft.) is principally stoping on the North-west and No. 4 lodes, from which some payable ore was treated. A winze had been sunk on the No. 4 lode below the No. 6 level to a depth of 52 ft., when water came in, causing sinking to be stopped. Throughout the whole distance sunk the ore has been good, and frequently picked stone was secured. A crosscut is now being driven from the Queen of Beauty shaft, No. 11 level (800 ft.), for the purpose of draining the winze. When completed, the crosscut will give a block of 100 ft. to the floor of the No. 6 level (May Queen shaft) on the No. 4 and North-west lodes. The lode is expected to be cut at a distance of 350 ft. A start has been made from the No. 11 level, in the Queen of Beauty shaft, to drive south on the No. 2 reef, and good results are anticipated. In the face of the drive the ore is 18 in. wide. During the year 2,692 tons of ore and 320 lb. of picked stone was treated, for a yield of 1,315 oz., valued at £3,770. An average of thirty-two men were employed.

New Una Mine.—Five men have been employed driving a new low level to cut the Duke and other reefs which traverse the property, and yielded rich values in the higher levels. 400 ft. has been driven for the year, making the level 557 ft. in length. At this point the Duke lode was cut into, and proved to be 18 in. wide, but of low grade.

New Dart Mine.—In the early part of the year eight men were employed prospecting in the adit-level section and in the No. 2 level shaft section. A considerable amount of driving was done on the reef from time to time by former companies. The present holders intend testing samples obtained from this reef, and also samples from large blocks of ore in sight. 90 tons of ore was treated, for a yield of 76 oz., valued at £212.

Fortuna Extended (New Dart Company).—Two men have been employed prospecting, but nothing of importance has been discovered.

Occidental Mine.—The company holding this mine have been devoting a greater portion of the time to prospecting, with the object of picking up some of the reefs which were profitably worked some time ago. Two men were employed, and good progress is being made with the work.

Lord Nelson and North Star.—Work consisted chiefly of prospecting the outcrops of several reefs in the claim, from which ore was treated, yielding 88 oz., valued at £232. The undertaking has been most remunerative, and warrants a more systematic method of mining. An average of two men were employed.

Reliance Mine.—A drive was put in from the side of the hill cutting No. 2 reef, which was driven on for some distance. A winze was then sunk on the reef to a depth of 78 ft. A portion of the lode was stoped out, but results showed it to be of low grade. 67 loads were treated for a yield of 77 oz., valued at £209. Four men were employed.

Claremont Claim.—In the early part of the year a contract for 50 ft., more or less, was let, but apart from this very little work has been done on the mine. The returns, however, are well maintained, 2 cwt. of picked stone yielding 321 oz., valued at £861.

Arrindell Claim.—Practically no work has been done during the year, as the property has been under protection for a considerable portion of the period pending the reconstruction of the company. A new company of the same name has now been registered in Glasgow, and it anticipates being in a position to recommence mining operations within the next few months. It is proposed to substitute water-power in the place of steam-power for driving the battery, and this work will be undertaken at once. Six men were employed.

Ballarat Claim.—This claim has been continuously worked by Mr. Britt for a number of years. Two men were employed, and 3 tons of general dirt was treated for a return of 65 oz., valued at £177.

Golden Drop Claim.—A considerable amount of driving, rising, and stoping has been done on a small leader, from which 4 tons of ore were treated, and gave a value of £22. The undertaking has been unprofitable all along, but the owner is hopeful of discovering something better.

Day Dawn and Norfolk Mines.—A rise has been constructed from the adit level on the Sunbeam rise for 150 ft., from which height an intermediate level was driven for 114 ft. west on the reef. At that point a crosscut is being driven to connect a winze sunk from No. 2 level, from which good ore was obtained. When the connection is made there will be a large block of ore to operate on. In the Charter section stoping was done on the Dunedin reef, and the ore won was of good value; but through the lack of systematic connection with the adit level, operations were suspended until a connection was made. In the adit-level section the No. 2 level was in a bad state, and is closed off for repairs. 600 tons of ore were treated, for a yield of 196 oz., valued at £538. Ten men were employed.

Waitangi Mine.—The principal work carried on during the year has been the extension of the low-level tunnel for the purpose of intersecting and prospecting the Waitangi main reef at a depth of 130 ft. below the No. 2 level (100 ft.). This reef has been cut through at two points 100 ft. apart, and varies in width from 25 ft. to 35 ft. The hanging-wall portion has been driven upon east of the

main crosscut a distance of 160 ft. An average width of 3 ft. of quartz was taken with the drive. The prospects met with are encouraging. In driving the low-level crosscut, before intersecting the main reef, the Siam reef and several leaders were cut. The Siam reef was driven upon 40 ft. east and 80 ft. west of the crosscut. It averaged 2 ft. in width, but did not produce any payable ore. No. 1 leader, which is a cross-leader running between the Siam and main reefs, was driven upon 60 ft., and a block 40 ft. in length and 20 ft. in height stoped out. The low level is now in 850 ft. from the surface, and is ventilated by means of a suction water-blast. At No. 2 level (100 ft.) 60 ft. of driving and 28 ft. of crosscutting was done upon the main reef, portions of which are said to contain good values. A level 100 ft. above No. 2 level was driven from the surface a distance of 190 ft., and the main reef, where cut through, proved to be 8 ft. wide. The ore was of low grade, and no further work was done in this part. Twenty-five loads of quartz and 147 lb. of picked stone were treated, giving a return of 147 oz., valued at £500. An average of eight men were employed.

Sylvia Mine.—Six men were employed driving the low level to cut the Sylvia reef, from which rich ore was obtained in the upper levels. A winze was sunk on the reef, and encouraging prospects were met with. It is intended that the low level should intersect the lode under the winze, and at the time of my visit a further distance of 400 ft. had to be driven.

Watchman.—This claim is held by a newly formed company, who have started a low level to intersect the reef system of the Alburnia. Encouragement has been given the company, who consider the prospects bright. Four men were employed.

Magnet.—During the year the main level has been driven some distance and hard country entered, which has somewhat hindered rapid progress. Work was stopped for a time, and towards the end of the year prospecting was done on the reef in the upper level, but nothing important was disclosed. Four men were employed.

Temple Bar.—Four men were employed driving a low level on a reef averaging 6 in. wide. The ore broken out has not given satisfactory results. A distance of 350 ft. was driven before cutting the reef, and 130 ft. on the course of the lode. Good returns are said to have been obtained by a former company, and the present company intend connecting with the old workings to try and pick up a run of good ore.

Miners' Right Claim.—The work principally consisted of driving on several quartz veins near the surface, but nothing of a permanent character was discovered. The ore treated was very remunerative, and the owner believes the prospects to be very encouraging. 100 tons of quartz was treated, for a yield of 381 oz., valued at £816. Five men were employed.

Omahu Mine.—The company holding this property in 1906 was unable to treat the ore broken out at a profit, and failed to discover anything likely to give payable results. Consequently the mine was closed down, and in the early part of the following year a new company was formed for the purpose of developing the property. Favourable prospects were met with, and a new reef was discovered, which gave good results. 78 tons was treated, for a value of £299.

Mahara Royal.—This mine has been under protection throughout the year, to enable the company to raise further working capital.

Southern Queen.—Six men were employed in general development-work and stoping on the Blue reef. Several small leaders in the hanging-wall were cut, from which 51 tons were obtained and treated, for a value of £177. Work was carried out satisfactorily.

West Coast Claim.—This claim is worked by one man, who has met with very little encouragement. From the surface outcrops of a reef 8 tons of ore were treated, for a yield of 5 oz., valued at £12.

Highlander Claim.—The party working this claim has met with exceptionally good results, having treated 1 cwt. 4 lb., for a value of £146.

Trafalgar Mine.—Two men were employed in prospecting-work, and have unearthed some payable ore, which gave a value of £6.

Vanguard Mine.—This mine, which was closed down in the latter part of 1906, has been under protection ever since. The water not having abated sufficiently to allow of any work being done, the company have to wait until a favourable opportunity for continuing operations arrives.

Summer Hill Claim.—The owners have been carrying on prospecting-work, without meeting with encouraging results. 1 ton of ore was treated, for a value of £1 3s.

Daisy Claim.—Two men were employed prospecting on the various quartz leaders, meeting with very little success, although the small quantity of ore treated was of a highly payable character, 2 tons giving a value of £80 5s. 6d.

Moanataiari Extended.—Extensive development-work has been carried out at the lower level, and it was expected that payable ore would be met with when driving on the reef was continued under the place where good ore was obtained in the upper level. The prospects were not encouraging at this point, and the values were disappointing. The company then applied for protection for six months, in order to raise more capital for future development-work.

Magnet Mine.—Four men have been employed extending the low level. The country rock passed through has been hard, has rendered progress very slow, and is unfavourable to the finding of reefs carrying good values.

Mascotte Mine.—Early in the year six men were employed constructing a chamber in the shaft for the 100 ft. level, with the intention of driving to thoroughly prospect the claim. The country rock is of a good class, and is comparatively free from water, so that rapid progress should be made.

Halcyon.—Work has been confined to the extension of the low level on the reef to connect with a winze sunk from the surface. It was found that driving had been done on a wrong leader, and a crosscut was then driven to connect with the reef on which the winze is sunk. This work has improved the ventilation, and will greatly assist future development. Two men were employed.

May Queen Extended.—Early in the year work was confined to driving on a leader westward at the No. 1 level, below the main adit level. The leader looked most encouraging, but nothing of value was met with. A rise was constructed on a leader carrying payable ore, and when completed gave increased facilities for working the block of ground, from which 23 tons was treated, for a value of £106. The ventilation was fair, and the mine in good order. A new drive was put in later in the year, with a view to opening up a block of ground which had not been previously prospected. and good progress is being made. An average of seven men were employed

COROMANDEL.

Old Hauraki.—The company holding this mine have amalgamated with the new Bunker's Hill Company, and a start was made in October last to unwater the properties, Mr. A. Jamieson, who for many years had control of the Old Hauraki Mine, under Captain Hodge's supervision, being intrusted with the management. The unwatering was accomplished towards the end of the year, and the levels down to No. 5 (400 ft.) were cleaned up. The new company propose carrying on vigorous prospecting operations at the lower levels, especially in the Iona section, north-east of the Hauraki shaft. It is believed that the reefs below 175 ft. level are intact, and it is proposed to connect with the 400 ft. level, Hauraki section. The Bunker's Hill and Palmerston sections will be prospected from the Hauraki low levels, and the reefs thoroughly tested, which, in my opinion, is the proper course to adopt. In the meantime the company intend to work some small blocks of ore in the upper levels, in the vicinity of Legs reef, from which splendid returns were obtained, to the extent of £250,000. Unfortunately this ore-body lost its values at the lower levels and broke up into several poor veins. For the year, 10 tons of ore was treated, for a yield of 66 oz., valued at £182 9s. An average of eighteen men were employed.

Old Kapanga Mine.—This is the oldest mine in the district, and has given employment to a considerable number of men for many years. The shaft has attained a depth of 1,000 ft., and some rich ore has been found. Diamond drills were used to test the reefs at a depth of 1,200 ft., and the cores are said to have given good results at that depth. The old company having abandoned the property, a new company was formed, and the mine unwatered to the 300 ft. level, when a large influx of water made it necessary to discontinue operations. At present the work is done by tributers, who are in the upper levels. 50 tons of ore was treated, for a yield of 100 oz., valued at £300. An average of seven men were employed.

Golden Pah Mine.—Tributers only are working on this property, but unfortunately they have not encountered ore of a payable character. The company still hold the ground, but, judging from appearances, they do not intend working it at present. The pumping and winding machinery has been sold, and removed to another mine in the district. Two men were employed during the year.

Success Mine.—Some years ago Mr. James, present owner, opened up the mine, and got very encouraging results from a leader on the western side of the Tokatea Range; then, under Captain Hodge's supervision, a great amount of prospecting was done, but without meeting with good prospects. The property has been returned to Mr. James, who has employed two men in the upper levels prospecting in the vicinity of the golden leader, from which rich gold was obtained by him. So far, nothing of importance has been discovered.

Hauraki Freeholds.—During the year twelve men were employed in the surface blocks on tribute. Towards the end of the year the company started to unwater the shaft mine-workings, and at first good progress was made. Latterly, however, the work has been greatly hindered by a series of accidents to the machinery, until the funds grew so low that work had to be abandoned, allowing the water to rise again in the shaft. The drainage of the Old Hauraki and associated mines may materially help the Hauraki Freeholds Company to drain their property.

Monte Christo Claim.—This claim is owned and worked by Mr. Magnus Kemner. The property is situated on the eastern side of the Tokatea Range, adjacent to the Royal Oak Mine. The work carried on for the year has chiefly consisted of extending the low level to cut the Day Dawn reef, which was afterwards found to contain low-grade ore. Mr. Kemner works alone in the mine, consequently slow progress is made, but he receives prospecting aid from the Mines Department. Several small parties of men have sections of the claim on tribute, but nothing of consequence has been found.

Royal Oak Mine.—Sixteen men, principally on tribute, have been at work in the mine and on the old tip-heads, from which 54 tons of ore was treated, for a yield of 1,028 oz., valued at £2,567. I am of opinion that mining companies should be required to develop their properties, instead of, as in this instance, depending on the royalty reaped from tributers. This company holds a great advantage over others in the respect that the mine is unwatered free, but no development-work has been done for some time past, and one can hardly say that the course adopted by the company is mining, or in the interests of mining.

Four-in-Hand Mine.—Four men have been employed on the eastern section of the property. A considerable amount of work has been done in opening up the mine. The reef has been cut and worked on in rising, sinking, and stoping in the several levels opened. Work has been confined to No. 4 level, from which 11 cwt. of specimen stone was treated, for a value of £368 16s. 6d.

South Kapanga Mine.—This mine is situated on a portion of the Scotty's Claim. An adit was driven some distance before intersecting the Scotty reef. Near the point of intersection and on the surface outcrop of the reef rich specimen stone was obtained by prospectors in the early days of the field; and later, from the same reef, at a depth of 300 ft. in the Scotty's shaft, under Captain Hodge's supervision, several thousands of pounds' worth of gold was won. It is unfortunate for the company that the reef has not been found to carry good ore, and, although some hundreds of feet have been driven on the reef, nothing of good value has been discovered. The mine was inspected on several occasions, and found in good order.

Prospecting.—Prospecting parties have been conducting operations in several parts of the district. A syndicate for some time past has been at work near Kennedy Bay, and at Driving Creek three parties have done a considerable amount of work. Several parties receiving aid from the Mines Department are on the Tokatea Range, and have carried out useful work, but nothing of importance or even of an encouraging nature has been discovered to give an impetus to the industry in Coromandel. The Big Blow Prospecting Syndicate has ceased operations, the ore proving to be of very low grade, and impossible to treat with a margin of profi .

KUAOTUNU.

Waiataia Mine.—Two men have been employed throughout the year, keeping the mine open and in repairs. Some time back the mine was closed down and protection granted, to enable the company to raise sufficient capital to put in a new low level, the ore in the upper level having become exhausted. The values of the ore in the floor of the present drive are said to be good, and that the construction of a lower level (water-free) would result in thousands of tons of ore of good quality being mined. A great quantity of ore has been won from the different mines in this district, and it is surprising that no steps are being taken to test the ores at a greater depth, when it is positively known that in some of the other mines the ore-bodies have been proved to improve in value and increase in width with the increase in depth. When some comprehensive scheme is entered into, and conducted in a systematic manner, the consequence may be a revelation to many who held back from the idea of deep levels, instead of coming forward and helping to restore mining activity.

Handsworth Mine.—An adit level has been driven for some considerable distance, and a fair amount of success met with. Assistance was granted by the Mines Department to enable the owners to continue the drive and prove the value of the lode.

Great Mercury Mine.—The owners have for some time been prospecting, and at considerable cost put in a long low level, with the object of testing the ore-values. A considerable amount of driving has been done, but the values were in every case disappointing, and, so far, nothing of an encouraging character has been discovered, although the reef has been prospected in length, height, and width.

Otama Mine.—Some considerable amount of prospecting was done on the lode, but the ore proving unpayable, the mine was abandoned. This course must have been very disagreeable to the owner. In the event of discovering payable ore, the cost of treatment would not have been much per ton, as the mine was in the neighbourhood of a public battery.

GREAT BARRIER ISLAND.

Barrier Reefs Mine.—The owners of this property have done a considerable amount of work, meeting with varying results. Rich ore was struck, and the company was induced to erect a battery. A few thousand tons of ore was treated, but for some reason or other the full values were not extracted in the first handling. Last year a great quantity of tailings was treated by cyanide and gave high values, but throughout the whole of this year the plant has been idle. Work was mainly of a prospecting character. A crosscut about 700 ft. in length has been driven, with a view to discovering other ore-bodies. So far nothing of importance has been seen. Four men were employed for the year.

Sunbeam Mine.—The mine has been well developed, and the reef worked on by driving, rising, and stoping. 400 tons of ore was treated, for a yield of 923 oz. (mostly silver), valued at £646 9s. 5d. Three men were employed.

Ngatiawa Mine.—The company holds other claims besides this property—namely, Eliza, Aroha, and Huia—all of which have been well prospected, but I am not aware whether any ore-bodies of good values have been met with. Ten men were employed for the year.

MINERALS OTHER THAN GOLD.

Copper.

Ferguson's Syndicate (Limited).—Work for the year has been chiefly of a prospecting character. A prospecting-shaft was sunk to a depth of about 30 ft., and two adit levels were driven to connect with the shaft and to prove the width of the reef. In Knight's section a considerable amount of drifting has been done on the course of the lode. Communication has yet to be effected with the harbour before the ore can be shipped to Waiomo for treatment at the syndicate's smelting-works. Six men were employed.

The Hare-Ratjen Mine.—At the time of my visit the mine was closed down, but I am informed that negotiations were proceeding with a syndicate to take over the mine and further develop the ore encountered in the main tunnel.

The Northern Copper Company's Mines.—These mines are adjacent to the Ferguson Syndicate Mine. Several prospecting-drives have been driven. At No. 2 level an ore-body was intersected, the formation being about 60 ft. wide, and showing some fine copper-ore. At No. 3 level an ore-body 30 ft. wide was cut through, and the values are said to be good. A winze was sunk on the lode to a depth of 70 ft., and a shaft is also being sunk on the hanging-wall of the ore-body, with a view to working the property in a systematic manner. The roads leading to the company's property are not yet formed, nor are the creeks bridged, which means great difficulty is being experienced in the way of getting supplies and machinery on to the mine. Eight men were employed.

Maharahara Mine.—This mine is owned by an Auckland syndicate, who have spent close on £2,000 on opening up the adit level and extending it for some distance. At the point where the ore-body was cut through the lode is 32 ft. wide, and shows some fine copper-ore. In the early part of the year six men were employed, but this number has since been reduced to two men, owing to the fall in the price of copper and the company's lack of capital. The Mines Department has granted assistance towards the construction of a road to the mine.

Antimony.

Antimony Lode.—For some time a small syndicate known as Lanigan's syndicate has been prospecting for antimony near Russell, meeting with good samples of ore occasionally. Towards the end of the year it was reported that a rich ore-body had been discovered, but owing to the low price offered for antimony the mine was closed down. Two men were employed.

There is also an antimony lode at Puhipuhi, on which a considerable amount of prospecting has been done by two men employed by Mr. Holder, of Auckland. The ore was found to be of low grade, and the mine was closed down. Two men were employed.

Cinnabar.

About two miles distant from the antimony lode at Puhipuhi is a cinnabar claim, also owned by Mr. Holder. A tunnel has been driven a total distance of 200 ft. to cut the lode, which was showing on the surface. I have not heard what the values were in the drive. Two men were employed.

I have, &c.,
BOYD BENNIE,
Inspector of Mines.

Mr. ROBERT TENNENT, Inspector of Mines, Westport, to the Under-Secretary, Mines Department, Wellington.

SIR,— Inspector of Mines Office, Westport, 27th March, 1908.

I have the honour to report as follows on the gold-mines in the Marlborough, Nelson, and Westland districts, for the year ended 31st December, 1907:—

QUARTZ-MINING.

BLENHEIM.

Wairau Valley Gold-mining Company, Limited (Thomas Wearne, mine-manager).—On the section of this property known as the Nelson drive four men are employed in developing the reef by sinking a winze to a depth of 50 ft. and driving an intermediate, whilst six men find employment in driving east and stoping on the low level of the little reef. All works are securely timbered and well ventilated. At the battery and cyanide works crushing and ore-treatment was suspended owing to shortage of water, occasioned by the excessive dry weather.

Mahikipawa.—Mr. A. Steadman, with three men employed, has reopened the low level of the old Kaipai Quartz-mine, and, provided development warrants the expenditure, a three-stamp mill will be erected.

Mount Patriarch (McGrath and party's prospecting-area).—Accompanied by P. Slattery, the Assistant Inspector examined the surface workings, where an outcrop of quartz was exposed by trenching. To prove the reef at depth, a winze was sunk 45 ft., on an average width of 4 ft. Crosscutting was also extended for 145 ft., when the lode was intersected in a slightly disturbed condition. However, after driving was further extended a few feet, the regular underlay was attained. Sufficient work has not been done to determine values, and the continuance of the reef into the high range, and the drive should be directed in a more southerly course on line of lode. Also, a low level is required about 60 ft. below the present crosscut, or on the level of the proposed battery hopper. Meanwhile, prospecting is not sufficient to warrant the erection of any quartz-crushing machinery. Should payable gold be found, there are many miles of practically virgin ground.

Mount Patriarch (Tapp's prospecting-area).—Two men are employed. McGrath (in charge) is driving a crosscut to intersect an outcrop said to carry payable gold. All works well secured.

HAVELOCK.

Golden Bar and Federated Yorkshire.—Three men have been employed in clearing the old drives and other preliminary work, but when visited at the beginning of the current year the men were fossicking in the bed of the river.

COLLINGWOOD.

Upper Anatoki.—Under the Takaka Miners' Association, prospecting has made satisfactory progress during last year, and, as the gold found in the streams and terraces is largely associated with particles of coarse quartz, it may be feasible to expect that auriferous quartz in payable quantity will eventually be opened up. In the matter of finance and labour the association is well managed, each member being alike interested to see that the money subscribed is profitably expended.

Golden Ridge (Taitapu Gold Estates; James Carroll, mine-manager).—Development has been confined to the Sandhill section, in which a tunnel has been driven in hard quartzite for a distance of 420 ft. (adit). This rock has now given place to a black slate, which is more favourable, and affords better facilities for driving. Ventilation is well maintained by fan, driven by breast water-wheel. All work is suspended on the Ant Hill or Golden Ridge section. Diamond drilling for coal and other minerals is also suspended, at a total depth of 640 ft.

Golden Blocks, Taitapu (C. Y. Fell, attorney, Nelson).—Mining continues to be directed chiefly in extending and stoping on No. 2 intermediate and Nos. 2 and 3 low levels. The total drivings aggregate 750 ft.; rising, 880 ft.; and the area stoped, 5,229 square feet. The tonnage milled (1,700 tons) yielded 1,463 oz. 18 dwt., valued at £5,865 1s. 11d.—value per ounce, £4 1s. 3d.—thus showing an increase in values of £187 0s. 6d. As usual, the lode continues patchy, and an underlay of 35° westerly

is maintained underfoot on No. 3 level. Prospecting has been further extended to within 1 chain of the old boundary of the No. 4 Taitapu Block, but so far values are not important. However, hope is entertained that a strike of payable quartz may live down, as rich stone is known to exist below No. 3. Bush-fires have lately been a formidable enemy, and, although the efforts of all the mining staff were fully engaged in fighting the fires for several days and nights, the works have suffered considerable damage.

Westport.

Red Queen, Mokihinui (owner, A. W. Mills, Westport).—As mentioned in my previous report, a rich pocket of ore was discovered near the western boundary of the lease. This ore was driven on for a distance of 112 ft., with the result that values did not warrant prospecting to be further continued. The tributers are now engaged in the old levels. Ore crushed during the year amounted to 140 tons, yielding 124 oz. 16 dwt., valued at £490 5s. 3d.

Britannia Mine.—During the early part of the year prospecting was directed to the north-eastern section of the lease, where an outcrop was exposed, from which 48 tons of ore yielded 10 dwt. per ton by amalgamation; but as driving extended into the hill the lode widened, and values decreased. No. 7 was driven to get sufficient gold to assist in prospecting the lower levels. Also, a branch drive was driven 100 ft. from No. 6, to prove if the run of gold is intersected by the dyke, or lives into the hill country. So far, the existence of gold into the hill has not been proved. In the Early Bird section several drifts have been extended, with fruitless results.

Lyell.

New Alpine Gold-mining Company (R. A. Stewart, mine-manager).—Since the present company reopened this property, the No. 7 level (adit) was further extended to pick up a rich lead, which in the first workings had been profitably worked. Also, a winze was sunk to a depth of 80 ft., where the reef split into three separate veins. This level face is now standing, and stoping commenced about 400 ft. from the face on a thin low-grade leader, about 8 in. thick. While stoping this leader a patch of gold was found on the casing of the lode, which yielded 5 oz. from 20 lb. of slate. Unhappily, further recurrence of this find has not since been reported. On No. 10 level (adit), 3,500 ft. below the surface-level, the chamber over the vertical shaft was thoroughly retimbered and put in good repair before reopening the deeper levels. On No. 12 level winze-sinking was continued north and south to depths varying from 40 ft. to 50 ft., while on the north level the ore is broken and irregular. The south winze was sunk on fair stone from 2 ft. to 3 ft. in width to a depth of 50 ft., at which level driving will be commenced early, and the ore will be hoisted by an air-driven winch, now in course of erection. Repairs were effected to battery, cyanide, and general surface equipments preparatory to crushing at the beginning of the current year.

Boatman's.

Welcome.—This mine, formerly owned by the Consolidated Goldfields of New Zealand (Limited), has been surrendered. During the year a local party did some prospecting, but so far results are not reported.

Specimen Hill (Howell and Kennedy's subsidised tunnel).—Further payment has not been made on work done during the year.

Buller United.—Since the property was last visited, the owners have driven a crosscut from the original working, intersecting a reef of 2 ft. in thickness.

New Caledonian Gold-mining Company (Limited).—This subsidised shaft, 10 ft. by 4 ft., has been sunk to a finished depth of 101 ft., at a contract price of £4 per foot, added to which are wages for two engine-drivers at £3 10s. per week so long as the present inflow of water exists. Sinking is effected through hard slate, intermixed with quartz veins, the finished dimensions being divided into two winding and one ladderway compartments. The average quantity of water is computed at 400 gallons per hour, baled by a 40-gallon tank. The estimated depth to the lode is 250 ft. Steam-driven winding-engines were recently installed.

Reefton.

Wealth of Nations.—During the year the quartz required for milling was almost exclusively taken from Nos. 7 and 8 stopes, on the main line of reef, together with a small tonnage obtained from the smaller foot-wall reef (on both of these levels), besides which a small parcel was stoped on Nos. 9 and 10 levels. At the commencement of the year a chamber was cut on No. 10 level, and shortly afterwards the crosscut was extended to the position determined to cut the reef. When the reef was encountered, this level was developed in the usual manner with two rise-connections efficient for ventilation and the passing of ore from the stopes. Development was further extended on No. 6 level by crosscutting the foot-wall, with the object of intersecting the smaller foot-wall reef. On No. 7 level this foot-wall reef was sunk on for about half the distance towards the lower level. On No. 8 level a crosscut from the main line of reef was put through successfully, with the object of intersecting the same reef. When encountered, the reef was driven on to its limit both north and south, and a connection with the winze from No. 7 level completed. By this means a valuable block of ore of somewhat irregular and narrow dimensions was opened, from which a good tonnage of high-grade ore is expected, as it is the intention to locate the same body of stone on No. 9, providing it exists. Attempts have been made to locate the same ore-body on No. 6 level, but the crosscut only succeeded in locating a boulder, which was not thought to be connected with the stone looked for. On No. 7 level a considerable quantity of crosscutting was done in the hanging-wall in search of the old Energetic Block,

which was worked largely and with great profit in the early days. Some favourable country was located, and a little driving done on the supposed track, which, although not proving the existence of the old body, is sufficiently encouraging to warrant more prospecting at this point when filling is wanted for the lower stopes. The battery crushed 13,690 tons, yielding, by amalgamation and cyanide, 6,450 oz. 5 dwt. of bullion, valued at £24,535 13s. 11d.

Golden Fleece Mine.—Development-work for the year consisted of driving No. 14 level to the furthest known limit of the ore-body, which has not opened up very satisfactorily, and the stopes above showed little or no improvement. Thereby the tonnage of quartz opened by No. 14 level was considerably reduced. Near the close of the year a contract was let to sink the incline shaft a distance of 170 ft., which was completed before the Christmas holidays commenced. The work proposed for 1908 consists of cutting the ore-bins on the new level (No. 15—depth below battery-level, 520 ft.), then driving with the object of intersecting the ore-body. The battery crushed 11,991 tons, yielding, by amalgmation and cyanide, 5,160 oz. 14 dwt. 4 gr., valued at £19,934 17s.

Progress Mine.—Development-work has been steadily maintained, and was successful in opening up profitable ore-bodies both on Nos. 9 and 11 levels (depth, 1,450 ft.). In all, 1,424 ft. of driving and crosscutting was effected, and 537 ft. of raising and sinking, while prospecting by diamond drill was also continued, and during the year 1,424 ft. was drilled. The most important discovery resulting from the year's work was the quartz body located on No. 11, approximately 140 ft. in length, but exact width is not yet determined, owing to the flatness of the vein, which is practically parallel to the ore-body opened during 1906, and from which it is located at an approximate vertical distance of 140 ft. Both these ore-bodies are lying on very flat benches, and dip towards one another. From the recent discovery, no raise or other connection has yet been started, as the relative position of this ore-body with the one overlying has not yet been defined. During development on No. 11 level a large tonnage of high-grade quartz was obtained from this block, and with regard to its general importance there can be no doubt. By extending the main drive, and crosscutting from No. 9 level, a block of stone was successfully opened, which was formerly developed from No. 2 down to No. 8 levels. This block is approximately 130 ft. in length, but the width is not known, for whilst development-work was in progress attempt was not made to carry the full width of the lode in the first driving. A raise has recently been started on this block, to connect with the upper level. Stoping has been carried on in a very general manner, and some of the large blocks in the upper portion of the mine have become exhausted. Roughly speaking, all the quartz below No. 5 level has been taken out and milled. Ventilation has been largely assisted by the application of a steam jet in the upcast shaft. To install mechanical ventilation at this mine a 40-in.-diameter double-inlet Sirocco fan is under order, and preparatory work towards the installation is being actively pushed. Power will be applied by electrical motor. During the year the sixty-five-stamp battery crushed 55,305 tons, yielding 22,825 oz. 7 dwt. bullion by amalgamation and cyanide, valued at £87,805 8s. 3d.

Keep-it-Dark (owners, Keep-it-Dark Quartz-mining Company, Limited); Benjamin Sutherland, mine-manager).—The general equipment relative to mining and reduction of ore is not important; while mine-development, although somewhat varied, has failed to expose values worthy of special comment. Values show a decrease of £3,091 16s. 10d., and ore milled an increase of 141 tons, as against the previous year. Workings are maintained in good order. The connections necessary to maintain ventilation, the passing of ore, and filling in the stopes have received strict attention. Ore milled was stoped from the 180 ft. block on No. 5 level (depth, 700 ft.), and from Nos. 6 and 7 levels (greatest depth, 1,000 ft.). This ore-body is strikingly erratic and disjointed in position, and assumes a decided throw in the underlay. Values also have been affected, and cost of mining and development much increased. Fortunately, this change of underlay has been accurately determined, and stone of average width and value has been driven on for 20 ft., while the values at depth are showing greater promise. Total footage in raising and crosscutting was 549 ft., besides extension of main levels. Cost of mining, including development, upkeep of plant and winding machinery, and general costs, amounted to £8,614 19s. 1d., or a little under 12s. 10d. per ton. With the exception of minor repairs, the battery has worked full time. Ore crushed, 13,441 tons, yielding by amalgamation, 2,811 oz. 16 dwt. 5 gr. bullion, valued at £11,266 17s. The working-cost was £1,407 6s. 2d., which amount includes all renewals to milling and concentrating plant, together with general repairs to head and tail races, absorbing 2s. 1d. per ton of ore crushed. Extraction by cyanide yielded 1,332 oz. 3 dwt. bullion, valued at £4,528 6s. 1d., or an average value of 6s. 9d. per ton of ore crushed. Including salary, labour, and all goods used, working-expenses amounted to £1,842 12s. 11d., or a rate of 2s. 9d. All plant in connection with the milling, concentrating, and cyaniding is in good order and repair.

Phœnix Syndicate.—The ore mined is taken from a small vein located in ground much disturbed, which requires careful timbering. Ventilation is well maintained by direct rise-connection with the surface, and the works kept in good repair. A five-stamp mill, driven by an 8-horse-power Tangye oil-engine, has been recently erected. In view of cutting off the present workings, it is proposed at an early date to drive a low-level tunnel into more solid ground.

Big River (J. H. McMahon, mine-manager).—As noted in previous report, the main shaft was sunk and completed to No. 9 level a further depth of 150 ft., making the total depth from the battery-level 1,150 ft. and from the brace 1,350 ft. During the year the chamber has been cut, and the lode intersected at the computed distance of 450 ft. The reef was driven on 50 ft., maintaining an average width of 12 ft., with satisfactory values. In comparing the dimensions of the ore-bodies now exhausted in the upper levels, the No. 9 block is considered the strongest and most pronounced ore-body yet encountered on the property, and evidences suggest that increased dimensions of lode will be further maintained at depth. Ventilation has been well maintained by a blower, actuated by water-power from No. 7 level. The cyanide plant formerly used at the Scotia Mine has been removed and re-erected

for permanent use. Plant and general equipment are in good order and condition. The quartz milled (685 tons) yielded, by amalgamation, 1,059 oz. 3 dwt. bullion, valued at £4,285 8s. 9d. Concentrates shipped to the smelter amounted to 15 tons 16 cwt. 1 qr. 16 lb., realising £400 4s. 6d.

Taffy.—Since the Curtis Bros. reopened this claim on more practical and improved methods of working, returns have maintained more favourable promise, both in quantity of ore treated and values obtained.

Golden Lead.—Messrs. Sweeney and Leggoe, on reopening this old mine in the beginning of the year, mined and bagged 18 tons of ore, which was crushed at the Big River Battery for a return of 24 oz. by amalgamation, valued at £96.

Golden Point (owner, G. Perotti, Greymouth).—As the result of a trial crushing of ore taken from this property, 100 tons yielded 18 oz. 13 dwt. 2 gr. by amalgamation, valued at £72 13s. 5d. Three men were employed.

Blackwater Mines (Limited).—At the close of the year 1906 preparations were made for sinking the main shaft, the substructure and collar set being then in position, and directly the boiler and engine were installed a contract was let to sink to a depth of 500 ft. Sinking was steadily maintained, and chambers left for Nos. 1, 2, and 3 levels, but the rate of progress not meeting anticipations, the management decided to cease sinking at No. 3 level (432 ft.) and excavate a sump of sufficient capacity (25 ft.); total depth, 457 ft. As soon as sinking ceased, the chambers on Nos. 2 and 3 levels were immediately finished, and a crosscut started. On No. 3 level the reef formation was encountered, and on No. 2 level the Joker tunnel was connected by a crosscut. While shaft-sinking, &c., was going on the Joker tunnel was also being extended, and when work ceased for Christmas the total length driven was 1,627 ft. Of this, the first 430 ft. was through alluvial drifts, and approximately 600 ft. of the balance was driven on the reef. Surface-works comprise considerable alterations and additions of importance, and things generally are beginning to assume a more permanent aspect. The permanent head gear erected and made of first-class timber is an excellent job, whilst the permanent hoisting-engine and boiler were at the end of the year in process of delivery and erection, and are now efficiently housed. Carpenter's and blacksmith's shops have been erected and equipped with the necessary labour-saving tools, including a lathe and drill-press. For the convenience of the workmen, a comfortable boardinghouse has been erected, together with a considerable number of huts and four-roomed cottages suitable for families. During the year a large amount of work was done to utilise the waters of Snowy Creek for power purposes, and by cutting a mile and a quarter of water-race on the south side of the creek an approximate vertical height of 120 ft. was obtained at the battery-site. No time was lost in carrying out this work, which was virtually finished at the end of the year, with the exception of a few detailed jobs, such as setting gates and boxes and a few chains of fluming. The route of the pipe-line from the penstock to the Pelton had also been graded, and some of the pipes delivered. The battery-site selected was covered with dense bush, which entailed considerable work in excavating for the ore-bins and retaining-walls, the latter, which were built in concrete, being work of a somewhat difficult nature, as, firstly, gravel was hard to get, and the varied handlings before it reached its destination must have entailed work of considerable delay. The power-house and the retaining-wall along the front of the mortar-box are completed in concrete. A sawmill is installed on the north bank of Snowy Creek, to cut timber for mining and building purposes at the battery.

Upper Blackwater (quartz-prospecting).—Craighead and party (95 acres) have two men employed driving a surface tunnel and trenching preparatory to sinking a shaft. Mr. Sidney Fry, of Westport, has an option over this area.

Bannan and Rea (100 acres) have two men trenching preparatory to driving a surface tunnel.

Sidney Fry (100 acres) has two men sinking on a small reef, which carries a little gold.

Upper Blackwater Miners' Association.—Of the subsidy of £200 granted to this association, payable at the rate of half-wages as against actual work performed, the third payment (£64) was made on the 14th March, 1907; total paid, £199. There is no fresh discovery worthy to be reported.

Brunner Prospecting Association.—Since previous report this tunnel has not been further extended.

Upper Grey Miners' Association.—Subsidy granted at the rate of £1 for £1 up to £150. £54 has been paid to prospect the head-waters of the Alexander River. Quartz found, but no defined reefs.

Westland.

Wilberforce Reefs.—According to information received from Mr. George Fallis, representative of the Kanieri Miners' Association, there were only three men on the field, doing some surface prospecting. Tunnelling and sinking were at a standstill.

Ross.—Osmers and party having pushed mine-development, and obtained sufficient water-power by clearing and extending an old water-race, prospects were considered sufficient to warrant the purchase and erection of a five-stamp mill. On a later visit the mill was erected and working satisfactorily, but as crushing had only been started a few hours, results were not obtainable. A grant of £50 was approved towards construction of the road, now completed.

Mount Greenland.—John Petrie has pegged off two areas of 90 acres each, under the titles of the Mikonui Quartz-mining Company and the Wellington Mount Greenland Gold-mining Company. Samuel McNair is in charge. Operations comprise the employment of four men clearing out some old tunnels in order to obtain a ton of ore as a trial crushing, and if values prove payable the erection of a ten-stamp mill is proposed.

General Remarks.

In reviewing the statistics of workings in quartz-mines, as furnished by the owners for the years 1906 and 1907, the ore milled for 1906 was 100,207 tons, yielding bullion to the amount of 43,952 oz. 5 dwt. 10 gr., valued at £169,928 19s. 11d., against 687 persons employed whilst for the year 1907

ore milled was 98,027 tons, yielding 41,717 oz. 1 dwt. 12 gr., valued at £160,532 17s. 9d., against 633 persons employed. For the year 1906 the average stone mined per person employed was 145·861 tons, and for 1907, 154·862 tons. Comparing the tonnage milled, yield of gold, and values, the following will show the relative decrease for the year 1907: Shortage in tonnage milled, 2,180 tons; in yield of bullion, 2,235 oz. 3 dwt. 22 gr.; in values, £9,396 2s. 2d., against a decrease of fifty-four persons employed. Dividends paid during 1906 amounted to £45,707 10s., and during 1907 to £39,175, the latter being a decrease of £6,532 10s. During the year 1907 there were one underground fatal accident and one surface accident, not serious.

HYDRAULIC AND ALLUVIAL MINING.

Mahikipawa.

Mahikipawa.—Several parties obtain satisfactory returns by sluicing the terraces when water is available, but owing to the excessive dry weather recently experienced, shortage of water necessitated all sluicing operations to be abandoned.

Wakamarina.—Now that the river is lower than at any period known to the oldest digger, some nice nuggets have been recently obtained by fossicking the crevices in the river-bed.

Takaka.

Takaka Hydraulic Sluicing Company.—Mining on this property continues to make active headway, but, although the head sources of the water-supply have been considered almost reliable, elevating had to be suspended during the excessive dry season, and operations restricted to surface sluicing in Patten's Gully. Workings and general equipment are kept in good order.

Collingwood.

Parapara Hydraulic Sluicing and Elevating Company (James Bassett, mine-manager).—Although the sluicing operations to free level on Appos Flat were somewhat hampered by shortness of water during the months of January and February, the yield of gold from the surface and upper auriferous gravels gave a satisfactory yield of 254 oz., closing on the 24th June. From this date the original proposition to elevate the deeper gravels was established, while it may be interesting to note that the yield by the elevating system was 733 oz., making a total of 987 oz. for the year. Now that a well-defined face of wash has been systematically developed, where the values of "the old creek-wash" overlying the white-quartz deposits give highly payable results at a surface depth of 30 ft., it may be anticipated that, with the efficient water-supply available, the future prospects of the company are well assured.

Quartz Ranges.—Until recently this property was held by Mr. C. Y. Fell, of Nelson. During Mr. Fell's term of tenure Mr. W. Diamond and party of four men have worked the property on tribute, which expires some time in February.

Slate River Sluicing Company.—Notwithstanding the large expenditure incurred towards the storage of water in the Toitoi Dam, together with the heavy work encountered to maintain efficient tail-race fall from the deeper deposits, the present developments fail to show a favourable position of affairs on behalf of the shareholder, as all work is now suspended for an indefinite period

Westport.

The German Creek and its tributaries afford no fresh developments, and mining may be said to remain in the hands of a few old-age pensioners, who rake a few pennyweights in the creek-beds and gullies.

Christmas Terrace.—The original promoters of this subsidised tunnel have, after a successful period of employment, lost the auriferous lead, and prior to abandonment carried out fruitless prospecting operations. After the surrender of the claim a miner named Docherty has been successful in picking up the lead, which so far driven on is promising.

Rochfort Terrace.—Whilst driving this subsidised tunnel the full authorised distance (1,500 ft.), several leads were intersected, but not considered payable. James, being determined to prove the Ruby lead further, has driven a duplicate tunnel 250 ft. This additional tunnel will assist ventilation and make a better roadway.

McKenzie's Creek, Fairdown.—James Gardiner, having recently reopened and extended an old abandoned tunnel on the eastern terrace bank of the McKenzie Creek, has been successful in intersecting the Ruby lead, so profitably worked in the adjoining terraces. The find is considered important, and likely to insure average wages for some time.

Giles Creek.—The Brothers Wilson, who are ground-sluicing on the eastern bank of this creek, find steady and lucrative employment.

Simes and Lines (three men).—This energetic party find lucrative employment by hydraulic sluicing the elevated terraces which form the western bank of the Giles Creek. During the year the Warden granted an additional six heads of water.

Waimangaroa River.—The elevated terraces which form the north and south banks of this river continue to maintain average wages by driving out and washing the gravels by very primitive methods. There are four parties thus employed.

McLellan, of Ngakawau, has taken up a river-bed area opposite the Waimangaroa Township, and installed a portable steam-engine, with the object of draining the actual bed of the creek by means of centrifugal pumps. When visited development had only attained a very elementary stage. This modern system of mining is likely to supersede dredging.

Royer and party (six men) have taken up a river-bed area located a short distance above the old Beaconsfield Mine, which they intend to drain by hydraulic power. Meanwhile water rights are not yet applied for, and other developments are not important. Two of the party were opening up an old tunnel, pending water rights.

Beaconsfield Quartz-mine.—Whilst passing this old abandoned property, attention was directed to the rotten and dilapidated condition of the woodwork in connection with water-race and head-gear of the winding-shaft. The ten-stamp mill and housing are still in good repair, although standing open and unprotected.

North Terrace, Mokihinui.—This subsidised tunnel was completed in the early part of the year, and its earning-power is set down at £2 per week.

Addison's.

St. John's Terrace (Brady and party—four men).—During the year considerable labour has been expended towards the removal and relaying of pipe-lines to reopen and develop fresh faces. Also, the low-level tail-race is being further extended 200 ft., to develop a western section of the property. Mining and general equipment are in good order, while the water-supply is now constant under all conditions of weather.

Carmody and Party (six men).—This energetic party continue to push their sluicing and elevating operations on systematic principles. Water-supply from the Totara River is steadily maintained, and operations are directed on a face fully 20 ft. in depth. Special care is taken to insure safety, while the elevating plant and general equipment are kept in good order.

Venture Claim.—Since work was suspended in mining and crushing the cemented auriferous sands, operations have been strictly directed to the alluvial section of the property, on which lucrative employment is maintained. The gravels vary in depth from 8 ft. to 10 ft., and carry payable gold throughout. Water is also plentiful, and with the loose sandy nature of the wash, treatment is much simplified.

Neil and Party (formerly Knight and party—five men).—This sluicing and elevating property, originally opened in 1870, has been worked continuously for thirty-five years, and, were it possible to compute the time required to exhaust the untouched workable areas on the same ratio, the existence of the claim would remain a problem. Taking the worked areas as a whole, the thickness of gravels has varied considerably; but, whilst confining my remarks to the face now operated on, depth of gravels varies from 15 ft. to 20 ft., thinning eastward with the gradual rise of the blue marine bottom in the direction of the Dirty Mary's Creek. Values also have varied, but, in taking a general average, lucrative employment has been maintained throughout the whole period worked.

Millikin and Party.—During the year sluicing operations were suspended, and work wholly directed to mining and crushing the cemented auriferous sands which overlie highly auriferous gravel deposits. Up to time of writing, milling has been confined to two shifts, but the owners anticipate commencing full time in a few days, as one eight-hour shift of three miners can keep the ten-stamp mill fully employed.

Charleston.

Powell's Sluicing and Elevating Claim.—Since the water-races and pipe-line installations (as mentioned in previous report) were completed, to work the north and south beaches as a joint concern, other developments, outside the ordinary sluicing and elevating operations, are not important. Speaking generally, plant and mining equipment applicable to the various works are well maintained in good order.

Shetland Beach.—This auriferous black-sand beach continues to afford employment to twenty beachcombers, with varied results; but during the late fine weather returns were less favourable, as the auriferous deposits depend much on the heavy surge arising from the south-west gales.

Lavery and mate are working a sluicing and elevating claim adjoining the Charleston Bay. The gravels resting on the blue marine bottom are easily elevated and distributed over a series of matted tables, from which fair returns are obtained.

Argyle Water-race.—The Argyle section of water-race supplied from the dam to operate direct on the site of mining operations has an approximate length of two miles, and from the penstock the pressure due to a vertical fall of 170 ft. is maintained on the nozzle. This section of race was recently overhauled and the dam strengthened, but under the conditions which have existed during the last six years conservation is practically dependent on its own watershed, which, in dry weather, is very limited. Leading from the dam, the first mile is now in good repair, and the tunnel, 45 chains in length, cleared and securely timbered, thus leaving two miles to complete and join the upper section of the race, now utilised for power purposes by the Four-mile Sawmilling Company. On the application by the County Council for a further subsidy of £200 to complete the work throughout, the Hon. the Minister of Mines has given his approval, and the work is now proceeding satisfactorily.

Murchison.

The Walker Maruia Gold-sluicing Company (C. S. Beilby, mine-manager); M. M. Webster, secretary, Nelson).—In previous report mention was made that the various works in connection with the development of this extensive sluicing proposition were completed in the beginning of the year 1907, and the water turned on. Since then sluicing operations were continued for some time, pending the arrival and erection of an improved hydraulic winch specially designed for the removal of large boulders which occur frequently in the wash-dirt. The yield of gold for the year was 97 oz. 1 dwt., valued at £362 11s. 11d.

Horse Terrace Sluicing Company.—The mining privileges owned by Messrs. Beilby, Richardson, and McNee were recently amalgamated, and are now worked as one concern, Mr. Richardson taking full control of all operations, which give employment to eight men.

Old Kent Road Sluicing Company (late New Lyell Sluicing Company).—This claim is now owned and worked by George Walsh and two wages-men. The works are in good order, but, so far, the results from recent operations are not known.

Newton Flat Hydraulic Syndicate have recently purchased all the mining privileges, plant, &c., recently held by the Newton Flat Hydraulic Sluicing Company. Operations are under the charge of W. Neal, who gives employment to six men. The varied works, including water-races, pipe-lines, &c., are in good order and repair.

Blue Duck Creek.—Sydney Welch and mate, having had a successful season of lucrative employment by sluicing the upper layers of the auriferous deposits, recently determined to develop the deeper wash, and work the whole thickness in one continuous face. This is now well advanced, and, with the efficient water-supply available, the party hope to commence sluicing operations at an early date.

Hunter's Claim.—This mining privilege, under the charge of Mr. McDowell, affords employment for five men, and the works are kept in workmanlike order.

Thornton and Scofield (two men) have just opened a more elevated face on the terraces, with satisfactory results.

Willis Sluicing Claim (two men).—The operations here are under the charge of John Dowell, who keeps the property in good order.

Mitchell and Thomson.—This party has done little or no work on the claim during the year, owing to shortage of water, due to non-completion of the water-race, which will not be finished to the proper intake for some time to come.

Mangles.—Z. Ekuneu is working on a small branch of the Mangles, for a bare living-wage.

About eight old men and an equal number of migratory Chinese eke out an existence fossicking along the river-beaches and gullies.

Preeble and Fairhall have obtained a subsidy of £100, at the rate of £1 for £1, towards the cost of driving a low-level tunnel at Newton Flat.

Barclay Brothers have just completed a series of successful prospecting operations on the north bank of the Newton River, and intend to connect same by pipe-line from their original water-races on the south bank.

Boatman's.

Howell and Son continue to sluice the auriferous drifts which have been carried down during denudation. These drifts are varied in value, and lie in irregular pockets, amongst large boulders, removal of which is sometimes attended with danger. Subsequent to the excessive dry season, heavy rainfalls carried away large portions of the high-level water-race, at a time when profitable work was much needed. However, these repairs are now completed, and sluicing is again in full swing. Water is more plentiful.

Grey Valley.

Upper Blackwater.—These elevated alluvial deposits cover a large workable area, practically on the same altitudes with the reefs, which are now being developed by the Blackwater Company. As a consequence, water for sluicing purposes is not reliable in quantity, and the few parties interested are satisfied to wait rainfall. An efficient water-supply may possibly be obtained, but considerable expenditure in labour and capital will be required to cut and maintain eight miles of water-race, a project too great for the few parties concerned. Three parties, comprising seven men, find employment, with varied results, although when water is plentiful wages are above the average. The gold is a heavy coarse sample, easily saved.

Bell Hill Syndicate.—Since this property was opened, shortage of an efficient water-supply has been one of the principal factors affecting the economy of operations. This want has be n duly considered, and during the early months of the year operations were wholly directed in reconstructing the main water-race, re-erecting and enlarging the flumes, and driving a low-level tail-race. The conservation of storm-water has also received further attention, but when visited the owners had not decided whether the enlargement of the old dam or the construction of a new one further up the flat would be the most serviceable, as cost was a first consideration.

Montgomery's Terrace (R. Quinn, manager).—Continuous slips on the main water-race have interrupted successful operations. As a means, however, to obviate this frequent and ruinous stoppage, substantial fluming has been constructed on the weak sections of the race. Thus, with the further addition of a storage-dam of sufficient capacity to hold the full flow of water between 6 a.m. and 6 p.m., hope is entertained that efficiency of operations is more assured. During the last four months of the year improvement in sluicing operations has been noticeable; water-supply, ample; while the water-race and dam have given full satisfaction. Yield of gold, 286 oz. 7 dwt. 21 gr.; value, £1,129 12s. 8d.

Republic.—Messrs. Owen, Guigan, and Brown work this mine on tribute, but work has been much interrupted, owing largely to the almost continuous slips on the water-race. Consequently, sluicing operations have been the reverse of profitable.

Red Jack's (three men).—Sluicing operations on this property have been very irregular. The property and plant are in good order.

Red Jack's Creek.—A subsidy of £91 5s. was authorised to the Upper Blackwater Miners' Association, and transferred in favour of George White, to drive 1,000 ft. of tunnel. Of this distance, 330 ft. has so far been driven.

Hindman Brothers (four men).—As this party draw their water-supply from the Republic Subsidised Race, the frequent leaks that have occurred during the year tended much to interfere with sluicing operations; otherwise the claim is worked profitably.

Orwell Creek.—Christianson and Rossi were granted a subsidy of £70 to drive 700 ft. of tunnel. This tunnel has been completed the full distance, but values of importance were not discovered.

Snobs Gully.—Subsidy of £50 was granted towards the cost of G. Askenbeck's tunnel, of which 300 ft. has been completed.

Fiji Terrace.—Griffiths and Williams have driven their subsidised tunnel a further distance of 467 ft., but so far developments are not important.

Fenian Creek (Dahl and party, late Lemon and party).—A subsidy of £150 was authorised to drive 1,500 ft. of tunnel, at 2s. per foot. 300 ft. has so far been driven.

Brandy Jack's Creek.—A subsidy of £94 was granted to Duncan Steel to drive 470 ft. of tunnel. This work has been completed, with unsuccessful results.

Callaghan's Creek.—Dredging has largely taken the place of mining in this old-established district. Two or three old resident miners continue to eke out a living.

Maori Gully.

Saunders and Party.—With the developments lately effected in additional water-race and pipe-line construction, water-supply is now permanent. Consequently, sluicing operations on this fully equipped property have been profitably carried out during the year, the face operated on, maintaining a depth of 50 ft., overlying the brown marine sandstone; the gold is a coarse heavy sample, easily saved. Yield of gold was 352 oz. 17 dwt. 19 gr., valued at £1,392 10s. Peter Kittelty had the misfortune of sustaining a compound fracture of left leg.

Hokitika.

Back Creek Alluvial.—This active centre of alluvial mining maintains lucrative and regular employment to eight parties, which comprise twenty-six men; and it may be interesting to note that Brooks and party were fortunate to open ground with exceptional values. In view of extending the development of this rich lead, Dean and party have sunk a shaft to a depth of 45 ft., but it is anticipated that to bottom the wash recently struck by Brooks and party sinking to a total depth of 130 ft. will be required. With respect to the working of these deep-level auriferous drifts, the natural character and trend of the deposits afford advantages favourable for driving out, which is the exclusive system worked. This shaft is assisted by the Rimu Miners' Association.

The Hokitika Prospecting League, having considered that the terrace lands located about two miles north of the Kanieri Forks Hotel had been the head source of the coarse gold so profitably worked in former days in the bed of the creek, employed Mullins and Kulsen to prospect the locality, when after twelve weeks' operations in sinking ten shafts to average depths of 15 ft., and driving 70 ft., all efforts proved fruitless.

Gentle Annie Terrace.—During the three months Hooper and party have prospected this terrace they exposed by trenching several reef outcrops, which gave very poor values. Also, in one face where 2 ft. 6 in. of quartz had been driven on for 20 ft. values were not improved. Further north a small leader 6 in. wide gave fair dish prospects, but when the means of ingress and egress are considered, further prospecting in this locality is not advisable. Should it be considered expedient to extend prospecting further, there is a block of country to the north-east worthy of attention.

Greeks Creek.—This locality affords employment for four men, but the result of their earnings is not known. Water is plentiful, and the gravels are easily dealt with.

Governor's Terrace Drainage Board.—In consequence of the contractors for driving the Governor's Terrace Drainage tunnel relinquishing their contract after constructing about 240 ft., the Drainage Board decided to get a survey made for a new tunnel a few chains westward of the old one. This was done, and tenders called for the work. Three tenders were received, at 5s. 6d. per foot. Work has been started, and is making satisfactory progress.

Subsidised Works.

Chows Terrace.—The Rimu Miners' Association were granted a subsidy of £500, at the rate of £1 for £1, towards the cost of driving a drainage-tunnel. Driven, 102 ft.

Kanieri.—Subsidy of £50 was granted to Irwin, Wells, and party for repairs to shaft. This work has been faithfully carried out, but the values obtained can only be regarded as payable in dry ground.

Lark's Terrace (George Noble and party).—This party has driven 180 ft. beyond the amount granted, but, although the gold obtained does not afford a liberal wage, the party consider it better than running about looking for wages.

Arch Creek (Boyd and party).—The balance of £49 4s. on this subsidised work was authorised to be used in sinking shafts. Five shafts have been sunk, to average depths of 28 ft. A further subsidy of £50 was authorised to enable this party to complete their scheme of prospecting operations. Drivings amount to 77 ft. and sinkings to 5 ft.

Dillmanstown.—D. Ryan was granted a subsidy of £45 to assist in driving 300 ft. of tunnel. The full distance was completed, but the wash, although carrying a little gold, is not payable.

Kelly's Terrace Drainage-tunnel.—Towards repairs and removal of plant from No. 3 vertical to re-erection at Taylor's shaft; cost, £54 16s. To driving and timbering 170 ft. of tunnel, at 5s. per foot; cost, £42 10s.

Ross.

Mont d'Or (J. McKay, manager).—Although the costly break in the water-races during March last restricted sluicing operations to a working period of 154 days of ten hours, the return of bullion obtained was 1,019 oz. 5 dwt. 13 gr., valued at £3,995 1s. 1d., which shows a decrease of 70 oz., valued at £254 8s. 11d., as compared with the preceding year. Three dividends of 1s. each, amounting to £1,800, were paid. One notable feature that has long existed against the productive capacities of this extensive proposition is that advantage has not been taken to provide sufficient level to drain the deeper deposits, which, according to recent shaft-prospecting, are highly auriferous. Meanwhile the water-races are all in good order, and, with the promise which the various working-faces afford, output should show a high average, provided the water-supply is favourable. Economy in working operations and immunity from accident continue satisfactory, while the minimum wage is 11s. per day.

MacLeod's Terrace Hydraulic Sluicing Company (Fergus MacLeod in charge).—When visited on the 20th September, 1907, all works were suspended, owing to shortage of water. Returns for the year, nil.

Park Terrace.—Coghlan and party having dissolved partnership and surrendered the claim, it was taken up later by Ford and party, who have sunk a shaft to a depth of 75 ft., intersecting a body ot washdirt 5 ft. in thickness, in which driving has been extended 28 ft.; but, owing to a heavy inflow of water, the shaft filled to a depth of 17 ft. in twenty-four hours. The prospects obtained from the shaft gave very promising results.

Jones Creek Storm Channel.—A grant of £100 was made to the Ross Borough Council towards repairs to this channel.

Rimu Syndicate, who hold prospecting licenses over 600 acres, have sunk two shafts to respective depths of 63 ft. and 72 ft., while the results so far obtained are stated by them to be highly satisfactory. Efficient water-supply for hydraulic elevating and sluicing could be obtained by electrically driven pumps from the Hokitika River.

Waiho.

The Westland Hydraulic and Dredging Company is closed down and protection granted.

Omawa.—With the exception of the beachcombers, Friend and party (two men) were the only men working at Omawa, chiefly engaged in development.

DREDGING.

In comparing the returns for the years 1906 and 1907, it is evident that the dredging industry continues to show a gradual decline, both in values and number of men employed. The gold won for 1907 as against 1906 was a decrease of 2,700 oz. 3 dwt. 1 gr., valued at £10,406 1s.; and number of persons employed, a decrease of thirty-seven. Although two new companies started operations during the year, the total working dredging fleet shows a decrease of five as compared with the previous year. The Worksop Dredging Company are rebuilding the Old Lagoons dredge, to work the Antonio's Creek.

MINERALS OTHER THAN GOLD.

Copper.

Maoriland Copper Company.—United Mine: During the year development has been chiefly confined to No. 7 level, which has been extended for 364 ft., and 207 ft. of crosscutting done. In No. 1 crosscut, a leader of ore 6 in. to 1 ft. in thickness was met with, and followed for 46 ft., showing signs of increasing underfoot. Payable ore was met with in the wider parts. The work done at the Monster Mine has been of a prospecting nature, to determine the extent and dip of the ore-body. Two winzes have been sunk, and a crosscut is being driven from an old level, in order to connect the bottom of No. 2 winze with a rise. The Champion Mine was recently reopened, and unwatered by a steam-pump, which raised 500,000 gallons. The No. 1 drive has been overhauled for 170 ft., but to reach the old face a large amount of work is still required, and the winzes on the lower level are in a bad state of repair, and will require to be retimbered. Doctor's Drive has been reopened for a distance of 224 ft. This appears to be a strong formation, but the extent and values cannot yet be determined. The 150 ft. shaft of this mine has not been explored, as the erection of the head-gear and winding-engine is not yet completed. On the Mount Claude group of mines no work has been done. A sawmill has been installed to cut timber for mining purposes, including rails wanted for the various tramways to connect the United and Champion Mines with the smelter-site. The necessary levels and excavations have beeen prepared for the smelting plant, and the furnace will be constructed directly the materials ordered are to hand.

Mount Radiant.—With the exception of ten men, engaged in road-construction, all work is temporarily suspended on the field, but surveys of special claims are being made.

Iron.

Parapara Iron Lease (held by the Public Trustee, as executor of the late Sir A. J. Cadman).—The varied developments so far carried out on this lease are confined chiefly to surface-works, which give no detailed information relative to the probable extent and values of the ore-bodies. These works comprise one mile of railway-construction; jetty 240 ft. in length, with wharf-accommodation (60 ft. by 40 ft.) added; and certain alterations to county road as affected by railway-works; together with useful lengths of saddle-tracks for the convenience of the workmen. Meanwhile the lease is under legal protection.

Parapara Iron Lease (held by Messrs. Turnbull and Jones; James Scaddon, in charge).—The works so far done on these leases have largely consisted in the formation of tracks and exposing outcrops, whilst the bush has been cleared in order to ascertain the extent and qualities of surface ores preparatory to tunnelling or sinking. Four men employed.

Oil.

Boring for Petroleum Oil at Kotuku (13th June, 1907).—The No. 9 borehole on the 2,000 acres mineral prospecting warrant at Kotuku had attained a total depth of 770 ft., the casing varying from 8 in. to 5 in. in diameter. The records kept by the manager show that the first 253 ft. directly overlying the sandstone formation was 163 ft. gravels and quicksands carrying artesian water and 91 ft. hard clays; sandstone rock, 152 ft.; limestone carrying heavy pressure of salt water and carbonic-acid gas, 110 ft.; and conglomerates, 254 ft. At end of the year the total depth had attained 1,000 ft. Altogether the total borings on this field have attained a depth of 3,092 ft., at an approximate cost of £5,500.

Antimony.

Mr. James Dunn has made application to the Warden at Blenheim to surrender his mineral-prospecting warrant, dated 10th January, 1907, over part Section 49, Block VII, Gore Survey District, Endeavour Inlet, Queen Charlotte Sound, on the conditions that at present prices of antimony the ore cannot be worked at a profit. Application is also made for a refund of the balance of his deposit.

Resolution Bay Point Antimony Company (Limited) (R. E. Clouston, in charge).—The various developments so far carried out on this property comprise 320 ft. of driving, securely timbered sinking, 43 ft.; while trenching forms a large part of the work done. The ore-bodies exploited maintain an average width of 3 ft., and, according to the analysis by Dr. MacLaurin, an average assay-value of 40 per cent. is obtained. Exclusive of the manager and timber-contractor, there are seven men employed.

Prospecting License held by Wearne and Party.—In the old antimony-mine, the Nos. 1, 2, and 3 levels have been repaired, in view of further extension, and a low-level tunnel is being driven in order to pick up the ore-body on a level 150 ft. below No. 5.

Preservation Inlet (Phantom and party's prospecting-area; W. Lire, in charge).—A parcel of 23 tons of crude antimony, sluiced from a slip, was sent to Sydney for treatment. The yield was estimated at 40 per cent., but when visited returns were not to hand. On the south-eastern section of the lease an outcrop showing good ore was exposed for 150 ft., and intersected to give 60 ft. of backs. At the point of intersection the formation is 14 ft. wide, of which only 1 ft. is of good quality; and from the samples treated at the Government Laboratory, average values of 48 per cent. are reported. About 300 ft. further to the south-east another outcrop of good ore is shown, but so far has not received attention.

Golden Treasure Mine, Murray Creek, Reefton.—Prospecting for antimony was carried out for some time on this property, but owing to the sudden fall in market values operations are meanwhile suspended.

ACCIDENTS AND FATALITIES.

Quartz-mines.

Fatal.

Keep-it-Dark Mine.—9/1/1907: Jeremiah Grant, shift-boss, killed by fall of roof while renewing timber.

Non-fatal.

Blackwater Mines.—7/11/1907: W. Smith, labourer, had leg fractured by piece of stone rolling off the sideling while excavating battery-site.

Alluvial Mines.

Fatal.

Slate River, Collingwood.—28/5/1907: Llewellyn John James was killed by fall of rock whilst working in tail-race.

Non-fatal.

Saunders and Party, Maori Gully.—28/5/1907: Solomon Kittelty sustained compound communated fracture of right leg by a piece of rock rolling and crushing his leg against a bench of sandstone on the side of the tail-race.

Dredging.

Fatal.

Prince of Wales Dredge, Ross.—5/10/1907: John Johnson, winchman, was drowned through sinking of punt in which he was crossing to shore.

Non-fatal.

Mosquito No. 1 Dredge, Ahaura.—19/5/1907: J. G. Paul, contractor clearing timber for dredge, sustained amputation of first finger of left hand, and portion of fourth finger of right hand, through his hands being caught in sheaves of snatch-block whilst hauling timber.

I have, &c.,

R. Tennent,

Inspector of Mines.

Mr. E. R. GREEN, Inspector of Mines, Dunedin, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Office of Inspector of Mines (Southern District), Dunedin, 31st March, 1908.

I have the honour to submit my report on the quartz and metalliferous mines, hydraulic sluicing and alluvial mines, together with the gold-dredges of the Southern Mining District, for the year ending the 31st December, 1907.

QUARTZ-MINING.

OTAGO.

Shotover.

Mount Aurum Gold-mining Company, Bullendale.—This mine has been closed down during the year, but operations may be resumed in the near future. The plant is in good working-order.

Shotover Quartz-mining Company, Skipper's (T. O. Bishop, manager; J. N. Lawson, secretary, Dunedin).—This mine has hitherto suffered through want of funds to carry on necessary development-work. Operations are now being conducted on progressive lines. Aided by a Government subsidy authorised by the Mines Department, that portion of the mine lying below the main level, and hitherto unworked, is to be tested by winzes. The expectation is that the continuation of the rich chute of quartz will be met with underfoot. A rise is also being put up to connect with the surface to fulfil necessary working-conditions with regard to ventilation and second outlet for men. Timber well used; explosives carefully stored and handled; rules posted.

Eureka Quartz-mine, Jennings Gully, Skippers Point (Lambie and party, owners).—This mine was abandoned by the Eureka Company, and was idle for some time. It was then taken up by a small syndicate, and operations recommenced. Aided by a Government subsidy, a rise was commenced from the low level, and this work is now in progress. The mine is equipped with a small battery of three heads. Two men employed.

Macetown.

Premier Sunrise Mine, Macetown.—The mine has not been reopened. The water-pressure is being used by Partridge and party to work the bed of the creek by hydraulic sluicing and elevating. This ground is deep and rough.

Sunrise Quartz-mine, Advance Peak.—This old property has been taken up recently by a local resident, no doubt with a view to reopening it. This mine is situated at an elevation of over 7,000 ft. above sea-level.

New Zealand Consolidated Gold-mines (Limited), (L. O. Beal, attorney, Dunedin).—An attempt was made to obtain portion of this holding on the ground of abandonment through non-compliance with regard to the working-conditions of the lease. Abandonment was not proved, and the Warden inflicted a fine instead of forfeiture. Since that I understand six men have been employed on various portions of the ground, and it is to be hoped that this valuable property will be developed on a working scale in the near future.

Hamilton and Party's Quartz Claim, Caledonian Gully.—Formerly owned by McKay and party, this mine has been acquired by the present owners, and operations continued. The high-level block is now almost exhausted, and preparations are being made to drive a long low-level tunnel, which will afford several hundred feet of "backs." The quartz is conveyed to the paddock by means of an aerial ropeway, and it is then carted to the battery. Two men generally employed. Mine-workings in good order.

Anderson, Hannah, and Party's Quartz Claim, Scanlan's Gully.—The work undertaken by this party during the year has been of a more progressive nature than formerly. The reef has been opened up and driven on in several places. The party have purchased a five-head battery, the erection of which is now almost complete. A good deal of money has been expended in construction of sledge tracks and other preliminary works. Stoping operations will be commenced as soon as the battery is finished. Seven men employed.

Cromwell.

Cromwell Mine, Bendigo.—The quartz-mine has not been reopened, while, owing to the dryness of the season, sluicing operations on the surface have been hindered. The proposal to drive a low-level tunnel to crosscut the mineral belt of country has again been brought forward, and the scheme is favourably regarded by those having knowledge of the locality.

Come-in-Time Quartz-mine, Bendigo.—This mine was prospected during the year, and results were said to be favourable. A company is being formed to erect crushing machinery.

Alta Mine, Bendigo.—Some attention has recently been given to this property, in which gold and scheelite are found in the reef. There are several reefs in this neighbourhood which will be taken up should demand arise for quartz-mining areas.

Bannockburn.

Go-by Quartz-mine, Carrick Range (J. B. Holliday, owner).—This property has been practically unworked during the year. Holliday crushed a few loads of quartz when water was available.

George Lawrence, Carrick Range.—Small parcels of stone are obtained from time to time and crushed in the Star of the East battery when water is available.

Caledonia Mine, Carrick Range.—This mine is being reopened by Messrs. Robertson and Lawrence. It is stated that payable quartz has been struck in the level. Should this continue the mine will be properly developed. There is a complete battery, driven by water-power, on the property.

Bald Hill Flat.

Advance Mine, Obelisk Range (R. T. Symes, owner).—Mr. Symes has spent many years in the search for a rich chute of quartz. Most of the stone obtained from driving and surface sluicing has been payable. A better class of stone has been met with recently in the Advance Mine, and this has led to renewed attention being given to this reefing field, from which very rich quartz has been obtained in former workings.

Alexandra.

Conroy's Gully Reef.—John Robertson continues to obtain surface quartz from this area, which he crushes in the five-head battery when water is available for power purposes.

Day Dawn Reef.—Attention has been given to this reef, but operations have not so far exceeded the prospecting stage. This property has been under option to a Wellington syndicate.

Roxburgh.

Parker's Reefing Company, Campbell's Gully.—This company has been aided by a Government subsidy to open up the mine and test its value. This season is being devoted to erection of necessary winding and pumping plant. Timber is also being procured from the Waikaia Bush. The locality is snow-bound in the winter months, and sinking operations will be gone on with next spring.

Serpentine.

Cogan's Reef (John Cogan, owner).—This reef is found outcropping on the surface for a considerable distance, and shows gold in stone from shallow trenches. Shafts require to be sunk to prove continuation in quantity and quality at depth. Cogan's battery is situated in the district.

German Jack's, Golden Gully, and Golden Belt Mines continue unworked.

Waipori.

Quartz-mining was at a standstill for several years in this district. The antimony-mine on the Lammerlaws was reopened, and this led to attention being given to the reefs. Negotiations were entered into with a view to securing the O. P. Q. property from the present holder, while the adjoining property, known as the Canton, was pegged out by Pearsall and others. It is hoped that this movement will be productive of permanent results.

Milton.

Canada Reef Mine, Table Hill (Canada Reefing Company, owners; R. M. McDonald, manager).—During the early part of the year Park Bros. continued to work this property. It was then sold to the above company, and operations were devoted to taking out the block of stone opened up by the extension of the shaft to the 120 ft. level. This block proved to be narrower, and was soon worked out, while prospecting operations failed to open up payable stone above that level. Funds to deepen the shaft still further, to open up on another portion of the property, not being available, the mine has been closed down in the meantime.

Ocean View Reef, Table Hill.—J. Hawkins prospected this reef considerably, and took out stone, but, owing to the dryness of the season, was unable to get the stone crushed at the Canada Reefing Company's battery. Other prospectors in the district were similarly hampered in their operations.

Hindon.

Mr. Parker continues to prospect in this district, in which several other prospectors are at work.

Nenthorn.

This field has attracted considerable attention lately, no doubt owing to the results obtained in the Macrae's and Mount Highlay districts.

Macrae's.

Golden Point Quartz-mine (W. and G. Donaldson, owners).—This property continued to be worked during the year on the usual lines, with good results. The mine is generally well developed, and timber is well used. Explosives carefully handled. The crushing and concentrating plant is in good order. A large cyanide plant is now in course of erection for treatment of the battery sands, which are being saved. A large amount of scheelite is produced from this mine. About fifteen men find employment in the mine and battery.

New Zealand Gold and Tungsten Mine, Mount Highlay (W. and G. Donaldson, owners).—The quartz is mined from the opencast on this property. A self-acting ground tram-line is used to convey the stone to the battery. In addition to the ordinary gold-saving appliances, there is a concentrating plant to save scheelite, of which there is large percentage in this stone. A lignite-pit has been opened within a short distance from the mine, to provide fuel for the steam-power plant. About thirteen men are employed.

Highlay Gold and Scheelite Mine, Mount Highlay (W. and G. Donaldson, owners).—The former owners, Messrs. Gilmour and Matheson, installed a producer-gas plant, which was only a partial success. The mine and plant were then sold to Messrs. Donaldson Bros., who removed the battery from this site and added it to the plant already in operation at the New Zealand Gold and Tungsten Mine.

General.—Considerable attention has been given to the Mount Highlay district, and a number of areas have been taken up for gold and scheelite. Tait and party have their property under offer to a Melbourne company.

The Duke of Edinburgh, Ounce, Maritana, and Golden Bar reefs, around Macrae's and Stoneburn, were all idle during the year.

Barewood.

Barewood Quartz-mine, Barewood (H. S. Molineaux, mine-manager).—Operations at this mine have been of a decidedly progressive nature during the year. In order to reduce cost of crushing, the oil-engine was replaced by a 29 B.H.P. Campbell producer-gas plant. This was installed, and has since been in successful operation. As the stone in the mine was proved good below the 230 ft. level, the main shaft was sunk an additional 50 ft. This work was carried out without mishap, and stoping operations are now being proceeded with on the block of stone opened up. The mine is generally in good working-order. Ventilation good. Rules posted. About twenty-two men are employed in and about the mine and battery.

Scott's Gully Mine.—An area around No. 1 shaft on the Barewood line of reef has been taken up by Louis Murray and party, with the intention of forming a company to work the property.

Riley's Shaft Workings.—This was No. 2 shaft area, and it has been taken up by Buckland and Ewart. Scheelite exists on the property, which, I understand, is under offer to a syndicate.

SOUTHLAND.

Preservation Inlet.

Crown Quartz-mine, Cuttle Cove (William Tood and others, owners, Invercargill).—A great deal of work has been done about the surface on numerous rich small leaders. A low level has now been driven to crosscut the mineral belt and gain several hundred feet of "backs." The work is being well carried out. Timber is plentiful and well used. Suitable magazines provided. A five-head battery, formerly on the Bella quartz reef, Waipori, was shifted to Cuttle Cove and re-erected there. The first crushing was expected early in 1908.

Tarawera Galene Lode, Isthmus Sound (D. McKenzie and party).—This lode contains an admixture of iron, copper, lead, zinc, gold, and silver. Tests made prove that it requires special treatment for the extraction of its precious metals. Previous workings were too close to the water's edge, and heavy drainage had to be contended with.

Morning Star Quartz-mine, Longbeach (Joseph Holloway and others, Invercargill, owners).—This company has taken up the old property, and men are employed getting the mine and battery ready to resume active operations at an early date. In addition to the ordinary quartz-mining operations, a large area of ground adjoining Longbeach will be worked by hydraulic sluicing. The company holds rights for seven heads of water for this purpose from McNamara's and other small creeks in the neighbourhood.

Alpha Mine.—I understand that this mine has been taken up by Mr. Louis Longuet, who has an intimate knowledge of the resources of this district.

Golden Site Quartz-mine, Wilson's River.—This mine, which has long remained neglected, is now owned by Mrs. Webster, of Invercargill. I was informed by the owner that the property may be re-opened at no distant date.

I am pleased to report renewed activity in mining pursuits in this district. Quartz areas are being taken up, and applications are being made for available water-supplies.

Glenore.

Although mining is at a standstill in this district, strenuous opposition was offered to the proposed sale of the mining reserve known as Adam's Flat. It is recognised that this large flat is payably auriferous, provided a suitable method can be found to work it.

There are a few fossickers still in the vicinity.

The operations of the Gold Bank dredge were unsuccessful, and the dredge was closed down.

Manuka Creek.

Manuka Gold-mining Company (Limited), Manuka Hill (A. McCorkindale, manager; R. Pilling, jun., secretary, Lawrence).—Ground-sluicing operations are being carried on with a limited water-supply. Three men employed.

Waitahuna.

Frank Whelan's Sluicing-claim.—The proposed scheme of raising water for sluicing by means of electrically driven centrifugal pumps has been abandoned. It is now proposed to bring in a water-race with a carrying-capacity of fifteen Government sluice-heads of water, and work the claim by hydraulic sluicing and elevating.

Waitahuna Flat.—The bringing-in of Whelan's water-race will enable a trial to be made of the deep ground, and the subsequent working thereof if proved payably auriferous. There is a large extent of ground which can be worked by hydraulic sluicing and elevating.

Upper German Flat Hydraulic-sluicing Claim (Frank Bell, manager).—This privately owned sluicing-claim continued in operation during the year. Three men employed.

Dredging.—This form of mining was represented by two dredges—viz., the Imperial and the Havelock.

Waitahuna Gully.

The various hydraulic sluicing and elevating claims continued to work on the usual lines throughout the year. With the exception of the Waitahuna Company's claim, these claims are working in the cement-deposit. About sixteen men find employment in the five claims at work here.

Weatherstone.

The Golden Crescent and the Golden Rise sluicing claims are the principal claims in the locality. In common with other claims in this district, the three claims in this locality suffered through the long-continued drought. About fifteen men are employed on this field.

Tuapeka.

The Bluespur and Gabriel's Gully Consolidated Gold Company (Limited), Bluespur (J. Howard Jackson, general manager; J. Uren, mine-manager).—Operations have been conducted on the usual lines during the year, but progress has been considerably hampered owing to shortage of water-supply. The cement quarried by means of large blasts of roburite is broken up by hammer and gad, and sluiced away by water under pressure. So important is a certain large amount of water in breaking down and elevating the material, that any shortage causes a diminution in the amount of material treated. As the cement may be termed low-grade material, the question of maintaining the mine as a paying proposition depends entirely upon a certain amount of material being treated. The mine and its requirements are well understood by the management. Operations in the upper workings (No. 2 paddock) have now arrived at a point at which the difficulty of working the cement on the boundary has arisen. This has been a serious question, involving much litigation, ever since the inception of workings in this cement-deposit. It is hoped that a satisfactory solution of the difficulty will be arrived at between the two parties interested. The successful working of the deeper levels of the mine is now engaging attention, and this portion of the mine is expected to be profitable with an ample supply of water. The following statement forwarded by the general manager is of interest: "Average number of men employed, 26; quantity of cement treated, 131,656·75 cubic yards; gold won, 921 oz. 2 dwt. 6 gr.; cost, £3 16s. 5¼d. per ounce, equal to 97·756 per cent. of value; amount paid in wages, £2,631 5s. 5d.; amount paid for explosives, £117 2s. 10d.; amount paid for upkeep of race, £638 6s. 2d. To illustrate the calamitous effect of the past two years' drought I append figures showing the quantity of water used at the mine for the last three years: 1905–06—Cubic feet of water, 613,370,000; hours sluicing, 7,653·5; hours pumping, 525: 1906–07—Cubic feet of water, 558,677,000; hours sluicing, 6,921·0; hours pumping, 524: 1907–08—Cubic feet of water, 441,313,500; hours sluicing, 5,155·5; hours pumping, 392. A diminished water-supply, owing entirely to the drought, between 1905–06 and 1907–08 of 172,556,500 cubic feet, or 2,498 sluicing-hours."

Kitto and Party's Claim, Munro's Gully.—This party continues to work the Bluespur cement from the Munro's Gully fall. The style of operations is the same as in the Bluespur Claim. Eight men were employed in the claim, which is privately owned.

E. Browne and Party's Claim, Munro's Gully.—The bed of Munro's Gully is being worked by hydraulic sluicing and elevating.

P. P. Thomas and Party's Sluicing Claim, Munro's Gully.—This party continues to sluice away terrace ground adjoining Munro's Gully. The heavy clay overburden is a great obstacle.

Lower Tuapeka River.

Tamaiti Gold-mining Company, Tuapeka River (E. J. Highlay, manager).—This plant continues to operate satisfactorily, but operations were hindered through scarcity of water for the turbine. Some good gold returns were obtained where work was first begun, but during the year operations have been carried on some distance from the power-site. Five men employed.

McKay and Party's Claim, Tuapeka Mouth.—This party secured McLeod's claim, and took up an area embracing the auriferous portion of the mining reserve, through which a deep lead runs. The intention is to install a plant in the Tuapeka River similar to that in successful operation on the Tamaiti Claim.

Gore Syndicate Claim, Tuapeka River (John Claffey, manager).—This claim was let on tribute during the year. The heavy overburden of clay has proved an obstacle.

Waipori.

Bakery Flat Hydraulic Sluicing and Elevating Company, Upper Waipori (John T. Johnson, manager).—The past year's operations, which have been considerably hampered through shortage of water, have been conducted at the head of the lead. The object of the work undertaken here was to shift the bed of the river and provide a flood-wall, in order to enable future operations to be carried on without interruption from floods.

O'Brien and Party.—The proposed scheme to bring in a large body of water from the upper reaches of the Waipori River to work the Waipori Deep Lead is held in abeyance pending the ground being exhaustively tested by means of the Keystone boring-machine. The above party continued to operate with their ordinary water-supply.

Knight Bros.' Claim, Waipori Flat (H. Blackmore, manager).—The water rights were improved and diverted from Lammerlaw Flat to a claim on Main Waipori Flat. There is a large area of ground in the locality which should pay well for treatment by hydraulic sluicing and elevating, but which was too low grade for the dredge to work. Six men employed.

Dredging.—There were five dredges on the flat, but only four were in operation throughout the year. Towards the end of the year McNeil and party's dredge reached the boundary of the claim, and was closed down. This dredge was privately owned, and was a highly successful gold-producer.

Beaumont.

Buchanan's Sluicing Claim, below Beaumont.—Mining in this district at one time attained large proportions, but is now represented by the one claim, which, having a poor water-supply, works only intermittently.

Dredging.—The new Paul's Beach dredge was shifted to Balclutha and dismantled.

Island Block.

Island Block Gold-dredging and Sluicing Company, Island Block (D. Weir, manager).—Hydraulic sluicing and elevating operations have been steadily conducted on the usual lines during the year, with moderate success. It is considered that, owing to the present position of the claim, some improvements are required to be effected to the plant in order to obtain a greater efficiency. An average of fourteen men were employed during the year.

Tallaburn Hydraulic-sluicing Company, Currie's Flat, Tallaburn (H. Redman, manager).—The ground being operated on by this company does not present any great difficulties, and the work is carried out on good lines. The possession of a good water-power enables a large amount of ground to be treated. Five men employed.

Cooper and Party's Hydraulic-sluicing Claim, Horseshoe Bend.—Operations in this claim are not on an extensive scale, as the party depend for water-supply on by-wash water from the Island Block Company. Two men generally employed.

Gunton's Beach Hydraulic-sluicing Claim (Maddon and Myers, owners).—Continuous working of this claim is hindered through a totally inadequate and unreliable water-supply. Two men employed.

Miller's Flat.

Dredging.—All mining operations in this locality are carried on by means of dredges. The dredging industry in this district has proved of a permanent and successful character. Seven dredges continued in operation during the year, while one was removed to the Waikaia district. The majority of these dredges are working the bank portions of their claims and obtaining payable returns.

Kelso.

Duntulm Hydraulic Sluicing and Elevating Claim, Pomahaka River.—The water rights for this claim are not drawn from the Pomahaka River, but from small tributaries; hence the supplies are uncertain during winter and summer months. The ground is not payably auriferous throughout. Three men generally employed.

Dredging.—The Ardmore continues to operate on Ardmore Estate, at Scrubby Flat, near Kelso.

Campbell's Gully.

The auriferous deposits on the high country of the Whitecombe Range and Mount Benger have received considerable attention during the year. Several applications have been made for water rights for hydraulic sluicing and elevating purposes. Hitherto this back country has been prospected by "hatters" and fossickers, but the ground will in future be worked by up-to-date sluicing plants.

Dumbarton.

Anderson's Flat.—This flat was extensively prospected during the year on behalf of a Dunedin syndicate. The Keystone machine-drill was used, and is stated to have proved its reliability and superiority for testing deep alluvial ground. It is proposed to work this flat by hydraulic sluicing and elevating. The water is to be drawn from the Teviot River, but as the available supplies from this river are taken up, progress is hindered until completion of a scheme to raise the embankment at Lake Onslow, and thus conserve a largely increased supply of water.

Roxburgh.

Roxburgh Amalgamated Mining and Sluicing Company (Limited), (J. H. Waigth, manager).—Operations are carried on in this claim on somewhat extensive lines. The claim is well and systematically worked. The company holds large water rights from Teviot River, and during dry seasons is enabled to keep the supply up to requirements by drawing on the storage-water in Lake Onslow. Fourteen men are employed.

Ladysmith Gold-dredging Company (Limited), East Roxburgh (W. Donnelley, manager).—The operations in this claim are conducted on systematic and successful lines. The mode of working is by hydraulic sluicing and elevating. River gravels forming the bank of the Clutha River are being treated. Nine men are employed.

Commissioner's Flat Sluicing Claim (Coulter and party; R. George, manager).—This is a privately owned claim, worked mainly by shareholders. Operations continue to be carried on with success. Five men employed.

Pleasant Valley Hydraulic-sluicing Claim, Coal Creek Flat (McPherson Bros., owners; F. Swanwick, manager).—Auriferous gravels lying on a terrace above the present level of the Clutha River are being worked.

Dredging.—Five dredges continue to operate on this stretch of the Clutha River, and their operations are attended with success.

Baldhill Flat.

Last Chance Mining Company (Limited).—The original company went into liquidation during the year, and the property was purchased by a smaller company. Operations were resumed in the terrace ground. Six men employed.

Duntulm Hydraulic-sluicing Party, Fraser Basin (William C. Nicholson and party, owners).—A plant formerly in operation on Baldhill Flat was purchased and removed to the claim during the year, but sluicing operations were not begun.

Dredging.—The new Fourteen-mile Beach dredge operated for portion of the year, when the river-level was favourable.

Naseby.

Miners on this goldfield met with a serious reverse during the year, consequent upon a dry season following upon a previous drought. When water is available the usual number of claims are at work. Most of these are now worked by hydraulic sluicing and elevating, the water being obtained from the Government water-supply. There are, however, several private water-races brought on to this field. Some attention is again being devoted to the possibilities of auriferous beds lying at a lower level than hitherto worked. During past years attempts have been made to test these beds in depth, but the attempts failed, chiefly through lack of suitable appliances. The advent of the Keystone borer as a reliable means of testing deep alluvial deposits should furnish a means of satisfactorily testing the deep levels at Naseby Goldfield.

Patearoa.

Patearoa Hydraulic-sluicing Claim (D. C. Stewart, manager).—This claim has from time to time yielded large returns, but, unfortunately, the water-supply is unreliable. Consequently, during summer seasons operations are not continuous. The mode of working is by hydraulic sluicing and elevating. Seven men employed.

There are several smaller claims in this district.

Upper Taieri River.

Taieri Falls Sluicing and Electric-power Transmission Company (Limited), (John Tyson, manager; Edward Trythall, secretary, Dunedin).—The work of completing the water-race and erecting the mining plant is now being gone on with. The claim will be worked by hydraulic sluicing and elevating.

It is worthy of note that a good deal of attention is now being given to alluvial deposits lying within the higher reaches of the watershed of the Taieri River.

Serpentine.

John Wilson's Hydraulic-sluicing Claim.—This claim has been bought by Neil Duncan and M. Carr. About five heads of water are utilised, under a vertical pressure of 200 ft. The material is lifted about 15 ft. This water commands a good area of ground, but the supply is unreliable. Two men employed.

John Cogan's Hydraulic-sluicing Claim.—This claim is situated in Long Valley. Five heads of water are used, under a vertical pressure of 80 ft. The material is being lifted 12 ft. There is deep ground in the claim, which has been proved 40 ft. in depth in places. There is a large area of ground in Long Valley, but the water-supply is poor. Two men employed.

J. P. Weatherall and George Banbury's Hydraulic-sluicing Claim.—This claim is situated at German Jack's. The claim is worked by hydraulic sluicing and elevating. The ground averages 30 ft. in depth.

F. Adam and John McDonald, Claimholders, Serpentine.—These men are sluicing between Puketoi and Serpentine.

George McLeod's Claim.—The race formerly known as Garrigal's is being cleaned out by McLeod, who intends to work his claim by hydraulic sluicing and elevating.

There are several fossickers—James Shepherd, George Parker, William Storey, — Lannigan, Ah Gow, and Young Han—working in various places.

Deep Stream.

Deep Stream Amalgamated Sluicing Company (Limited), (J. Cartwright, manager).—Sluicing operations were continued on the usual lines, with moderate success. Six men employed.

Lammerlaw Range.

John Girvan, Claimholder, Lammerlaw.—This claim, formerly known as Pettigrew's, is worked by ground-sluicing with canvas hose, and is situated ten miles from the Serpentine.

William R. Routledge and Thomas Reid, Claimholders, Lammerlaw.—Ground-sluicing, with canvas hose.

St. Bathan's.

Scandinavian Water-race Company, St. Bathan's (Neil Nicolson, manager).—This company continued operations in the claims at Surface Hill and Kildare Hill, but operations were considerably hampered through the long drought. The operations are carried on in a systematic and safe manner. Sixteen men generally employed in the company's works.

United M. and E. Water-race Company (Patrick O'Regan, manager; William Pyle, legal manager, St. Bathan's).—The claim adjoins the famous Kildare Hill, and is working by hydraulic sluicing and elevating on a large scale. Operations are conducted in a safe manner. Nine men generally employed.

Matakanui.

The four large hydraulic sluicing and elevating claims in this district continued to operate on the usual lines during the year. No change worthy of mention has taken place, except that in common with other parts of Central Otago the drought caused a serious diminution in water-supplies. About thirty men are employed in mining in this district.

Ophir.

Mining in this district is practically represented by the operations of the Black's Flat dredge, which has met with success.

Alluvial mining is dormant, awaiting the bringing-in of a suitable supply of water from the Alexandra Water-race.

Alexandra South.

There is not a great deal of sluicing being carried on in the vicinity of Alexandra, but several claims have been started on the Galloway Terraces. There is a large extent of alluvial country in this locality, which is commanded by the Alexandra Water-race. The dry season curtailed sluicing operations.

Dredging.—Four dredges continue to operate in the gorge of the Clutha River below Alexandra. The results obtained last season warrant the continuation of operations. There are nineteen dredges between Alexandra Bridge and Clyde, fifteen of which are in continuous operation. The Earnscleugh Gold-dredging Company have extended the use of electricity to the No. 5 dredge.

Clyde.

Mining pursuits are not brisk in this district now, and more attention is being devoted to fruit-growing. There are a few parties working in Blackman's and other gullies on the footslopes of the Obelisk Range. The Monte Christo dredge has been removed from Clyde to the Alpine Consols Claim, about eight miles up the river.

Cromwell.

This district maintains its position as a chief centre of the dredging industry. Certainly the dredges on the Kawarau River are becoming fewer, and do not yield such large returns as formerly, but the successful operations of several large dredges working in the Clutha River Basin have proved the existence of an extensive dredging-field. There are now two dredges below Cromwell, three on the Kawarau River, and eight are in operation in the Clutha River Basin.

Sluicing operations have been hampered through the want of sufficient water, but negotiations have been in progress for the flotation of a company to work a large alluvial deposit at Quartz Reef Point.

Cardrona.

Criffel Lead Sluicing Company (Limited), (A. C. Buckland, manager; Edward Trythall, secretary, Dunedin).—The operations of this company during the year have been surrounded with difficulties. The nature of the deposit, with the heavy broken material overlying it, demands a constant large supply of water. Opening-out operations were more than usually difficult, owing to the huge mass of rock overlying the auriferous wash. The work has been carried on in a systematic manner, but the water-supply has been inadequate during the greater part of the year. The average number of men employed during the year was ten.

Lone Star Gold-dredging Company's Claim (G. Heideman, manager).—The company acquired the water rights and mining plant of Walter Little, and sluicing operations were commenced on shallow ground bordering the area already worked by the company's dredge. The ground was too shallow to be worked by the dredge. The company employed sixteen men in connection with the dredging and sluicing claims.

Branch Creek Hydraulic-sluicing Company (Dugald McGregor, manager; E. C. Hutton, secretary, Dunedin).—A water right from the Cardrona River was purchased and put into order. It was then extended about four miles to command a claim at the foot of Branch Creek. A large number of men were employed in the construction of the race. The claim has been equipped with a suitable plant for hydraulic sluicing and elevating.

Little and Party's Sluicing Claim.—This party secured the right to eight heads of water out of Back Creek, a tributary of Branch Creek, and it is proposed to carry on hydraulic sluicing and elevating operations in Branch Creek.

Dredging.—Two dredges continued in operation during the year. Lafranchi's dredge has been secured by a party of working shareholders.

Luggate.

Luggate Creek Sluicing Claim (Robertson and party).—A right to five heads of water was granted from right-hand branch of Luggate Creek. It is proposed to work a large area of ground in the bed of the creek by hydraulic sluicing and elevating. This ground was prospected by boring, and proved to be payably auriferous. The greatest depth was about 20 ft.

Fatboys.—Farther up the range several parties continue sluicing operations with poor water-supplies. The material treated is somewhat similar to that of the Criffel lead.

Dredging.—The Albertown dredge was in operation the greater part of the year, apparently with satisfactory results.

Lindis.

Wade and Party's Sluicing Claim.—This claim is situated in the gorge of the Lindis River. The present water-supply is drawn from the Lindis River, but a right has been obtained from Risky Hill Creek, which will afford better means of working. Three men employed.

George's Sluicing Claim.—This claimholder holds the right to four heads of water from Chief's Creek. The supply is inadequate in the summer season, and when water is available sluicing is carried on in shallow ground.

Arrow River.

Arrow Falls Sluicing Company (J. Ramsay, manager).—The year's operations of this company have been attended with great success. Energy has been displayed in the working of the claim, and some very rich ground was worked. Floods in the river occasionally hamper operations. Eight to ten men are generally employed.

Macetown.

Anderson and Party, Eight-mile Creek, Arrow River.—Sluicing terrace ground. When the water-supply falls short the party work in their quartz claim, Scanlan's Gully. Seven men employed.

William Reid and Party, Red Hill.—Ground-sluicing operations are being conducted on the usual lines.

Partridge and Others, Premier Gully.—The Premier Gully may reasonably be believed to contain a payably auriferous deposit, but attempts to work it have not, so far, been attended with great success. The ground has proved to be deep and rough.

Richard Balch's Claim, Arrow River, Macetown.—During the year the water was directed on a large terrace bordering the Arrow River.

Queenstown.

Reid and Lee, Twelve-mile, Lake Wakatipu.—Hydraulic-sluicing operations were carried out on this claim on the usual lines.

Reid and McDonald, Twelve-mile, Lake Wakatipu.—This claim is worked by hydraulic sluicing.

Arthur's Point.

Big Beach Hydraulic Sluicing and Elevating Company, Shotover River (James McMullan, jun., and party, owners).—Continuous operations are carried on in this claim, apparently with satisfactory results. The licenses for the water rights recently expired and were renewed. There is a large extent of ground to be worked. Five men generally employed.

Moonlight.

Moonlight No. 2 Claim, Moonlight Creek, Queenstown (O. Lynch, manager).—This claim has been purchased by a small company. The water-races were put in working-order, and hydraulic-sluicing operations were renewed. Should payable ground be opened up, there is a large extent of ground available for working.

Shotover.

There is nothing new to add to the reports of past years. The available water is all held and used, and the usual number of claims continue in operation. Ground-sluicing is carried on in the terraces, while the river-bed is usually worked by wing-damming and the use of Smith's jet-pump system. The Maori Point dredge was subjected to many misfortunes, and came to the end of her career during the year. The machine was sold for removal.

Oxenbridge Bros. and party have undertaken to divert the Shotover River about one mile above Arthur's Point, Queenstown. A bluff of rock juts out into the river so as to form a sharp bend. By completion of a tunnel through this bluff it is expected that a total distance of 15 chains of the river-bed will be available for working. The total length of the tunnel will be 550 ft. The work was started two years ago, and good progress has been made. The initial work of opening out and constructing a tail-race from the face of the tunnel occupied a large part of the time. The dimensions of the tunnel are: 10 ft. in height and 12 ft. in width. It is expected that the tunnel will shortly be completed. With regard to the portion of the river to be worked, the general opinion is that the venture will be accompanied by success. Three men are now at work.

SOUTHLAND.

Nevis.

Lower Nevis Hydraulic-sluicing Company (John McLean, manager).—Sluicing operations were begun in earnest during the year, and carried on with a fair amount of success. The usual troubles incidental to the starting of new water-races were encountered and overcome. It is expected that this company will have a long and profitable existence.

Renshaw's Claim, Lower Nevis.—This claim and water rights have been purchased by Thomas Hogg and party, and a start has been made to put them in more efficient working-order than hitherto.

Our Mutual Friend Hydraulic Sluicing and Elevating Claim (Masters and Adie Bros.).—Operations are conducted on the usual lines in this claim from season to season. Four men employed.

Robertson and Party's Hydraulic Sluicing and Elevating Claim.—This claim changed hands during the year. Operations were carried on on the usual lines as formerly.

McLean and Party's Claim.—This party have taken up the old Rip and Tear, or Glenore Claim. Drainage is effected by a hydraulic jet pump, which also elevates the washdirt. The auriferous wash is driven and blocked out. The existence of this payable ground was indicated by the operations of the Lower Nevis dredge.

Dredging.—Five dredges were in operation early in the year, but only three recommenced operations this season.

Upper Nevis.

Joe Park's Hydraulic-sluicing Claim.—This claim was purchased by T. O'Brien and M. Drew, who continued hydraulic-sluicing operations in shallow ground. Two men employed.

Bell and Party.—A small company was formed in Southland to work ground in German Creek Gully by driving and blocking out the auriferous wash.

Ben Nevis Sluicing Company (J. Robertson, manager).—The claims, water rights, and mining plant of E. McMillan were purchased by this company. The company continued on the usual lines, and was very successful while the water-supply was adequate. In order to improve the working-conditions of the claim, applications were made for larger water-supplies, and it is intended to carry on operations on a larger scale in the future. Eleven men employed.

Ellis Brothers' Hydraulic Sluicing and Elevating Claim (R. McDonald, manager).—The progressive owners of this claim have secured the claim known as Bailey's Hill. This property will be a valuable one when worked with a large supply of water. Operations were conducted in the present claim on the usual lines. The improved conditions consequent upon the greater pressure now available are much appreciated.

Graham's Sluicing Claim.—The new proprietors have shifted the plant back to the head of the rich lead worked during the past few years. There is a large area of slip country here, which has evidently disturbed the auriferous lead. The plant is in good order, and work is well conducted.

The auriferous deposits on the high ranges at the head of the Nevis and Nokomai watersheds are now receiving a good deal of attention. Several water rights have been secured. The shortness of the season is a drawback to this locality.

Dredging.—The persistent efforts of the owners of the one dredge here were rewarded this season, when, for one week's work, the yield of gold was 91 oz. The gold appears to run in rich leads in this flat, and, as the flat is wide and extensive, the leads are not easily picked up.

Athol.

George Holloway and Party's Claim, Paddy's Alley (A. Greig, manager).—It is reported that this claim would yield large returns of gold under better working-conditions. A larger and more constant water-supply is required. Three men employed.

Nokomai.

Nokomai Hydraulic-sluicing Company (Kum Poy, secretary, Dunedin).—The history of the operations of this company denotes progress. The two upper claims are well conducted, and operations were carried on as usual during the year. The Lion water was brought on to the No. 3 claim and used for some time, but owing to the water-supplies at the other two claims becoming short, the Lion water was used to augment their supplies and secure continuous working. The company is a large employer of labour, sixty men being engaged in connection with the various works.

Victoria Gully Sluicing Claim (Selwood and Bourke).—Two men find employment in this hydraulic sluicing and elevating claim.

Waikaia.

Argyle Hydraulic-sluicing Company, Muddy Creek (J. Stewart, manager).—There is nothing fresh to report regarding the operations of this company. The water-power dredge driven by Stewart's system continues to work satisfactorily. Twelve men are employed.

Winding Creek Hydraulic-sluicing Claim, Winding Creek (J. Shanks, manager; Round Hill Mining Company, owners; A. Reynolds, secretary, Riverton).—This property is held by the Round Hill Mining Company. A large area of ground has been top-stripped preparatory to taking up the bottom level by hydraulic sluicing and elevating. Ten men are employed.

Upper Waikaia Gold-mining Syndicate.—This claim is owned and worked by a party of Roxburgh shareholders, for whom H. A. Tamblyn, of Coal Creek Flat, is secretary.

Muddy Creek Terraces.—A company has been formed with a large working-capital to bring in the water of the Dome Creek. The race will be an expensive work, but the large area of alluvial ground commanded by the race is expected to recompense the company for its outlay. The race is at present under course of construction. Forty men are employed in the race-cuttings.

Dredging.—The field continues to maintain its position as a gold-producer. Certainly the operations of many dredges have proved that the rich wash runs in leads, and outside these leads the deposits are low grade. Seventeen dredges are now in operation on this field, and it is expected that the number will be added to.

Gore.

Charlton Valley.—Five dredges continue at work in this valley, and all secure payable returns of gold. The scheme to bring in the water from the Otamita Creek to work a claim in the valley is not yet an established fact.

Mataura River Valley.—There are two dredges in operation on the Mataura River, but dredging operations in this valley have proved the material to be low grade.

Waikaka.

Twenty-two dredges were at work in this valley during the year, all securing payable returns. The Argyle dredge was destroyed by fire, and Graham and party's dredge was removed to the Charlton district. Attention is now being given to the gravel lead which traverses the head of the valley near the Waikaka Township. A grant for water is now being applied for from the Glendinning Burn, and another application is being made for a large grant of water from the Pomahaka River.

Chatton.

One dredge continues at work on this mining reserve, but operations are dependent on a poor water-supply.

Waimumu.

This is pre-eminently a dredging-field. Of the five dredges in operation at the beginning of the year, three were at work at the end of the year. One was dismantled, and one was destroyed by fire.

Round Hill.

The continued dry season had a disastrous effect upon this district, and led to the closing-down of the Smith and Jewett's Gully Gold-mining Claims. The former claim was surrendered, but the property and privileges of the Jewett's Gully Company were acquired by Harrison and party. The Ourawera and Round Hill Gold-mining Companies continued in operation throughout the year. The latter company employed twenty-six men, and won gold to the value of £6,239 13s. 5d. Six ounces of platinum was also recovered. It may be said that there is unlimited gold-bearing ground existing in the Longwood Ranges, but the gradual decrease in the quantity of water available, due to diminishing rainfall, is a drawback to its immediate development. About forty men are employed in these claims when they are in full work.

Orepuki.

The usual number of claimholders continued operations according to water-supply. The most noteworthy feature in the locality is the introduction of plants to treat the beach sands. The system is by hydraulic elevating the material and running the sands over large spreads of tables. A percentage of plantinum is also obtained by the beachcombers.

Preservation Inlet.

Coal Island.—A few parties continue sluicing operations on this island, but the claims are not so productive as in former years.

Gulche's Head Sluicing Claim, Gulche's Head.—At present this is the most important sluicing claim in this locality, but the extent of its operations is limited by a totally inadequate water-supply. The minor scheme in operation at present partakes of the nature of prospecting, while the major or proposed working scheme involves a large outlay to bring in ten heads of water from Lee Stream, a distance of three miles over rough country. The deposit is a large one, and believed to be more than payable with a proper water-supply. Nine men employed.

ACCIDENTS: HYDRAULIC AND ALLUVIAL MINES.

Non-fatal.

18/2/1907: Louis Johnson, nozzleman, Criffel Lead Sluicing Claim, Cardrona, was knocked down by the force of water from the nozzle, and had several ribs broken.

GOLD-DREDGING.

Throughout the year 1906 the total number of dredges in various stages of activity was 161. Ten of these were dismantled, and 151 entered upon the year 1907. One new dredge was brought into the district, making a total of 152 dredges in various stages during the year. Of this number, ten were dismantled or destroyed and four were removed to Victoria, leaving a total of 138 dredges in Otago and Southland at the 31st December, 1907.

Four serious losses were sustained by dredging companies during the year—the Roxburgh Jubilee, Wakatipu and New Alpine Consols dredges, Otago, were wrecked, and the Argyle dredge, Southland, was destroyed by fire.

The installation of electric power in connection with the Earnscleugh No. 5 dredge, Alexandra, and the application of water-power to the Olrig dredge, Alexandra, form the most interesting improvement for the year.

It was expected that the shaking-box would rapidly replace revolving screens. This was not so, and the tendency now is to replace the revolving screen and elevator wherever practicable by the stationary sluice-box.

SUMMARY OF DREDGES IN SOUTHERN MINING DISTRICT AT 31ST DECEMBER, 1907.

Working: In Otago, 72; in Southland, 52: total, 124.
Standing: In Otago, 11; in Southland, nil: total, 11.
Removing: In Otago, 7; in Southland, nil: total, 7.
Dismantled: In Otago, 9; in Southland, 1 total, 10.
Total, 152.
Increase of working dredges: Southland, 2.
Decrease of working dredges: Otago, 14.

Accidents: Gold-dredges.

Fatal.

26/9/1907: Thomas Walker, engineer, Enterprise dredge, Alexandra South, was drowned in the Clutha River by the boat being swamped while going ashore.

26/11/1907: George McLay, dredgemaster, Hartley and Riley dredge, Cromwell, was drowned in the Clutha River by the boat being swamped while going ashore.

Non-fatal.

8/11/1907: William Goodwin, winchman, New Fourteen-mile Beach dredge, below Bald Hill Flat, received severe injuries through the handle of the hand-winch reversing. The left arm was subsequently amputated.

OTHER MINERALS.

Cinnabar.

Upper Nevis.—Prospecting in the high ranges between the watersheds of the Nokomai and Nevis Rivers has revealed the presence of this mineral in lode formation. Good samples have also been obtained from the Carrick Range.

Waitahuna Cinnabar Company.—It is pleasing to report that a small amount of capital has been raised to carry on further development. The best expenditure of this capital would be in driving the level ahead and in rising to the surface.

Cinnabar is of frequent occurrence in the form of grains throughout the alluvial deposits of Otago and Southland.

Auriferous Ironsands.

Although extensive deposits of these sands exist on the south and south-west coasts of New Zealand, they are too low grade to work by any known method unless highly concentrated by the action of certain tides.

At Orepuki two plants were erected during the year to treat these sands. These plants relied upon spread of tables for efficiency. These sands are found at various places on the coast-line south from Oamaru to the Bluff, the chief centres being Kartigi Beach, mouths of Tokomairiro and Clutha Rivers, Fortrose, Waikawa, and Orepuki.

Platinum.

This is found associated with the gold in the black-sand deposits of the sea-beaches, and a small percentage is found in the concentrates from some dredge-washings in the valleys of the Nevis and Clutha Rivers. A quantity—6 oz. for 1907—is saved by the Round Hill Mining Company, Southland, and by the beachcombers on the Orepuki and Waiau beaches.

Copper.

The most energy has been displayed in connection with the copper lode which exists at Wet Jacket Arm, Dusky Sound. Two prospectors, representing an Auckland syndicate, spent several months there recently. They are now returning to the locality with a party of miners, in order to further open up the lode.

No progress has been made in connection with the Reedy Creek or Moke Creek copper lodes.

Antimony.

Alexandra Antimony-mine, Alexandra (Charles Rillstone, manager).—Winding and pumping machinery was erected on No. 1 shaft, and some driving was done along the line of lode. The shaft was also widened out, retimbered, and fitted with a separate compartment for a travelling-way. At No. 2 shaft a quantity of ore was mined. A crosscut drive was started to reach this shaft, but was not completed. These works were all done to open up the lode for the benefit of a Wellington syndicate, which took in hand the flotation of a large company.

Carrick Range Antimony-mine.—A few tons were collected and shipped to smelting-works in Victoria, but the results were not up to expectations, and shipments ceased.

Nevis Bluff Antimony Lode.—Operations on this lode never got beyond the prospecting stage.

Lammerlaw Range Antimony-mine (James McQueen and party).—A pumping plant was erected and the mine unwatered for some distance. The mine was under offer to a Wellington syndicate, and I am informed that operations are to be resumed.

Scheelite.

80 tons are returned as having been produced and exported from the Macrae's and Mount Highlay districts during the year. The only producers in these localities are the Messrs. Donaldson Bros., owners of the Golden Point and New Zealand Gold and Tungsten Mines.

Glenorchy Scheelite Syndicate, Glenorchy (G. Reid, manager).—A considerable quantity of scheelite (57 tons during 1907) has been produced from the scheelite mine at Glenorchy, Head of Lake Wakatipu. This mine has been well opened up, and a battery and concentrating appliances fitted up. As at Macrae's, the scheelite is here found in bunches and stringers through the quartz.

General.—Induced by the success attending the operations of the Glenorchy syndicate, and the high price ruling for this mineral, many areas have been taken up in the Otago District. Few of these, however, have been prospected. Scheelite has been proved to abound in the Macrae's and Mount Highlay districts, and also in the Waipori and Head of Lake Wakatipu districts.

Hæmatite.

No hæmatite was raised from the Mataura deposit, but 20 tons were taken from the deposit at Table Hill, Milton. No progress has been made towards opening up the high-grade deposit at Clyde.

Phosphate Rock.

The Ewing Phosphate Company, Clarendon, Otago, continued to quarry and burn the raw material during the year, and over 5,000 tons of phosphate were produced for treatment at the chemical works at Burnside.

Limestone.

15,345 tons for building and agricultural purposes were produced by the Milburn Lime and Cement Company, Milburn, Otago, during the year.

Considerable quantities of lime were produced at Dunback and Oamaru, in Otago, and at Forest Hill area, Winton, and Ringway, in Southland.

Limestone is of frequent occurrence throughout Otago and Southland.

Marl.

Burnside Hydraulic Lime and Cement Company.—This company purchased a plant formerly in operation at the Wellington and Marlborough Cement, Lime, and Coal Company's works at Picton.

At present the erection of this machinery and the necessary buildings is being gone on with at Burnside, near Dunedin.

From portion of the deposit the Milburn Lime and Cement Company took 4,820 tons during 1907, making a total production of 7,628 tons for three years.

Fireclay.

Used for the manufacture of fireclay goods, bricks, and sanitary pipes. It is of frequent occurrence in connection with the brown-coal measures. The following outputs have been returned: Homebush Colliery, Glentunnel, Canterbury, 122 tons; Springfield Colliery, Springfield, 35 tons; Springfield Fireclay Works, Springfield, 735 tons; Austin's Fireclay Works, Sheffield, 1,073 tons; Benhar Colliery, Stirling, South Otago, 2,500 tons: total, 4,465 tons.

Building-sand.

16,512 tons of building-sand were produced during the year from the coal-measures of the Green Island Coalfield, for use in Dunedin and surrounding districts.

Silver.

Several localities in the Lakes district were prospected during the year. Several specimens of native silver were found in past years.

Manganese.

Neither of the deposits at Waipori or Taieri Beach were worked during the year.

Asbestos.

The deposit which exists at Mount Pisa, in Central Otago, was prospected, and samples taken therefrom on behalf of a syndicate formed to exploit known mineral deposits in Central Otago.

Greenstone.

A visit was made to the mine at Anita Bay, Milford Sound, in November. The mine was deserted, but that portion visited was in a fair state of preservation. Boulders of superior greenstone are found in the neighbourhood of Big Bay and Martin's Bay. They are collected and shipped to market.

I have, &c.,
E. R. Green,
Inspector of Mines.

(*b.*) REPORTS OF WARDENS.

Mr. Warden Bush, Thames, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Thames, 19th February, 1908.

I have the honour to furnish the usual annual report on mining matters within the Hauraki Mining District.

General Remarks.

Although there are so few mines producing gold, yet it is gratifying to report that the production has increased during 1907 from £1,338,395 to £1,421,216. As compared with 1900, this is an increase of £924,496. That portion of the goldfield comprised within the County of Ohinemuri is mainly responsible for this, as the bullion produced by it during the past year was worth £1,241,331, as against £1,079,013 in 1906, being an increase of £162,317. Everything at present points to the yield for the present year being much greater than those of previous years. I think it may fairly be said that at no time in the life of this portion of the field have the prospects looked brighter.

The precious metal referred to was recovered from the following mines: Waihi, £875,000; Talisman Consolidated, £184,447; Waihi Grand Junction, £75,832; New Zealand Crown Mines, £57,236; Komata Reefs, £47,128; Maoriland (at Waitekauri), £846; Auckland, £512; New Waitekauri (at Waitekauri), £265; Scotia, £53; and Durbar, £9. The two latter claims are also at Waitekauri. The great bulk of the population of this portion of the field are dependent on these mines for their livelihood.

The Waihi Extended, the Rising Sun, at Owharoa, and the Waihi Gladstone have so far done nothing to recoup their owners for the sums they have spent upon those properties in the endeavour to turn them into gold-producers. It is anticipated that all these claims will eventually be heard of as furnishing bullion. Great results are expected some day from the Extended, and fairly good prospects have been obtained from the Rising Sun, which just now is looking very promising. The owners of this property have had a long and plucky struggle, which it is to be hoped may shortly be rewarded. Very little is being done upon the properties known as the Consols and the Waihi South. These two properties about a year ago passed into the hands of the Grand Junction Company, the intention being to work them with the Junction properties. The Grand Junction Company has spent about £300,000 upon its mine on development and machinery, and the result so far has been something over £75,000

The Waihi Consolidated are at a standstill, waiting to learn what is to become of an option held by a syndicate in England.

The Pride of Waihi are hanging back, pending the Waihi Extended bottoming their shaft, which may give them some indication as to where they should commence their sinking.

The Waihi Beach Company has been working its ground with a small number of men during the year, but the result of its operations has not proved remunerative.

Besides the mines referred to, there are several other claims on the register which are still looking for foreign capital for development purposes, but so far none has been secured. The history of these latter may be summed up as mostly protected, or occasionally prospected with two men.

Waitekauri.

The glory of this locality departed when the Waitekauri and Golden Cross Companies ceased to obtain gold, which eventually caused them to abandon their holdings. Since then the bulk of the population has been forced to remove elsewhere to find work, and Waitekauri for a time looked very deserted; but during the year the Maorilander, the New Waitekauri, and one or two other pieces of ground from which gold had been secured in the good old days, have been taken up, and received some attention in the way of prospecting and opening up, with the view of ascertaining if some of the precious metal could not be unearthed. The prospects of the Maorilander and New Waitekauri are said to be sufficiently good to warrant a continuation of the search. I trust, therefore, that the next report may contain a reference to a gold return from this locality.

Karangahake.

Considerable excitement was caused in this part of the field owing to a discovery of cinnabar. Several claims were taken up. It was established that the commodity existed to some extent, but the want of means has prevented anything being done to show whether the undertaking can be made remunerative.

The Talisman Consolidated and the Crown Mines Company have been carrying on their operations vigorously. These companies are the main support of this portion of the field, as they employ the bulk of the labour. The latter company is constructing a water-race, to cost £6,000, and their general manager is in England supervising the construction of electrical pumping machinery, which it is intended to erect to enable the management to cope with the increased water difficulty. It is expected that this plant will, in the course of the next few months, have reached New Zealand. As soon as it does, its installation will be undertaken.

The Ohinemuri River Claims have changed hands since the last report. These are claims taken up for the purpose of gathering up the tailings deposited in the river after passing through the batteries of mines. It is contended that these can be treated at a profit, and the new proprietors are about to make the attempt. Should the venture prove remunerative, it will furnish employment to several men. The industry is quite a new one on this field. The previous attempt proved unprofitable, a great deal of money being spent in a treatment plant, which did not turn out suitable for the purpose. The new owners, however, profess to be able to treat the tailings so as to make them profitable.

Te Aroha.

In this portion of the field there are no less than 1,043 acres held under license, but nothing of any importance has resulted. Want of capital and the complex nature of the ores is the cause of this. The Hardy's Mines (Limited), which hold 517 acres, have been very much at a standstill, though last year these properties produced some gold. There is no doubt that there is an abundance of ore in this locality, but it is more or less difficult of treatment; no doubt in time some process will be discovered which will enable its successful treatment, and when that time arrives I have no doubt Te Aroha will prove a gold-producing locality. At the present time I cannot report anything to indicate an early improvement in this respect, but I shall be much surprised if in the years to come this part of the field is not counted amongst the gold-producing portions of it.

THAMES AND COROMANDEL.

The gold produced on that portion of the field situated within these two counties amounted to £179,984, of which the Thames is entitled to £174,665 and Coromandel to £53,190. The Thames County amount was contributed by the following mines: Waiotahi, £149,820; May Queen, £1,998; New May Queen, £1,772; New Maratoto, £864; Kuranui, £839; Victoria, £720; Kirikiri, £675; Silver Stream, £660; New Saxon, £153; May Queen Extended, £157; Kuranui Caledonian, £126; New Moanataiari, £66; New Dart, £13; Trafalgar, £10; Watchman, £6; Tairua Broken Hills, £10,495; Golden Belt, £4,763; Tairua Triumph, £58. And that of Coromandel from the following mines: Royal Oak (by tributers), £2,704; Hauraki Freeholds (by tributers), £600; Old Kapanga (by tributers), £453; Old Hauraki, £100; Royal Oak Company, £80; Old Kapanga Company, £15; Monte Christo, £8; Golden Hill, £8; Sunbeam, Great Barrier Island, £646; Kapowai Gumtown, £464; Waitaia Kuaotuna (by tributers), £126; Waitaia Company, £112.

There are several other claims on the register in both these counties from which no returns have been received, and which are either protected or working with a small number of men with the permission of the Warden. It is rumoured that the Old Kapanga Company are intending to prospect the lower levels, and, if any inducement offers, they will be worked again.

The Ferguson syndicate, which took up several properties over the field, have not yet been able to set to work properly, owing to the plant not yet being erected. It is anticipated when the works are finished, and operations commence, all the complex ores hitherto useless for the want of a process for treatment will be dealt with; and if the present anticipations are realised, there will be nothing to prevent the extraction of the precious metal. Should the company be able to accomplish what they claim, it will prove a great boon to the field.

I have, &c.,
R. S. BUSH, Warden.

Mr. Warden ROBERTS, Tauranga, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Warden's Office, Tauranga, 1st February, 1908.

I have the honour to report, for the information of the Hon. the Minister of Mines, that the mining industry in the Tauranga Subdistrict of the Hauraki Mining District for the year ending 31st December, 1907, has been at a standstill, excepting as regards to prospecting of a private nature, which, however, proved resultless.

I have, &c.,
J. M. ROBERTS, Warden.

Mr. Warden DYER, Auckland, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Magistrate's Office, Auckland, 6th February, 1908.

I have to report that there has been very little change in mining matters during last year in the Puhipuhi Mining District.

During the year twenty-three miners' rights, eight ordinary prospecting licenses, one mineral license, one special quartz claim, and one machine license have been granted.

Prospecting is going on steadily and quietly, and there appears to be no lack of interest in the industry.

The district contains a great variety of minerals, and if any of these minerals were obtained in payable quantities mining activity would soon develop.

I have, &c.,
J. W. DYER, Warden.

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

SIR,— Warden's Office, Nelson, 26th March, 1908.

I have the honour to forward herewith my report for the past year upon the mining district under my administration.

SUBDISTRICT OF COLLINGWOOD.

Parapara Hydraulic Sluicing and Mining Company (Limited).—This company is the holder of three special alluvial claims. Mr. J. Bassett is the manager. During the year this company has been carrying on mining operations on their ground at Appo's Flat, which ground was hitherto unworked by the company, and from which ground I stated in my last report that the company had reason to hope for good returns. This anticipation has been realised. During the early part of the year the company was sluicing away surfacing by free level at Appo's Flat, and though during January and February there was a shortage of water, still by the 24th June last the company had won 254 oz. of gold. On the last-named date the company commenced elevating, which enabled it to reach better wash in the deep ground. From the 24th June to the 19th December the company obtained the handsome return of 733 oz., making 987 oz. for the year, valued at something over £3,700. The company have now a good face of wash to operate on, and will probably continue elevating for several years to come. The wash is highly payable at a depth of about 20 ft. below the surface, where the creek-wash is laid on the white-quartz wash. During the year the company have kept employed an average of eleven men.

Slate River Sluicing Company (Limited).—This company was at the commencement of the year the holder of two special claims, in addition to which it took up an extended claim; but about the middle of the year the company surrendered one of the special claims. During the last six months of the year the ground has been worked on tribute. The tributer, Mr. O'Hara, the previous manager, did

fairly well, employing six men, and obtaining gold valued at £810 4s. 1d.; but the costs of repairs to plant, which were badly needed, deterred the tributers from taking on the risk again at the commencement of the present year. The company, having exhausted its capital, has decided on liquidation.

Quartz Ranges (formerly the Collingwood Goldfields).—This hitherto highly payable sluicing claim is now situated somewhat similarly to those held by the Slate River Company. The tributers, Mr. Diamond and party, who have been operating for some years with satisfactory results, have now to face the problem of heavy expenditure on the extensive fluming which conducts the water-supply from the Boulder Lake, a distance of over four miles, and, in addition to this, the tributers, having just about worked out their present faces, will have to take up new development-work to open up new ground. An average of six men have been employed during the year. I have not been able to ascertain the amount of gold won during the year, but from what I can learn the result has been only ordinary, not much more than paying expenses

Johnston's United, Bedstead.—Prospecting operations have been carried on during the year on this well-known ground, with disappointing results.

Slate River Dredging Company's Old Claims and Dredge.—This dredge, which was purchased by Mr. Grant from the above company when it went into liquidation, was worked for a short time in 1907, until it became buried in the river by heavy floods. The special claim has been surrendered and the dredge abandoned. This is the last of dredging in this district. During the time the dredge was working for Mr. Grant the gold returned was satisfactory.

Taitapu Gold Estates (Limited).—This freehold property, owned by an English company, is managed by Mr. J. Carroll, Mr. L. N. Buchanan being the company's New Zealand attorney. Prospecting operations for gold have been carried on during the year without result. The average number of men employed has been ten; they have been principally engaged in boring for coal. The bore has now reached a depth of 830 ft., and the indications seem good. Six men were kept employed driving on the principal outcrops along the Paturau River. There are a number of these outcrops; the coal is good, and the seams of a fair size.

Golden Blocks, Taitapu (Limited).—This mine has been steadily worked during the past year, under the management of Mr. Giles, and a return of 1,471 oz. of gold was obtained, against 1,202 oz. for the previous year—an increase of 269 oz. There are, on an average, twenty-six men employed in or about this mine.

Mining Operations and General Remarks.—Individual mining has nearly disappeared from this district. There are only a few men now about Rocky, and two or three more about the Slate River. Mr. Kemp has commenced operations at Victoria Terrace, where an extended claim was granted to him during the year. He has also had granted to him a water-race, tail-race, and dam, to be used in connection with his extended claim.

Prospecting.—A good deal of prospecting has been carried on during the year in the Collingwood County and some in the Takaka County. Eight prospecting licenses have been registered during the year, over a total area of 625 acres: two prospecting licenses were in the Upper Anatoki; one at Snows, near the Boulder Lake; two at or near the head Pariwhakaoho River, Parapara Peak; one at the Parapara Mud-flat; one at Lightband's Gully; and one at Toitoi Flat.

Takaka Subdistrict.

Takaka Sluicing Company.—This company, whose property is situated at the Bu-Bu, steadily employs eight men, the work being carried out by eight-hour shifts. No dividends have been paid for twelve months.

Upper Anatoki.—In this locality mining is practically at a standstill. There are only three men working. There is great difficulty in getting to the place, on account of the absence of tracks.

Lower Anatoki.—Three men are prospecting here, but doing no good. Lower down there are three men working as tributers, in a claim on Glover's Flat. I understand that they are doing fairly well.

Waitoi.—There are two old-age pensioners fossicking in the creek, but doing very little; and, in addition to these, there are four old men prospecting and fossicking crevices near the Bu-Bu. Their mode of working is very primitive, and they are doing very little good.

Motueka.

Very little has been done in this subdistrict during the past year, but there seems a prospect of a revival. Three applications have been received for claims on the tablelands of Mount Arthur, and stand adjourned, pending survey. I am informed that other applications in the same locality may be expected.

Whangapeka.

Very little gold has been raised in this subdistrict during the past year, and I regret to say that mining is practically dead.

I am indebted to the Mining Registrar at Collingwood for the following information regarding mining operations in that subdistrict:—

Mineral Prospecting Warrant (held by Mr. Thomas A. Turnbull, at Anakaka).—The following is an extract taken from the two half-yearly reports and declarations filed at this office, as required by the Mining Regulations, clause 19, since the granting of the warrant, which is dated 2nd October, 1906—viz.: During the first six months of the warrant (the prospecting operations were not commenced until 1st January, 1907), men were employed cutting tracks into the bush to various faces of the iron-

ore. The undergrowth has also been cleared, so as to ascertain the width of the faces and values. Trial lines have also been run, so as to see how the ore can be got out. The country is densely covered with bush, and the hills are very steep and rugged. Over £105 was paid in wages during this half-year. During the next six months a sum of £219 5s. was spent in labour alone—cutting tracks and clearing the ore-faces of scrub—and that work done has disclosed ore-bodies not seen or examined or sampled by Dr. Bell or his assistants during their cursory examination of the iron-ore deposits upon the area that the warrant is held over. The iron-ore outcrops have been traced running for a long distance southwards.

Parapara Mineral Lease (*Iron*) (held by the Public Trustee).—As far as I am aware, the conditions of this lease have been complied with, excepting that I did not consider that the full number of men were employed after the 15th August, 1907. This was duly reported by me the same month. The lease was under protection during the early part of the year, but since then prospecting operations were carried on, and a good deal of scrub-clearing and road-making was done. In January, 1908, an application was again made for protection, which the Hon. the Minister of Mines consented to, and protection was granted up to the end of June, 1908—a period of five months and nine days. You will kindly remember that I mentioned to you when you were here last Court day (20th February) that I could supply very little information about this lease. I know nothing of the expenditure whatever. I have more than once asked the agent here for the lessee for returns, as required by clause 8 of the lease, which half-yearly returns were to be made to the Receiver of Gold Revenue at Collingwood, commencing from the 31st day of December, 1906.

The agreement entered into between the iron syndicate to purchase Washbourn Bros.' ground, held by mineral license, has been completed, and the sum of £10,000 has been paid over by the Public Trustee to Washbourn Bros. on the 28th February, 1908. This valuable bit of ground is to be added to the original lease, which will be increased by 56 acres or more.

I have, &c.,
H. Eyre-Kenny, Warden.

Mr. Warden T. Scott Smith, Blenheim, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Blenheim, 30th April, 1908.

In submitting my annual report I have only to state that there is nothing calling for special comment in regard to any class of mining. No fresh discoveries have been made or new ground opened up.

Gold-mining is practically confined to the Wairau Valley Company's operations at Top Valley, although a little prospecting is being done in other localities. In this connection it might be mentioned that a couple of claims at Jackson's Head, which were the scene of operations some years back, but afterwards abandoned, are being given a fresh trial by a party of miners, with what result remains yet to be seen.

Antimony was the cause of some little stir in mining circles in the early part of the year, with the result that a number of mining rights were applied for. These, however, are, I understand, not being worked. During the year seventy-one applications for mining privileges were received in the Warden's office; and the Court sat on thirty-five days.

I have, &c.,
T. Scott Smith, Warden.

Mr. Warden Rawson, Westport, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Westport, 14th April, 1908.

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 the 31st December, 1907:—

Westport.

There were granted seven alluvial claims, and five quartz claims, as compared with six alluvial and five quartz claims for the year 1906.

There are no dredging claims at work at present.

The principal form of mining is alluvial.

At Addison's about thirty-five miners are kept steadily employed.

The past year has been a very good one, the claims getting very payable returns.

Along the various beaches it is estimated there are twenty beachcombers at work, and they are all averaging fair returns.

A few sluicing claims have been working steadily at Fairdown.

At Giles's Creek a party of sluicers have had a very successful year.

At Waimangaroa trouble has been experienced from the wet nature of the ground. An appliance for pumping, driven by an oil-engine, has been worked with success, and resulted in several fresh claims being taken up.

A few miners are working at German Gully.

Two quartz claims have been working steadily during the year—the Red Queen, about ten miles north of Mokihinui, and the Britannia, between Birchfield and Waimangaroa. The Red Queen has been worked on tribute. Both claims have kept thirteen miners employed.

KARAMEA.

At Karamea mining has been very quiet. Twenty-two applications for special quartz claims at Mount Radiant have been lodged, and have been pending several months awaiting survey. About twenty prospecting areas have been taken up in the same locality.

Efforts are being made to float a large company to work this field.

LYELL AND MURCHISON SUBDISTRICT.

Sixty-four licenses for various mining privileges were issued during the year.

Early in the year the Alpine Mine was refloated, under the name of "The New Alpine Gold-mining Company (Limited)." Fifty-three men were employed in this mine for a part of the year. A large amount of development has been done, and repairs to tramways and batteries effected. Several rich patches of stone were struck, raising hopes that the mine would again turn out a good dividend-paying venture, but, unfortunately, these rich patches "pinched out." The management, however, is still hopeful of success. The battery has been put into a state of repair, and has commenced to work two shifts. The successful floating of this mine had the effect of causing speculators to take up a number of claims in the vicinity and at New Creek, none of which have been worked excepting Harrison and party's, known as the Victory Syndicate.

Alluvial mining is still carried on by small parties, who appear to be making a fair living.

Kane and party and Fairhall and party still continue sluicing at Newton Flat.

Mr. V. T. Macnamara has secured the lease of the Kohikohi ground and water-race, and after a large amount of "dead" work has at last come to where very rich ground is expected.

The House Terrace Company has gone into liquidation, and sold out to Beilby and party, who continue to work two shifts. The Walker Maruia Company has finished the water-races, and as many as twelve men have been employed at a time during the year.

Dredging has ceased in the Murchison district, and the three dredges are lying idle.

In the Lyell district the New Feddersen has gone into liquidation.

Smeaton's Dredging Syndicate's dredge has been working good ground, and the syndicate has just taken up a lease of 73 acres.

Hansen and Gillstron's dredge at Burlin's is in good repair, and has been working steadily during the year in payable ground.

De Filippi's dredge has also been working steadily on payable ground. Mr. De Filippi has sold the dredge to a Greymouth syndicate, which, after repairing it, intend to shift it further up the Buller to a spot opposite Flax-bush Creek.

CHARLESTON.

A considerable number of minor mining privileges, such as water-races, tail-races, dams, &c., were surrendered during the year.

J. M. Powell is still working two extended and one special beach claim with three shifts, with, I believe, good results.

The other small beach claims are working broken time.

Lavery and Butterworth opened their claim on Constant Bay during the year, and are doing very well indeed.

The cement-crushing claims have not done so well as in previous years, owing to the long spell of dry weather which prevailed during the latter part of the year.

Norris Bros. have worked out their claim at Darkie's.

Rayner and party are still doing well at their claim in Weir's Gully. The quantity of gold sold at Christmas time compared rather favourably with that sold the previous year.

I have, &c.,
E. RAWSON, Warden.

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

SIR,— Greymouth, 8th May, 1908.

I regret to inform you that, having only quite recently been appointed to this district, I have no personal knowledge upon which I can base a report, not yet having visited the mines.

You will appreciate how futile it would be, and how misleading to your Department, if I submitted a detail report under these circumstances.

I have, &c.,
R. H. TURTON, Warden.

Mr. Warden ACHESON, Westland, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Hokitika, 29th April, 1908.

I have the honour to report as follows concerning mining operations in the Westland District for the year 1907:—

KUMARA DISTRICT.

Sluicing.—Very little alteration in alluvial mining took place. Including Maori Point, Hayes Terrace, Westbrook, and Cape Terrace, this district has not employed more than thirty-four associations and persons. The returns have been slightly better than those of the previous year. The Kumara Long Tunnel Gold-mining Company bought the adjoining claim, owned by Cullen and party, and now has the sole use of the No. 4 Sludge-channel. The money paid for the claim was portion of the profits

of the company. The extension of No. 3 Sludge-channel was completed by the Government, in accordance with the request of the various miners interested. The prospecting operations carried out by the Department on the south side of the Teremakau River were not successful, but those on the north side proved most encouraging. Several new claims were marked out at Cape Terrace, Westbrook, and Hayes Terrace, and, together with the older claims, yielded satisfactory returns. Mr. Frank Reed, the Inspecting Engineer of Mines, paid a visit to this locality to report upon the local agitation for a supply of water by the Government, and the result of his visit is anxiously awaited by the old-time miners, who predict that if such were available for sluicing operations on the north side of this river the ancient glories of Kumara would be revived.

Dredging.—Two dredges were worked in the Greenstone Creek. One has been giving fair returns with regularity; the other, the New Greenstone, which was purchased by a local syndicate on the liquidation of the company previously owning it, struck payable gold at the end of the year, and more than once yielded over 40 oz. of gold for the week's work.

General.—Eighty-one applications were dealt with in the Warden's Court, and 162 miners' rights issued. The total revenue collected in cash and stamps reached the rather surprising sum of £1,176.

Stafford and Goldsborough Subdistricts.

Sluicing.—The area of new ground applied for about equalled that absolutely surrendered. Most of the claims worked steadily, and the returns were about the same as for the previous year. Messrs. Pimpernell and party applied to the Mines Department for a subsidy towards the construction of a branch water-race from the Government race at Tunnel Terrace to their claim at German Gully. A favourable answer was returned, and this year will see the water on the ground. Several fresh claims will then doubtless be taken up and worked if the supply of water should be sufficient.

Dredging.—The only dredge at work in this district was that owned by the Stafford Gold-dredging Company. The returns were not made public, but I understand the result of the year's operations was satisfactory.

General.—Ninety-two applications were dealt with by the Warden, being an increase of twenty-three on the previous year.

Ross Subdistrict.

Sluicing.—The Mont d'Or Company declared regular dividends, and the returns from this apparently inexhaustible claim even exceeded those of the previous year. A company which proposed to use electrical power for pumping and drainage purposes, and to transmit the same from Lake Kanieri, was formed to work the Ross Flat with the assistance of a Government subsidy. Preliminary operations were commenced, and much is expected during the present year from it, as those connected with the company have given every proof of their intention to go through with the undertaking with all possible desp tch. Several alluvial claims were taken up, and several prospecting licenses for the maximum area were granted. A few miners were employed sluicing on their own account when water was available, but their number was very small and their work of a spasmodic nature.

Dredging.—One dredge worked in this district, and the returns from it were, I believe, satisfactory to those interested.

Quartz-mining.—Osmers and party operated a claim in Donnelly's Creek late in the year, and the first crushing yielded about 2 oz. to the ton. A syndicate of Wellington investors took up an old claim at Cedar Creek, and the results of a trial crushing were said to be very good. It was intended, I believe, to float a company to acquire the syndicate's rights, but up to the end of the year that had not been done.

Okarito Subdistrict.

There is nothing to report concerning this district. As stated in my last, sawmilling and flax-milling have practically superseded mining for gold in this locality.

Hokitika Subdistrict.

Sluicing.—The gold returns were about the same as for the year 1906. A few claims were taken up at Governor's Terrace, Rimu, in anticipation of the construction of a drainage tunnel which would enable them to be worked. The Government subsidised this tunnel, and a good deal of work was done in connection with it. In my next report I hope to be able to acquaint you with its completion, and with a marked increase in the gold-production from this locality in consequence. An association of local residents, mostly prominent business men, acting under the advice of a mining engineer of large experience, formulated a plan to convey water after pumping same from the Hokitika River by means of electrical power generated from the Toaroha Falls, to a large area of ground on the south side of the said river.

Dredging.—A dredge owned by a private individual worked continuously during the year at Woodstock. I have no means of ascertaining what gold was obtained.

Quartz-mining.—The Wilberforce Reefs remained *in statu quo*. Very little, if any, prospecting was done, and the attempt to float a company to work the Wilson's Reward Claim was unsuccessful.

I have, &c.,

R. Acheson, Warden.

Mr. Warden McEnnis, Naseby, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Naseby, 24th March, 1908.

I have the honour to inform you that no new ground has been opened up for mining operations, and nothing has transpired in mining matters worthy of being brought to your notice. I have no special remarks to make on mining in the Mount Ida District during the year.

I have, &c.,
J. McEnnis, Warden.

Mr. Warden Kenrick, Lawrence, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Lawrence, 10th April, 1908.

I have the honour to forward herewith my annual report for the several subdivisions of the mining district under my charge for the year ended the 31st December, 1907:—

Wetherstone and Bluespur.

In Wetherstone three claims are still working—viz., The Golden Rise Mining Party, the Golden Crescent Sluicing Company (Limited), and the Happy Valley Sluicing Company, but the dry season has greatly retarded the work, and nothing like full time has been worked.

The manager (Mr. J. Howard Jackson) of the Bluespur 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 the Bluespur: Average number of men employed, 28; quantity of cement treated, 131,656 cubic yards; gold won, 921 oz.; cost of winning gold, £3 16s. 4d. per ounce; amount paid in wages, £2,681 5s. 5d.; amount paid for explosives, £117 2s. 10d.; amount paid for upkeep of races, £638. To illustrate the calamitous effect of the past two years' drought, the manager has supplied figures which show a diminished water-supply, owing entirely to the drought, of 2,498 sluicing-hours as compared to previous years.

In Munro's Gully the following claims are still being worked—viz., J. Kitto and party, P. P. Thomas and party, and E. Browne and party. The latter party have just completed the construction of a large storage-dam at the head of the Tuapeka Bush, on Lambing Flat, which will be a great benefit in dry seasons.

Tuapeka Flat.

The only claim in actual work in this locality is the Tamaiti Gold-mining Company (Limited), but a dam and three claims have been granted lower down, and the parties are endeavouring to form companies, so as to work the ground under the same system as the Tamaiti Company.

Waitahuna District.

A new venture has been started in this locality by Mr. Frank Whelan, mine-manager, of Waitahuna, and a company formed to carry on hydraulic sluicing under the style of "The Havelock Sluicing Company (Limited)." Several special claims have been taken over from Mr. Whelan, also the right for a water-race from the Waitahuna River for fifteen heads of water. The construction of the race is now being carried on by the company, the estimated cost being about £3,000.

Dredging has now ceased in this locality, the claims being worked out; and mining operations are confined to sluicing, the principal claims being as follows: The Waitahuna Sluicing Company (Limited), the Sailors' Gully Mining Company (Limited), William Thomson and party, Joseph Ferris, and Quilter and party.

Gore and Surrounding Districts.

The mining operations carried on in this subdistrict are entirely confined to dredging, and during the year thirty-one dredges in all have been at work. The principal locality is Waikaka, where twenty dredges have been operating. This field is a very busy one, and good results are obtained by many of the dredges. The ground being worked is in nearly every instance freehold land. The other localities where dredges are working are as follows: Charlton, six dredges; Mataura River, two dredges; and Waimumu, three dredges.

Waikaia.

The mining industry in this subdistrict is still in a very healthy and prosperous condition. During the year eighteen dredges have been at work, some of them getting excellent returns. Two new dredges are being built, and will be ready to start operations shortly, in ground that has already been prospected.

The sluicing claims did not have a very prosperous year, on account of the shortage of water, caused by the continuous drought throughout the district.

The Muddy Terrace Sluicing Company have shown very great enterprise, and have gone to considerable expense in constructing a large water-race from East Dome Creek to carry forty heads of water to work the Muddy Terraces.

It is estimated on good authority that about 60,000 pounds' worth of gold has been won in this subdistrict during the year.

The Nokomai Hydraulic Sluicing Company (Limited) (at the Nokomai) has two hydraulic plants at work, and the returns are said to be very satisfactory.

Waipori.

The fleet of dredges in this locality has gradually diminished, and is now reduced to four—viz.: The Jutland Hydraulic Company, the Waipori Consolidated Gold Dredges, the New Empire, and William Wilson and party. During the year Messrs. Knight Bros. have opened up a new sluicing claim, at considerable expense, on account of a long pipe-line leading to the claim, but with a reasonable supply of water they have every confidence that the venture will turn out a success.

The other sluicing claims in this subdistrict have not had a very profitable year, on account of the continuous drought, and consequent shortage of water.

Tapanui.

Nothing new to report in this locality. Only one dredge working (a private concern) on Ardmore Estate, employing eight men.

I have, &c.,
W. G. R. Kenrick, Warden.

Mr. Warden Burgess, Queenstown, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Queenstown, 13th April, 1908.

I have the honour to forward herewith my report for the portion of the Otago Mining District under my charge for the year ended 31st December, 1907.

There is little change to report with respect to the position of mining in this portion of the district.

Dredging still continues the principal form of the industry. I am sorry to say, however, that the results, though in some instances extremely satisfactory, have not on the whole maintained the standard of former years. For a part of the year the river was unfavourable for dredging, and much time was lost to the dredges in consequence. In some instances dredges have been working on the same stretch of the river for several years, redredging ground already worked, with consequently decreasing returns. The dredging claims in the river gorges have not added materially to the year's product. It is only for a short period in each year that the river is in a favourable condition for the prosecution of dredging operations. That there are rich deposits of gold in the river in some of the gorge claims is proved by the occasionally excellent returns that are secured when the dredges are in the fortunate position of being able to work. In the gorge between Cromwell and Clyde dredging has almost ceased, the Hartley and Riley dredge being at present the only survivor of the many dredges built and launched upon this portion of the river. The Monte Christo dredge, lately at work in the gorge above Clyde, is being moved up the river to the Alpine Consols Claim, and will shortly recommence operations on that claim. In the gorge between Alexandra and Roxburgh there are still five dredges properly equipped and ready to work, but their entire operations for the year only cover a few months.

The number of dredges throughout the district is year by year decreasing. This result was, of course, to be expected, for the gold deposits in the river are not inexhaustible; but the decrease has come more rapidly than, looking ahead a few years ago, I would have anticipated. There are at present only two dredges at work on the whole of the Kawarau River—viz., the two belonging to the Electric Company. One dredge, formerly the Junction Electric, now the property of a private company, is successfully working at the junction of the Kawarau and Clutha Rivers in the high bank known as Cornish Point. There are seven dredges at work on the Clutha River above Cromwell—three of these are large dredges, two belonging to the Rise and Shine Company and one to the Rising Sun Company. These dredges are being worked for good returns, and have many years' profitable work before them. The remainder have met with moderate success, but on the whole the confident hope I expressed a few years ago as to the future success of dredging in the Upper Clutha has not so far been realised. Notwithstanding this, however, I believe that with larger and more powerful dredges this part of the river could be made to yield remunerative returns for many years. On the river between Clyde and Alexandra operations have been carried on by a number of dredges with great regularity. A feature of the dredging in this locality is the large amount of work done on the banks of the river. On the western side particularly the bank has been dredged into for some distance from the river-bed, and enormous heaps of tailings lie along the side of the stream, bearing witness to the large amount of work done by these dredges. The Earnscleugh No. 3 dredge has been very successfully engaged for the past few years entirely on the flat land near the river. Water for floating the dredge is supplied by water-races. The proprietors have lately acquired the Fraser River Company's dredge—a very large dredge built by that company, but never used. It is proposed by the owners to work a further extent of the Earnscleugh flat in the same manner as they have done on the Earnscleugh No. 3 Claim. If dredging on this flat continues to prove successful, there is every prospect of the industry enduring in this locality for a long time to come, for years after the treasure now lying in the river-bed has been exhausted employment will be found for the dredges on the immense flat that lies between the western bank of the river and the mountains. A very large portion of this land consists almost entirely of gravel, and in this instance no complaint could arise that valuable agricultural or pastoral land is being destroyed for the sake of the gold it contains.

At Roxburgh five dredges are working for remunerative returns, and at Miller's Flat dredging still maintains in a remarkable way the success which has attended it in this locality for years past.

One dredge is working in the Cardrona Valley, and is paying dividends to the owners—a private company.

At the Nevis dredging is still carried on with great vigour, and some of the dredges have paid handsomely. Working in this district is impossible during the winter owing to the frost, and the dredges are in consequence closed down generally from May to August.

Alluvial Mining.

Alluvial mining is still carried on in many portions of the district, mostly by small parties of men working claims of limited area; and, though none of these claims yield large quantities of gold, they afford a means of livelihood to their owners. The principal alluvial mining is carried on in the Shotover River, near Queenstown; at Bannockburn, near Cromwell; and at Roxburgh. The alluvial ground on the Shotover River has been worked now for over forty-five years, and the yield of gold from this locality still supports a number of miners and their families. Much enterprise and perseverance is displayed by these men in the prosecution of their work, and they richly deserve any success they meet with. The only other alluvial mining near Queenstown is carried on at the Seven-mile Creek, near the shore of Lake Wakatipu, and by Messrs. Reid Bros. at the Twelve-mile Creek. Small parties of miners are at work near Lowburn, a short distance from Cromwell, and on the terraces on the opposite side of the river. Attention has lately been directed to the auriferous lands near Luggate, about thirty miles from Cromwell, and also to a place known as Fatboys, on the Criffel Range, near Lake Wanaka, where many years ago very rich gold was found. Work has only recently been begun in these places, and it is too soon yet to form an opinion as to the future success of the undertakings. At Cardrona the Criffel Lead Company are proceeding with the working of their large alluvial claim on the side of the mountain. They have a good supply of water and a complete plant, and employ a large number of men. So far, however, the result of their operations has proved disappointing. On the opposite side of the Cardrona River, at Branch Creek, a large area has lately been taken up as a hydraulic-sluicing claim. Water-races have been constructed, and piping laid down to carry the water to the claim, and in a short time operations will be started. At Arrow the only alluvial mining worthy of mention has been done by the Arrow River Hydraulic Mining Company on the claim lately the property of the Arrow Falls Company. Work has been vigorously pushed on, and some remarkably good returns have been obtained.

The claims taken up some time ago at the foot of the Galloway Range—not far from Alexandra—in the expectation of the owners being able to obtain water to work their claims from the Government (Bonanza) race, have been able to do scarcely any work, owing to the shortness of water. The last two seasons have been exceptionally dry, and water throughout the whole district has fallen much below the average quantity.

Quartz-mining.

I am sorry I cannot record any great advance in quartz-mining in the district, though I am pleased to say some attention has been paid during the past year to the quartz lodes on the Old Man Range and on the Carrick Ranges. Quartz-mines have been worked on both these ranges from time to time for many years, and, particularly on the Carrick Range, claims were profitably worked. For a long while, however, interest in quartz-mining has declined, largely on account of public attention being so strongly directed to the success of dredge-mining. There are at present indications that attention is being again turned to the quartz reefs of the district, and I hope next year to be able to report some discovery of importance in this direction. There is also a probability that some of the quartz lodes at Bendigo—once famous for their large yields of gold—will be reworked. Near Queenstown the Achilles Mine, at Bullendale, on the Shotover River, owned by the Mount Aurum Company, has for the present ceased operations. At Macetown, however, near the Arrow River, several small claims have been taken up by parties of working miners. I am glad, as a matter of interest to the whole district, to be able to say that the old Tipperary Mine, now owned by Mr. Farrell, is once more, after a long interval of idleness, at work. A company has recently been formed in London to acquire the property, and the necessary capital has been subscribed for developing the mine. So far energetic work is being carried on by a limited number of men; but when the mine is opened out, and more men can be employed, development will proceed more rapidly, and no doubt during the coming year the stamper mill, long unused, will once more be fully employed crushing the ore from this mine.

Scheelite.

During the past year considerable attention has been directed to the deposits of scheelite on the ranges at the head of Lake Wakatipu. A number of prospecting licenses and a few mineral licenses have been granted, the object of the owners being to prospect for and test the supposed scheelite lodes of the locality. The success of the operations carried on by Messrs. Reid and party on their mineral license has aroused interest in this mineral.

During the past year this party, the proprietors of the pioneer scheelite-mine at Wakatipu, have carried on very profitable work. The ore, after it comes from the mine, is crushed and concentrated at their crushing-mill, and the concentrates obtained are shipped to England or Germany—principally to the latter country. A ready sale is always obtainable, and during last year prices rose as high as £180 per ton of the concentrated ore, but have now declined to £70 or £80. It takes about 25 tons of the ore from the lode to produce 1 ton of the concentrates shipped to Europe. There is no reason to fear any decrease in the output of the mine during the coming year, and everything points to a very prosperous future for the owners of this property.

Antimony.

During last year a license was granted to Messrs. McQueen and party for an area of 200 acres, including within its boundaries the antimony lode known for some years to exist in the vicinity of Alexandra. A good deal of prospecting on the lode was done, and the owners are satisfied that they possess a property worth developing. Steps are being taken to form a company and secure the necessary capital to open up and develop the mine. So far nothing beyond prospecting has been done.

Several prospecting licenses were granted in the same vicinity to parties who intend to prospect the country in the endeavour to discover further lodes of this mineral. Up to the present time no fresh discoveries have been reported.

I have, &c.,
F. J. Burgess, Warden.

Mr. Warden McCarthy, Invercargill, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Invercargill, 31st March, 1908.

I submit herewith my annual report for that part of the Otago Mining District under my care.

Wyndham.

The mining in this district during the year has been merely nominal, as only two persons can be said to be making a living out of it. A few others occasionally engage themselves in mining when nothing better presents itself. The operations are all confined to alluvial mining on the beaches or on the sand-hills adjacent to the beach between Fortrose and Waikawa.

Round Hill.

Individual mining in this district is gradually becoming an industry of the past, and the operations are now chiefly confined to the Round Hill and Ourawera Companies. Two companies—viz., the Smith Gold-mining Company and the Jewett's Gully Gold-mining Company—went into liquidation during the year. Some of the ground formerly worked by the Jewett's Gully Company has been taken up by Messrs. Harrison, Jones, and Petchell, who intend to recommence operations on a smaller scale.

Round Hill Mining Company.—It has been a great struggle for this company to return something to the shareholders, who have invested money in starting and keeping the workings going. On account of the loss of fall for *débris* and tailings the company's ground became more and more difficult to treat, and it was found necessary to use up the profits in developing the water-supply and hydraulic machinery to carry on the works. The main pipe-line extends for a distance of twenty-six miles, and the upkeep of this and of the reservoirs connected therewith entails considerable expense, and it is on this account, as well as on account of the scarcity of rain, that the past year has not been so profitable to the company.

Ourawera Gold-mining Company.—This company also experienced difficulties which caused an unprofitable year. Owing to the exceptionally dry weather, less ground has been worked than usual, and most of it was high reef bottom with shallow wash. As a consequence, only 430 oz. of gold, valued at £1,774, was won during the year, while the expenses for the same period amounted to £2,560.

Orepuki.

In this district the operations by the individual miner have been going on as usual, and payable results are being obtained in most cases. The Tewaewae Gold-mining Company have been engaging in hydraulic sluicing on the sea-beach. Adjoining this company's claim is that of Messrs. Mouat and Cassells, but work could not be commenced in their claim owing to the extreme difficulty experienced in obtaining water. The Chun Wah Tong Company, at Taunoa Flat, have ceased operations for the present.

Preservation.

There appears to be much increased activity shown in connection with the mining industry in this district, and numerous grants of water have been made for the development of the work.

The Gulches Head Sluicing Company hold a claim of 90 acres at Gulches Head. Construction-work in connection therewith was commenced in July last, the object being to conserve the water available there and to put on a prospecting plant. A dam has been raised to a height of about 15 ft. and about 2 chains wide, from which a race has been cut to the penstock situated in a position to command the whole claim, and a line of pipes has been laid on to the claim, with the necessary bends, nozzles, boxes, &c., to constitute a small ground-sluicing plant. Unfortunately, since the plant has been ready for work the rainfall has been very slight, and the company has been only able to do sixty hours' work in opening out. Sufficient work has, however, been done to prove that the claim is a valuable one. Notwithstanding the fact that the bottom has not been reached, the gold saved out of the overburden and prospects taken out of the face point to a good future for the claim, and should give the company confidence in bringing in the larger and permanent supply of water.

The Crown Gold-mining Company hold a claim of 90 acres, upon which ten men are employed driving. The lower drive is in 254 ft., but the main reef has not yet been struck. The machinery consists of a five-head-stamper battery driven by water-power and Pelton wheel, and the workings are in first-class order. As soon as there is sufficient water-power, crushing will be commenced on the claim.

The Morning Star Company hold a claim of 97 acres at Te Oneroa. Work has been retarded during the year on account of the want of men. From 12s. to 16s. per day has been offered, but the men cannot be obtained.

I have, &c.,
S. E. McCarthy, Warden.

(c.) REPORTS OF DIRECTORS OF SCHOOLS OF MINES.

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

SIR,— School of Mines, Waihi, 6th March, 1908.

I have the honour to submit my annual report on the work of the Waihi School of Mines during the year 1907.

ATTENDANCE.

The attendance showed a slight increase over that of the previous year, there being an average of sixty-eight students, with a class attendance of 184.

EXAMINATIONS.

At the annual examinations twenty-seven individual students presented themselves for the practical and written examinations. This number would probably have been greater but for the fact that the examinations were held so late in the year, making it difficult for students to get the necessary leave. In the case of mining students it generally means losing a shift each time they sit, so that it is not to be wondered at that they do not come forward in larger numbers. Those who did sit were on the whole very successful. Altogether fifty-eight papers were sent in for the written examination, with the result that eighteen first-class, and twenty-one second-class, and eleven third-class certificates were obtained. In eleven subjects the marks gained by Waihi students were the highest in the Dominion. In the practical examinations there were twenty-three candidates, of whom sixteen passed, while five gained the bullion-assayer's certificate, issued by the Customs Department—namely, R. J. Morgan, H. Cramer-Roberts, E. Johnson, P. Melrose, and J. S. Langford.

Mr. J. Livesey's gold medal for the highest aggregate in mining subjects was won by Adolf Katz; Mr. M. F. Haszard's gold medal, for surveying, by R. J. Morgan; and Mr. T. Gilmour's gold medal, for the highest aggregate in any four subjects, by G. Mackie. Prizes, consisting of valuable text-books, drawing-instruments, &c., are also offered in various subjects owing to the generosity of the Waihi Engine-drivers' Association and the School of Mines Council. I have great pleasure in stating that, in addition to the above, another gold medal will be offered for competition by Mr. C. L. Clarke for the student obtaining the highest marks in mechanical drawing at the December examinations.

At the Government examinations held in January last year, two candidates from the school obtained battery-superintendent's certificates, while three others obtained partial passes, failing in one subject only. The results for the present year are not to hand. Altogether twenty-three students of this school have obtained certificates as first-class metal-mine managers, two as coal-mine managers, eleven as bullion-assayers, and thirty-seven as battery-superintendents.

GENERAL.

During the year 123 assays were made for the public, a considerable proportion being made free of charge for prospectors.

The reference library has been further enlarged by the addition from time to time of a number of up-to-date and standard works. The geological collection has also been largely increased by donations of specimens from Mrs. Darby, the Geological Survey, Messrs. P. G. Morgan, M.A., Boyd Bennie, Max D. King, Beckett, and others, whom I take this opportunity of thanking. A large case of over 130 specimens of American and West Indian rocks and ores has also just come to hand in exchange for a collection of rocks from the Waihi district forwarded some time ago.

In July Mr. Fairfield, Instructor in Electrical Engineering, resigned in order to take up the position of Assistant Electrical Engineer to the Auckland City Council. From that date till the end of the year the class was ably conducted by Mr. W. Oates.

Through the kindness of the Hon. the Minister of Mines, who made a special grant of £40 for the purpose, the school will shortly be in possession of a modern science lantern and accessories, which will be of great assistance in illustrating the lectures.

In conclusion, I wish to express my appreciation of the zeal displayed by Mr. F. T. Seelye, A.O.S.M., assistant lecturer, and Mr. R. H. Mitchell, drawing-master, who carried out the work of their respective departments with great ability and success. I take this opportunity also of conveying my sincere thanks to the Council and the Secretary for their unfailing support and assistance during the year.

I have, &c.,

A. H. V. MORGAN, M.A., Director.

Mr. R. R. LLOYD, Secretary to the Karangahake School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Karangahake, 4th March, 1908.

It affords the Council great pleasure to present this, the ninth, annual report on the work done and the results obtained by the Karangahake School and Waikino School for the year ending 31st December, 1907.

ATTENDANCE.

The attendance for the year has remained about the same as the previous year. The average attendance per term was forty-one, taking an average of eighty-two classes, or two classes per student,

Examinations.

At the annual examinations for mine and battery managers, held in January, 1907, two students sat for mine-managers, and both failed. One sat to complete as battery-manager and passed, having secured a partial pass the previous year. At the class examinations held in December last, fourteen students presented themselves, obtaining the following certificates: ten first, thirteen second, and thirteen third. In the practical examinations thirteen first-class certificates were obtained at Karangahake and two at Waikino. Three students also qualified for Customs certificates as bullion-assayers. The gold medal so generously donated by the President, Mr. C. H. Tresize, for the highest aggregate in four subjects was won by C. A. McCombie, who obtained an average of 70·4 per cent. in four subjects; W. Smith was second with 68·75 per cent. in four subjects. This scholar headed the list in these four subjects for the whole of the northern schools.

Electrical Class.

This class has not been at all satisfactory during the year, owing to it being without an instructor for a great portion of the time, but with the installation of the dynamo, storage batteries, and additional apparatus, together with the services of Mr. H. Dodson, late of Ramsgate College and Hiram Maxim Laboratory, there is no doubt that the class will prove a success this year.

Additions, etc.

During the year a dynamo and petrol-engine were imported from England, the installation of which is nearing completion. A 15-in. Y level and staff were imported from Messrs. W. and E. Gurley, New York. This is a splendid instrument, and will be a great boon to the surveying class, as also will the prismatic compass and Abney level procured for the same class.

The Hon. the Minister of Mines granted a subsidy of £2 to £1 up to an expenditure of £150 to procure the above, together with other appliances required for the schools.

There were also a number of useful works added to the library.

Branch School at Waikino.

This was opened in the new building at the beginning of the year, and the attendance has certainly warranted this step. The classes have been under the control of Mr. Gibson, A.O.S.M., for the last six months.

School Scholarship.

No student qualified for this during the year.

Auckland School.

The Council view with pleasure the proposed erection of a mining school in connection with the Auckland University, and hope that some satisfactory arrangement will be arrived at whereby students from the goldfield schools can pursue their studies and take a degree without having to study dead languages.

Financial.

The statement of accounts shows the total receipts for the year to have been £875 0s. 2d., whilst the expenditure was £834 1s. 10d., leaving a credit balance of £40 18s. 4d.

Thanks.

The Council desires to thank the Hon. James McGowan, Minister of Mines, for his liberal assistance during the year; the Ohinemuri County Council and others, for donations; Mr. T. E. Ballard, for honorary services in auditing the books of the institution; and Mr. C. Banks, for conducting the drawing classes at Waikino.

General.

The Council wish to put on record the appreciation of the work done by the Director and assistant during the year, and also to thank those gentlemen whose donations from year to year have helped the school to its present forward position.

I have, &c.,
R. R. Lloyd, Secretary.

Mr. A. Bruce, Secretary to the Thames School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Thames, 20th February, 1908.

It is with much pleasure that the Council present to you the twenty-second annual report of this school of mines. The attendance at the school during the year was as follows:—

	First Term.	Second Term.	Third Term.
Registered students	62	67	45
Saturday science class	20	28	16
	82	95	61

The class attendances were 93, 101, and 80 in the respective terms.

The annual Government examinations were held in December last, as usual, and the Council regret to have to say that the results were the most unsatisfactory that they have ever had to report, and if the results had occurred during a period when the staff had been continuously engaged at the school for a few years, the Council would have considered that the time had fully arrived to make a change. This not being the case, the Council fully recognise by the examinations that the studies of the students and the school have suffered by the teaching being thrown out of the ordinary routine by changes in the head of the staff, in one instance, and the unfortunate illness of Mr. Given, the assistant director, in the second term. It will, of course, be understood by you from what follows that the school and the students were considerably handicapped during the first term through the then Director, Mr. Gore Adams, retiring. The school work was carried on by Mr. Given alone for about three months, Mr. Baker taking up his duties at the latter end of June. The set-back the school incurred during the year 1906 and during the first term of 1907, and the understaffing during most of the second term, and Mr. Given's illness during the third term, had a most prejudicial effect. However, this year the Council are hopeful of great progress being made, and the school brought back to something like its old standard. To do this the Director and his assistants require to be most zealous, and determine to bring their students along to the topmost rung of the ladder.

As outlined in the report of last year, a change has been made in the manner of arranging the President's and other medals. In the case of the former, a number of subjects have been made compulsory to be taken up, with a minimum number of marks. In the latter it has been decided that the medals will only be awarded to the student gaining the highest number of marks in the first-class division. Mr. Denby has again donated medals for geology and chemistry respectively, but the Council have made no award. This is also the position of the president's medal. The only prizes to be presented this year are in connection with the elementary-science class, the first prize being awarded to Olive Wylie for being dux of the class, and to Olive Wylie, Annie Wylie, L. H. Lowe, and M. Grigg for attendance.

In the electricity class only one student entered for examination. This, however, was to be expected, as the instructor (Mr. Fairfield) having resigned, and no fresh instructor being appointed, the students were practically without an instructor for several months. However, the Hon. the Minister of Mines has approved of a new instructor, Mr. Dodson, who will have charge of the classes at Thames, Karangahake, Waihi, and Waikino.

The experimental plant has not been used much during the past year, and with the object of bringing it more up to date the Council interviewed the Hon. the Minister of Mines, who granted the sum of £1,000 for the purpose. The Director and Secretary prepared a report on the subject of the proposed alteration, and, after inspecting and inquiring into the most up-to-date methods of bullion-saving appliances, they submitted their report to the Council. By the kindness of the general manager of the Waihi Gold-mining Company the services of one of the company's designers and draughtsmen were placed at the disposal of the Council. As soon as the Hon. the Minister of Mines approves of the plans, tenders will be invited and the work pushed on with despatch.

In the 1907 report of the Council the strenuous efforts of University Schools of Mines to bring about a change by way of lessening the time required for practical experience before a mine-manager's certificate could be obtained was fully gone into, and, as anticipated, the Auckland University has joined with the Otago University towards getting the time reduced. The former considers three years' work underground as sufficient for University School of Mines students, and the latter three years to be encompassed by the first year as a working miner, the second as an under-boss, and the third year as a surveyor. The University Senate has passed a resolution to recommend the Minister of Mines to reduce the term required from five years to three years for University students, the argument used being that an educated man can acquire the necessary knowledge much quicker than one of a limited education. The Council, after years of experience in a mining district, have no hesitation in saying that the argument as applied to practical mining is fallacious, and that the University man with limited practical experience is an expensive experiment for any company to try, and his want of practical experience makes it dangerous to the life and limbs of the employees in any mine where he has charge. The Council feel sure that a practical man like the present Minister of Mines will never sanction a reduction from five years; but those most interested must be constantly on their guard, as the University have powerful influences working in their favour, and as time goes on and changes of Government take place, a Minister may be found more favourable to the proposal than ever the Hon. Mr. McGowan is likely to be.

The geological museum has been further enriched by the addition of several specimens donated and collected during the year. The cabinets have been rearranged, and in many instances reclassified by the untiring energy and zeal of Mr. Given, M.A.

The balance-sheet, which has been duly audited, is herewith submitted for your information and consideration. The total receipts were £353 2s. 2d., and the disbursements £325 13s. 6d., leaving the account in credit £27 8s. 8d. at the close of the financial year. The value of the buildings, furniture, land, machinery, water-mains, and other property is estimated at £4,000.

The Council trust that the year just opened will be marked by good attendance, and that at the Government examinations in December next the result will show that a large number of students have passed with credit.

I have, &c.,

A. Bruce, Secretary.

Mr. T. W. Rhodes, Secretary to the Coromandel School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Coromandel, 7th March, 1908.

Your Council have pleasure in stating that the school is now well equipped, and in charge of a capable and diligent Director. The past year has been a somewhat eventful one to the institution, as, owing to the resignation of Mr. D. V. Allen, B.Sc., A.O.S.M., in July last, the teaching was disorganized. Arrangements were made with Messrs. R. E. Jamieson and A. H. Gatland to carry on until the end of 1907. Applications were invited for the position of Director, and out of a number of gentlemen possessing high testimonials Mr. Andrew C. Cotton was selected. When Mr. Cotton accepted the position and entered upon his duties he held the degree of B.Sc., but since then he has received intimation that he has won the M.Sc. degree, with honours. We have pleasure in congratulating him upon his added honours, and feel sure that he will rise still higher in the scientific world.

We regret that the results attained by students at the last examination were not so good as we have had in the past, but, considering all the circumstances, a high percentage of passes could hardly be looked for. We trust that now the school has assumed its normal condition, that students will put forth extra exertion, and strive to grasp the advantages within their reach. Mr. W. E. Carlyon was the only student who won a certificate, and he passed in bullion-assaying.

Thanks are due to Messrs. Jamieson and Gatland for having so cordially undertaken the work of carrying on the school during the interregnum; also to Mr. Jamieson, sen., for acting as battery-manager.

The finances are in a healthy condition, as, although the account at the end of our financial year showed a debit of £11 0s. 9d., we had a good asset in the Government subsidy and grant due, which has since been received. At the present moment the accounts are in credit, there being sufficient to provide for all contingent liabilities and to procure a few requisites.

Statement of Receipts and Expenditure of the Coromandel School of Mines for the Year ended 31st January, 1908.

Receipts.	£	s.	d.	*Expenditure.*	£	s.	d.
Government grants	190	7	0	Overdraft, Bank of New Zealand, at end of last period	13	13	8
Class fees	10	5	0	Salaries	169	17	4
Members' fees	8	0	0	Fire insurance	2	14	0
Donations (F. Jeune, £1 2s.; T. W. Rhodes)	2	3	0	Accident insurance	1	19	0
Assays	0	10	0	Transfers to battery	16	10	0
Sale of coke to Bank of New Zealand	2	4	0	Chemicals and requisites	14	1	0
Refund excess accident insurance	0	9	0	Advertising for Director	3	9	0
Debit balance, Bank of New Zealand	11	0	9	Bank charges, &c.	1	6	9
				Cash in hand	1	8	0
	£224	18	9		£224	18	9

Statement of Receipts and Expenditure of Public Battery for the Period ended 31st January, 1908.

Receipts.	£	s.	d.	*Expenditure.*	£	s.	d.
Revenue from crushings	18	15	6	Salaries, &c.	32	15	2
Transfer from School of Mines Account, Government grants, &c.	16	10	0	Balance in bank	2	10	4
	£35	5	6		£35	5	6

I have, &c.,
T. W. Rhodes, Secretary.

Mr. W. F. Worley, Director of the Nelson School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Nelson, 19th March, 1908.

I have the honour to lay before you my report of School of Mines work done in Nelson for the year 1907.

It affords me much pleasure to say that the Nelson School of Mines, though only a small institution, and scarcely worthy of the high-sounding title "School of Mines," has been able during the past year not only to maintain its efficiency, but rather to increase its usefulness, as the subjoined detailed account of the work accomplished will show.

Blowpipe Analysis Classes.

These classes are still very popular, for, as often as old boys leave, others are anxious to come in and take their places.

Thirty boys joined the classes at the beginning of the year, four only of whom dropped out through lack of interest. Two classes were formed, and each class met forty times during the year, or at the rate of one attendance per week for the school year, the average attendance at each class being eleven.

The course of work undertaken was similar to that of past years—namely, practical training in the use of the blowpipe for the identification of the chief ores of commerce. By this means the boys are taught to identify ores of antimony, arsenic, lead, tin, zinc, bismuth, copper, chrome, iron, nickel, cobalt, and manganese; and it is astonishing how readily most of them learn to make these tests. In addition to the blowpipe-work, the study of minerals is undertaken; but this part of our work is at present in an unsatisfactory state, owing to our chief minerals being in the Nelson Museum, which is still in a dilapidated state, owing to the fire of 1906. Three of my boys, however, managed to secure prizes for the exhibition of minerals at the Technical School Exhibition, held in Nelson last December.

In the early part of the year an excursion was made to the Dun Mountain mineral belt, where collections were made of the ores and rocks of that neighbourhood, each boy returning home well laden with specimens.

Geology Class.

By special arrangement with the Nelson Education Board, a course of lessons on elementary geology was given to a class of school-teachers. There were nineteen members in the class, some of whom were ladies, and the class met for one hour each week for ten consecutive weeks. This amount of time did not allow of much work being undertaken, but a good start with the subject was nevertheless made, the object aimed at being the training of the class to observe geological facts. To this end the weathering of rocks was dealt with, the illustrations being drawn from rocks found in or near the City of Nelson, and in this way information about local rocks was conveyed. As an outdoor study, the synclinal arrangement of the conglomerates, clay-stones, and sandstones of the Port Hills was studied, an afternoon being given to this part of the work. At the close of the course of lessons a lantern lecture on earthquakes was given, but this lecture was thrown open to all teachers who cared to attend. About sixty availed themselves of the opportunity. The causes and phenomena of earthquakes were explained by means of apparatus, diagrams, and limelight views, the illustrations being drawn from New Zealand (chiefly Marlborough), Japan, and San Francisco. The lecture appeared to be successful, and has opened up a new way of extending our usefulness. By request of the Principal of the Boys' College, Mr. H. L. Fowler, the lecture was repeated for the benefit of the boys of that institution.

Testing for Gold.

One student, an old prospector, was put through a course of practical instruction in the art of detecting even small quantities of gold in a sample of rock. The method adopted was to first crush the rock in a Taylor's rock-crusher, thoroughly mix the crushed material, take a fair average sample of it, reduce the average sample to fine powder, take one ounce of this and carefully pan it off in a suitable saucer, if necessary boil the heavy residues in nitric acid, and then finally grind in an agate mortar and pan off. It was shown that by careful manipulation even 1 dwt. to the ton could easily be detected by this method, as fire assays were made to check the pan tests and to show their reliability if properly carried out. Larger samples were then treated, by grinding several pounds weight to fine powder and recovering the gold by pan-amalgamation in the usual way; retorting the amalgam, and weighing the gold to get an approximate idea of the value of the sample operated upon. As might have been expected, however, the check fire assays showed that the pan-amalgamation assay is not of much value where pyritous material has to be dealt with, and that the result obtained must only be taken as a minimum, which, if good, is, of course, valuable information. The testing method described above is, however, a really valuable one, and, as the Taylor's rock-crusher is not an absolute necessity, though a great convenience, could be carried out in the field by miners and prospectors if they only knew exactly how to go about it, as the apparatus required is of the simplest kind. The average miner is generally too rough and ready with his tests, and is likely to miss the gold if it exists in only moderate quantities. A little more refinement is needed in these days, when small quantities of gold per ton can be made to pay under suitable conditions.

Assaying.

Only twenty assays were made for the public during the year, and not one of these led to any important results.

Conclusion.

The foregoing is a brief record of our year's work, which has been by no means light, considering that it had to be done in one's spare time after the discharge of pressing duties.

I have, &c.,

W. F. Worley, Director.

Mr. A. Gordon Macdonald, Director of the Westport School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Westport, 2nd April, 1908.

I have the honour to report that the class attendance of the Westport School of Mines at the main school, and at the branches at Denniston, Granity, and Millerton, has been only moderately well maintained during the past year. The total average attendances were as shown in the following table :—

Mathematics	2·3
Drawing	2·4
Mineralogy	3·5
Applied mechanics and steam-engine	1·2
Surveying	1·7
Chemistry	2·7
Assaying	5·2
Geology	1·1
Mining	2·1
Metallurgy	1·0

The total number of students on the roll for the year was forty-six, of whom ten presented themselves at the annual School of Mines examinations held in December last. The results of these examinations were as follows : First class, three certificates ; second class, eight certificates ; third class, four certificates.

One student, Mr. S. Hayes, obtained full marks in mathematics at the junior examination, also top marks for the Dominion in ventilation (senior examination). Mr. Hayes, with 187 marks, and Mr. J. Milligan, with 144 marks, receive the *Australian Mining Standard* prizes for the highest aggregate of marks in the examination. Mr. K. Ross, an old student and an active member of the school, has passed his examinations for a second-class engine-driver's certificate, and Mr. Charles Mann, also a former student, has passed the Government examination as a battery-superintendent.

During the year seventy gold assays, eleven coal assays, and twenty-eight assays and determinations of various minerals and rocks were made, a total of 109 in all. Chief among these were assays of different copper-ores from Mount Radiant, including bornite and chalcopyrite, also cerussite, glauber salts, galena, antimony, and molybdenite.

A petrological microscope has been ordered from England, and fills a long-felt want in the detection and determination of minerals and rocks. The Mines Department has kindly granted a subsidy for its purchase.

In conclusion, I wish to thank all those who have given assistance to the school during the past year by the use of rooms, presentation of books, magazines, mineral and rock specimens, &c.

I have, &c.,

A. Gordon Macdonald, B.E., Acting Director.

Mr. J. Henderson, Director of the Reefton School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Reefton, 3rd March, 1908.

I have the honour to report as follows in regard to the work of the Reefton School of Mines for the year 1907 :—

Classes were conducted from March throughout the year in mathematics, surveying, mining, metallurgy, assaying, and chemistry. The class in mathematics, which was well attended, was quite elementary. The classes in surveying and mining were conducted to suit the syllabus of the mine-manager's examinations, as were those in metallurgy and assaying for the battery-superintendent's. Several students sat for these examinations, but the results are not yet to hand.

In the beginning of 1907 Mr. W. M. Durant was successful in obtaining the School of Mines scholarship offered for the West Coast. For the examinations at the end of 1907 only five students sat, and none did very well.

The attendance for 1907 was as follows : First term, 27 ; second term, 34 ; third term, 25.

During the year 152 assays were made for the public for gold, and twelve for other metals ; nineteen coal analyses were executed, and the nature of thirty-two samples determined.

I have, &c.,

J. Henderson, M.A., B.Sc., A.O.S.M., Director.

Professor James Park, Director of the Otago University School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— University of Otago, Dunedin.

I herewith submit my annual report on the Otago University School of Mines for the year 1907.

The mining school showed an attendance of twenty-one students, of whom nineteen were matriculated students of the University of New Zealand. Of the twenty-one registered students, six attended one subject only—namely, one in assaying and five in geology.

Six students in their final year completed the full course in the division for which they had entered, and two in their final year failed to pass in all the subjects required to qualify for the Associate diploma.

Annual Examinations.

Twenty students presented themselves for examination in twenty-one subjects, and of these one failed in senior surveying and one in mineralogy.

Diplomas and Certificates.

Nine graduates of the mining school, having presented satisfactory certificates of time spent in practical work as required by the regulations, were awarded the diploma of Associate—namely, four in mining, four in metallurgy, and one in geology.

The names of the students to whom diplomas and certificates were issued are as under: Philip Hastings McDouall, B.E., certificate of land and mine surveyor; Urquart B. Inglis, A.O.S.M., diploma of associate in metallurgy and certificate of metallurgical chemist and assayer; Gowan L. Hercus, diploma of associate in metallurgy; John F. McPadden, B.Sc., diploma of associate in mining; A. M. Finlayson, M.Sc., diploma of associate in geology; Oluf Moen, A.O.S.M., diploma of asociate in metallurgy; Alfred L. Heale, diploma of associate in mining; E. D. Isaacson, diploma of associate in mining; Norman M. Shand, diploma of associate in mining, diploma of associate in metallurgy, certificate of land and mine surveyor.

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

	Issued up to End of 1906.	Issued in 1907.	Total.
Mining	78	4	82
Metallurgy	38	4	42
Geology	13	1	14
Totals	129	9	138

Appointments obtained by Old Students during 1907.

The number of remunerative appointments obtained by our old students this year is greater than in any other year since the establishment of the school. It is a pleasure to state that men holding our Associate diploma are held in good repute in all parts of the globe. A gratifying feature that is becoming more marked with each succeeding year is the tendency to appoint New Zealand mining graduates to places of responsibility within the Dominion.

All the graduates of 1907 have been successfully placed, and the Director finds an increasing difficulty in supplying men for the appointments that are put under offer through him.

The total number of appointments obtained by our students in the past seven years is as follows: 1901, 8; 1902, 7; 1903, 8; 1904, 11; 1905, 13; 1906, 14; 1907, 16: total, 77.

Altogether seventy-seven responsible positions have been secured by sixty-two individual students, at salaries ranging for the most part between £300 and £600 a year.

The occupations represented in the above appointments are as under: Consulting engineers, 5; mining engineers, 8; assistant mining engineers, 5; general mine-managers, 3; mine-managers, 8; inspectors of mines, 2; geological surveyors, 4; mine-surveyors, 5; land and topographical surveyors, 2; metallurgists, 13; dredge-masters, 2; directors of mining schools, 10; lecturers at mining schools, 10: total, 77.

In addition to these posts, thirty of our students occupy in different parts of New Zealand such places as assayers, cyaniders, metallurgical chemists, mine and battery assistants, surveyors, geologists, and engineer's assistants, at a remuneration of 9s. or 10s. a day. In these subordinate places our students gain the experience that fits them for more responsible appointments.

The signal success achieved by our graduates in the New Zealand University examinations in recent years is directly the result of raising the standard of the teaching in all the departments in the mining school to the degree standard in 1901.

New Mining School Building.

The Director finds it a pleasure to chronicle that a start has at last been made with the erection of a new building, for which a grant of £5,000 has been made by the Government. It is hoped that everything will be in readiness for the formal opening of the new school at the beginning of next session.

Laboratory.

During the past year 134 samples of ore and mineral were assayed for the public by Mr. Waters at schedule rates, and in the same period thirty-seven samples of rock, &c., were examined and reported on by the Director, and some thirty by Dr. Marshall, all free of charge.

Conclusion.

The Director wishes, in conclusion, to place on record his appreciation of the co-operation of his colleagues in promoting the interests of the institution. His acknowledgments are especially due to Dr. Marshall and Mr. Waters, who have carried on the work in their respective departments with much zeal and conspicuous success.

I have, &c.,

James Park, M.Inst.M.M., M.A.Inst.M.E., F.G.S., Director.

(*d.*) REPORTS OF WATER-RACE MANAGERS.

Mr. JAMES ROCHFORD, Manager of the Waimea-Kumara Water-races, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Kumara, 27th April, 1908.

I have the honour to forward the following report on the working of the Waimea-Kumara Water-races for the financial year ending the 31st March, 1908.

WAIMEA RACE.

The cash received for sales of water from this race for the year ending the 31st March, 1908, was £637 1s. 7d., and the expenditure on gauging, maintenance, and repairs for the same period amounted to £592 18s. 5d., showing a credit balance of £44 3s. 2d. on the year's transactions.

The average number of miners supplied with water from the race for sluicing purposes during the year was 29·41, showing an increase of 3·66 as compared with the previous year; and the approximate quantity of gold obtained by them was 1,903 oz., having a value of £7,421 14s.

The total sales of water for the year amounted to £652 7s. 3d., or £108 7s. 2d. more than the previous year; and the quantity of gold obtained was approximately 277 oz. more than the preceding year, representing an increase in value of £1,080 6s.

The cash received for sales of water was £80 12s. 10d. more than during the previous year. The expenditure on gauging, maintenance, and repairs was £29 2s. 7d. less than during the preceding year, and the head works at Wainihinihi and Kawhaka, and the Waimea siphon and tunnels, and the main and branch races have been maintained, and are now in good working-order.

The revenue derived from the Stafford section of the race shows an increase of £31 1s. over the previous year; and, as there is still a considerable area of unworked ground in the locality that will pay fair wages, I do not anticipate any falling off in revenue for some time to come.

At Tunnel Terrace six parties have been taking water from the race throughout the year, with satisfactory results. There is still a large area of payable ground in this locality, and I am satisfied that the sales of water for the ensuing year from this section will show a still further improvement.

The tributers of the Waimea Hydraulic-sluicing Company worked steadily throughout the year, and have paid £115 7s. 3d. for water since the Waimea Water-race was extended along Tunnel Terrace Hill. Mitchell and party have also taken advantage of the extension by laying a line of 13 in. iron piping from it to their claim, which could not otherwise have been worked with payable results. As the total cost of the extension was only £147, the result is highly satisfactory so far, and fully bears out my report of the 4th September, 1906.

The party of Chinamen at Red Jack's are still taking water from the race, and, as far as I can learn, the ground being worked by them is highly payable.

The water was off ten days during the year through breaks in the race. A great number of sets of timber have been put in the tunnels, and they are now in much better order than they have been for years past; but the high flumings at Fox's and Greek's, which were erected over thirty-one years ago, are in a very decayed condition.

There was no scarcity of water during the year.

Authorised free water to the amount of £3 17s. 4d. was supplied from this race during the year.

The following is a summary showing the revenue and expenditure in regard to this race for the financial year ended 31st March, 1908:—

	£	s.	d.
Sales of water	652	7	3
Cash received	637	1	7
Expenditure	592	18	5
Approximate value of gold obtained	7,421	14	0

Average number of men employed, 29·41.

Branch Race to Callaghan's and Middle Branch of Waimea Creek.

The cash received for sales of water from this race for the year ending the 31st March, 1908, was £484 3s. 10d., and the expenditure for the same period on gauging, maintenance, and repairs was £700 11s. 6d., showing a debit balance of £216 7s. 8d. on the year's transactions.

The average number of miners supplied with water for sluicing purposes from this race during the year was 8·16, a decrease of 3·59 as compared with last year; and the approximate quantity of gold obtained by them was 1,192 oz., having a value of £4,648 16s.

The total sales of water for the year amounted to £471 8s. 8d., a decrease of £209 12s. 10d. on the preceding year, and the cash received for sales of water showed a decrease of £245 4s. 10d.

The approximate quantity of gold obtained by the miners was 539 oz. less than during the preceding year, representing a decrease in value of £2,102 2s. The expenditure on gauging, maintenance, and repairs was £36 10s. 4d. greater than the previous year.

The falling-off in the sales of water from this race is accounted for by the fact that only two parties sluiced into the Waimea Main Tail-race for five months of the year. McIlroy and party did very little sluicing during the year, but they expended a considerable sum of money in prospecting their claim by means of tunnels driven from the Waimea Main Tail-race. When these tunnels were driven, it was found that the richest wash was too low to be sluiced into the Main Tail-race, and, as they had no other means of working the ground, they were reluctantly compelled to abandon it altogether. This makes the third claim at Middle Branch Flat that has been abandoned for want of fall. Had the Waimea Main Tail-race been driven on a level some 8 ft. or 10 ft. lower, the whole of this ground would have paid fair wages, and these three claims would have still been working.

Flushing-water was supplied to the Waimea Main Tail-race during the year free of charge.

At Callaghan's Flat, Havill and party sluiced for the first nine months of the year, which brought their face close up to the Callaghan's Water-race. Their original intention was to flume the race behind them and sluice the ground on which the race now stands, but the returns from the ground in the vicinity did not come up to expectations, and they decided to save expense by driving under the Callaghan's Water-race and opening up their claim on the upper side.

The dry season to some extent interfered with Manzoni and party, as their tailing-site in the little Kapitea Creek became blocked up with tailings, and they had to turn off the Government water on several occasions until a flood took place and washed the tailings away. Notwithstanding this drawback, they paid £111 4s. 11d. for water during the year, making a total of £245 4s. 11d. since the extension of the Callaghan's Race.

Honey and party were engaged for a considerable portion of the year in doing dead work, but they are now in good working-order, and taking water steadily. As there is still a large area of unworked ground in this locality that will pay fair wages, there is no likelihood of the revenue from sales of water falling off for some time to come.

The following is a summary of the revenue and expenditure in regard to this race during the financial year ended 31st March, 1908 :—

	£	s.	d.
Sales of water	471	8	8
Cash received	484	3	10
Expenditure	700	11	6
Approximate value of gold obtained	4,648	16	0

Average number of men employed, 8·16.

Kumara Race.

The cash received for sales of water from this race for the year ending 31st March, 1908, was £411 16s. ; and the expenditure for the same period on gauging, maintenance, and repairs was £678 1s. 4d., showing a debit balance of £266 5s. 4d. on the year's transactions.

The average number of miners supplied with water from the race for sluicing purposes was 11·66, a decrease of 4·34 as compared with the previous year ; and the approximate quantity of gold obtained by them was 758 oz., having a value of £2,956 4s.

The total sales of water for the year amounted to £381 5s. 6d., a decrease of £120 16s. 8d. on the preceding year, and the cash received for sales of water shows a decrease of £120 10s. 10d.

The approximate quantity of gold obtained by the miners was 242 oz. less than during the previous year, representing a decrease in value of £943 16s.

The expenditure on gauging, maintenance, and repairs was £62 11s. 4d. less than the preceding year, and all the main and branch races, tunnels, and siphons are now in good working-order.

A new foundation was put into the bywash of the No. 2 Kapitea Dam, the top planking was renewed, and the whole structure is now practically new, and will last for many years to come.

There has been no sluicing done in the No. 3 channel during the year, but the sum of £41 18s. 9d. was expended in labour and material, effecting urgent repairs. The flush shaft at the head of the No. 3 deviation was completed in October last, and the Mines Department then granted a subsidy of £348 to put the old No. 3 channel below the deviation in working-order ; but so far no action has been taken by the miners either to carry out this work or to drive tail-races to open out the claims held by them and commanded by the new deviation.

The falling-off in the sales of water from this race is due to the fact that in the No. 4 channel Cullen and party only sluiced during the month of April, and the Long Tunnel Company was engaged driving a new tail-race and doing other dead work for three months of the year.

At the beginning of the year two parties were sluicing into the No. 5 channel, but owing to the poorness of the ground one claim was abandoned in November last, a contingency which I pointed out as probable in my last annual report.

McGrath and Co.'s was the only private tail-race supplied with water from the Kumara Race during the year.

Corbett Bros., who erected a flax-mill on the tailings below Dillmanstown, are still taking water from the race, and the plant is working more satisfactorily.

The usual quantity of flushing-water authorised by the Department was supplied to the No. 4 and No. 5 Main Tail-races, and water was supplied for fire-brigade purposes to the Borough of Kumara, and for washing-up purposes to all claims using water from the race, free of charge.

Prospecting.

Prospecting operations (by means of sinking shafts) were commenced in April last on the north bank of the Teremakau River. The ground was found to be extremely wet and difficult, and although the townspeople engaged additional men at their own expense, and kept three shifts going after the water was met with, it was found impossible to bottom any of the shafts. The No. 3 shaft, which could only be sunk to a depth of 38 ft., carried a little gold practically from the surface all the way down, and showed other strong indications of auriferous deposits. After this shaft was abandoned it was decided to make an effort to prospect the ground by driving a tunnel from the Teremakau fall. Owing to the fact that none of the shafts had been bottomed, it was impossible to ascertain with any degree of accuracy the depth of the ground to be prospected, but levels were taken from the false bottom under

lying the gold-bearing wash in Bell and party's claim on the Greenstone side of the terrace, and to allow for the dip of the country the tunnel was started on a level some 44 ft. lower. The tunnel is at present driven a distance of 300 ft., but so far no indication of payable gold has been found.

Kumara Deep-level Drainage-tunnel.

The Kumara Deep-level haulage shaft was bottomed at a depth of 142 ft. At the bottom of the shaft there was about 4 ft. of fine silt from the reef upwards which contained no gold; the 27 ft. immediately above this was very heavy gravel or wash, extremely hard, and carrying a little gold, but not payable. The best prospects were obtained from a layer 4 ft. or 5 ft. in thickness about 25 ft. above the reef. Although a considerable amount of money has been spent during the past two years in repairing and extending the drainage-tunnel and in sinking the haulage shaft, no prospecting has been done, as the new extension is entirely driven in the reef or main bottom. When haulage gear is erected on the new shaft, prospecting can be carried out much cheaper than formerly, as trucking the dirt through the whole length of the drainage-tunnel will be dispensed with.

The following is a summary of the revenue and expenditure in regard to this race during the financial year ended the 31st March, 1908:—

	£	s.	d.
Sales of water	381	5	6
Cash received	411	16	0
Expenditure	678	1	4
Value of gold obtained	2,956	4	0

Average number of men employed, 11·66.

WAIMEA–KUMARA WATER-RACE.

The following is a summary of the revenue and expenditure in regard to this race for the financial year ended the 31st March, 1908:—

	£	s.	d.
Sales of water	1,505	1	5
Cash received	1,533	1	5
Expenditure	1,971	11	3
Value of gold obtained	15,026	14	0

Average number of men employed, 49·25.

The sum of £125 6s. 3d. in addition was expended on extension and new work during the year.

It will be seen by the above summary that the value of the sales of water from the combined races for last year was £1,505 1s. 5d., as against £1,727 3s. 9d. for the previous year, thus showing a decrease in the value of the sales of water for the past year of £222 2s. 4d.

The expenditure on gauging, maintenance, and repairs was £1,971 11s. 3d., as against £2,026 14s. 10d. for the previous year, thus showing a decrease in the cost of maintenance last year of £55 3s. 7d.

The cash received during the year was £1,533 1s. 5d., as against £1,833 9s. 11d. for the previous year, thus showing a decrease in revenue of £300 8s. 6d. on the previous year.

WAINIHINIHI WATER-RACE.

Although the season was exceptionally dry, the supply of water from this race showed hardly any decrease on that of former years, and the siphon which supplies the Waimea, Callaghan's, and Middle Branch Races was practically running full all the year. No breaks occurred, there were no stoppages of any kind, the race has been well maintained, and is now in excellent repair.

I have, &c.,
JAMES ROCHFORD, Manager, Water-races.

Mr. R. MURRAY, Manager, Central Otago Water-races, to the UNDER-SECRETARY, Mines Department, Wellington.

Naseby, 30th April, 1908.

SIR,—

I have the honour to submit the following report on the Mount Ida, Blackstone Hill, and Alexandra Water-races for the year ending the 31st March, 1908:—

The total sales of water from the Mount Ida Race during the year amounted to £642 14s. 9d. The expenditure on maintenance and repairs for the same period was £1,104 15s. 6d. The total cash received was £642 14s. 9d. On account of payment in advance, free water to the value of £3 1s. 10d. was supplied, and free water for washing up was also supplied to the value of £51 4s. 5d. The total value of water supplied from this race during the year amounted to £697 1s. The average number of miners supplied with water was 41·55, an increase of one on that of last year. The approximate quantity of gold obtained by parties using water from this race was 975 oz., valued at £3,071 5s.

The season has been an extraordinarily dry one, the water-supply being much worse than that of last year, the worst since 1893, only three months—September, October, and November—giving practically a full supply, the rest giving an average of a good deal under half-time.

The widening and repairs to the race from Naseby to Hill's Creek, a length of thirty-seven miles, to a uniform width of 6 ft., started in February, 1907, was finished in May.

The weather still continuing dry, the supply in the whole length of the race being reduced to seven heads, had to get the whole of the distributing-dams filled, when a start was made on the 13th, on less than half-time, until the 14th June, when hard frost setting in the miners had to knock off. The frost

continuing off and on, very little work was done until the 17th August. On the 19th started the miners on the east side of Main Gully; those on the west side to clean out the branch race about four miles, from Coal-pit Dam to Enterprise Terrace distributing-dam, and a large box in the main race that required renewing built up with heavy snow-grass tussock and sods, leaving the box in its position.

To do away for all time with low timber flumes in the main race, am having them, when requiring renewing, built up in this manner, as this can be done while the water is running in the race. The box is left in its position. Also cleaned out the branch race supplying the Spec Gully miners.

The month of September turned out pretty rough—snowing, raining, and freezing—and there was a full supply. On the 15th there was a fall of snow of 5 in. in the township. The supply kept good until the 23rd November, when, on account of the extremely dry weather, the miners, from this on until I started with the widening and cleaning on the 9th January, were on less than half-time.

At the beginning of January had the main race from Coal-pit to Spec Gully cleared out a length of about six miles by the miners supplied from this section. The supply getting so low, had all the dams filled, and started on the 9th January with the cleaning of the race from Coal-pit outwards, employing the whole of the miners that would work, as well as others. As only cleaning had to be done until Store Gully, beyond the Wedderburn siphon, was reached, the work was light, and soon finished. Round Store Gully had to be graded, widened, and strengthened in parts, until the Idaburn was reached, a length of four miles.

From the Idaburn to Hill's Creek, where it was widened last year, the cleaning was very light. Across Hill's Creek Flat a length of about four miles to within about a mile of the flume across the East Marionburn being full wide, all it wanted was a good side trimming and cleaning. From this on to about a mile beyond Pearce's Gorge Creek, a length of about eight miles, had to be widened from 4 ft. to nearly 6 ft., and in parts, where required, strengthened. A good length of this was in rock. From this on to the head it is sufficiently wide (4 ft.), for when the water is wanted it is not there to fill a larger race. By the end of March the work was finished, and this length of the race (forty miles) widened and strengthened where seen it was required.

The season has been much the driest that I have seen since 1893.

Blackstone Hill Water-race.

The total sales of water from this race during the year amounted to £21 17s. 9d.; the total cash received was £21 17s. 9d. The total cost of maintenance and repairs was £2. The number of men supplied with water was five—Johnston and Sons (three) being the only ones until December, when the Dillon Bros. made a start. As the supply got so low, they only received ten days' free water of two heads, of the value of £1 17s. 6d. (Naseby miner's rate). They must have a good deal of faith in the country they propose to work, as they have gone to an expenditure of about £200 in laying an 11 in. siphon pipe-line across Peg-leg Gully.

The East Marionburn, from which the Blackstone Hill Race is supplied, is much the largest along the course of the Mount Ida Race supply, its intake being considerably higher than the Mount Ida Race. I widened it from 3 ft. to 5 ft., so that, as the creeks from this inward supplying the Mount Ida get low, the surplus, after supplying the Blackstone Hill demand, can be sent into the Mount Ida and on to the Naseby miners. It was widened for a length of about 30 chains, 21 of which is in rock. It having a grade of 12 ft. to the mile, the 5 ft. in width by 2 ft. in depth will take all the water in the creek except in flood-time.

Alexandra Water-race.

The total sales of water from this race during the year amounted to £161 10s. The expenditure on maintenance and repairs for the same period was £398 17s. The total cash received was £161 10s. On account of payment in advance, free water to the value of £88 was supplied. The total value of water supplied from this race during the year amounted to £249 10s.

From this race had water turned on to one of the farmers in Ida Valley on the 6th May, but on the 27th a heavy snowstorm set in, filling the race for miles with snowdrift. Hard frost immediately following, no water could be got along it. A slight thaw setting in in the second week in July, I tried to get the water along, but frost during the night would freeze it up, tearing down the sides on the steep sidelings, causing two small breaks, when it had to be turned off again, the ground being so hard that no material could be got to repair it. The frost was so hard at the dam that the maintenance man, on going up to close down the valve, could not turn the screw either one way or the other, from the effect of trying to keep the water in the race in July. When turned on again, on the 17th August, found it leaking so badly that it had to be turned out again on the 26th. A break in the masonwork (dry stone building), 12 ft. long and 10 ft. deep, was repaired, and the water was turned on again on the 30th.

During the month of November there were thirteen miners at work. Two parties started sluicing at Black's No. 3, but by the end of January the dam ran dry. J. Buchanan, the man in charge, with the lower maintenance man and two others, started to clean out stuff brought into the newly constructed portion from the upper side, the upper maintenance man repairing leaks. When finished with the cleaning the maintenance men were kept repairing the upper section, as from its construction it leaked badly in many places. After cleaning out the newly constructed portion, when the opportunity occurred, sent about five heads along it, to test whether, where constructed through the rock, it would be tight. Found in several places a leakage, but this, in a few days, had, on account of the muddy water, practically tightened up, and as it has a strong grip of the solid, it is hardly possible to at any time break away.

A first-class job of the construction and grading of this section has been made.

I have, &c.,

R. Murray, Manager.

(e.) IMPROVEMENTS IN MINING AND METALLURGICAL PLANT AND PROCESSES.

A Paper on the "B. and M. Circulating-tank,"* by Mr. F. C. Brown, General Manager, Waihi Grand Junction Gold-mining Company (Limited).

This apparatus fills a long-felt want in the cyanide and other metallurgical processes, where the treatment of the ore depends upon its metalliferous contents being extracted by means of chemical solvents.

The tendency nowadays in the economic treatment of quartz-ores containing gold and silver by the cyanide process is to go in for exceedingly fine grinding, as it is becoming more and more apparent that the extra extraction due to the fine grinding of the quartz-particles is far and away above the small extra cost of treatment due to the fine grinding.

Fine grinding means a simplification of process, as the finely ground pulp, instead of having to be classified into sands and slimes as heretofore, and treated by two distinct methods—viz., percolation of the sands and agitation of the slimes—can be agitated direct, and the gold- and silver-bearing solutions separated by filtration or decantation. The agitation of the whole pulp is carried on on some fields in the usual shallow agitators fitted with mechanically operated arms or stirrers, but there are serious drawbacks to this method, some of which are,—

(1.) When the pulp is thick, instead of being properly aerated by the agitation, it is simply moved round and round in the agitator, and only its surface comes in contact with the air. This means that, in order to thoroughly aerate the charge and get the gold and silver into solution, a long period of agitation is necessary, unless special means are provided for introducing air into the charge.
(2.) With a thin pulp, especially if much sand is present, there is a great danger of settlement and packing on the bottom of the agitator.
(3.) With a sandy charge, a sudden and unavoidable stop of the machinery means great trouble in restarting the agitation.
(4.) The shafting and numerous belts for driving these agitators are a constant source of expense by wear-and-tear, as are also the agitation gears and arms.
(5.) Shallow agitators require a large ground-space, and need expensive foundations.

The apparatus herein described overcomes all these drawbacks, and by its use the following necessary conditions for efficient treatment are obtained :—

(1.) The agitation or circulation of large charges of concentrates, sand, pulp, or slimes with cyanide or other solutions is most perfect.
(2.) Every particle of the material under treatment is continually coming into contact with solution and air, and being subjected at the same time to a certain amount of scouring or washing.
(3.) The agitation of the charge can always be readily started up, no matter how long it has been allowed to settle and become packed.
(4.) The charge is always under control, and can be subjected to preliminary lime or other washes at the will of the operator.
(5.) There are no wearing-parts, no belts, and no moving gear.
(6.) The consumption of power is about one-quarter of that required for mechanical agitation.
(7.) The tanks are cheap to install, and require a very small ground-space for a large tonnage—a most important feature in cold countries, where buildings have to be artificially heated.
(8.) By means of a simple sampling device, a correct sample of the material under treatment can be obtained during agitation.
(9.) The discharge of the material, after treatment, is accomplished quickly, and without any manual labour being necessary.

General Description of the Apparatus.—The material to be treated can be run direct into the tanks from the tube mills or other grinding-machine in large quantities, say 50 to 100 tons of pulp (dry weight) for a charge, if necessary, allowed to settle so as to decant off the superfluous water, and then be perfectly agitated with cyanide-solution, and kept in circulation for such time as is necessary to dissolve the gold and silver.

The apparatus consists of a tall tank with a conical bottom, and in the centre of the tank there is an upcast pipe open at both ends, and means is provided for introducing compressed air at the bottom of this pipe—practically, a tall tank with an air-lift pump in the centre of it. At the bottom of the tank, situated in the cone, there is a system of jets arranged to deliver air solution or water against the sides of the cone in such a manner as to soften or liquefy the sand or pulp packed tightly in the cone, and then prepare it to be lifted through the upcast pipe and discharged at the top of the tank. As the mixture of sand or pulp and solution does not settle rapidly, it is found that in a comparatively short time the whole charge in the tank becomes a homogeneous mixture of sand, slime, and solution, the circulation of which can be kept going indefinitely by means of a comparatively small quantity of compressed air admitted at the bottom of the air-lift pipe.

Method of starting the Agitation.—No matter how tightly the charge has become packed in the bottom of the tank, it can be readily started up. In experimenting with tanks 10 ft. in diameter by 39 ft. deep, charges of 60 tons of fine sand that had been allowed to settle for over a week were started up without any difficulty.

* In addition to the installation of these tanks at the Waihi Grand Junction Mine, there have been thirty-two tanks erected during the past year at the reduction-works of the Waihi Gold-mining Company (Limited), and a large number are in use at the Hacienda de San Francisco Company Mine and elsewhere in Mexico.

The essential feature in starting the agitation is to commence softening the material right at the bottom of the cone by introducing solution, water, or air through a system of jets in sufficient quantity to thoroughly liquefy it, and in this condition it is immediately lifted through the upcast pipe. The portion of the charge around the pipe, being thus undermined, falls down, becomes mixed with solution, and is lifted to the top of the tank. In this manner a channel is worked out around the pipe, leaving a quantity of material lying on the sides of the cone, this quantity depending on the class of material being treated and the diameter of the tank. The solution is now shut off from the bottom jets and turned into a set of jets impinging higher up on the cone, with the result that, in tanks up to 10 ft. in diameter, the remainder of the charge is undermined, settles down, becomes mixed with solution, and is lifted to the top of the tank. With tanks of larger diameter than 10 ft. it is sometimes necessary to use a third set of jets, especially if sandy material is being treated. The second and third sets can be connected to the same supply-pipe and worked simultaneously. Once the agitation has been started, and the sides of the cone cleared, there is no tendency for the material to settle on the cone, provided the velocity of the flow from the upcast pipe is at the speed required for the material under treatment. This speed reaches its maximum when clean coarse sand is being treated (coarse cencentrates would require a greater speed, but concentrates are invariably ground very fine for cyanide treatment), and is at its minimum when the charge consists of slimes only.

Air and Power.—The following figures are from actual tests while running under ordinary working-conditions :—

(1.) A tank 7 ft. 6 in. diameter by 37 ft. high treating slimes requires from 4 to 6 cubic feet of free air per minute, at a pressure of about 22 lb. per square inch. This tank takes a charge of 15 tons of slimes (dry weight). Horse-power = $\frac{1}{3}$ to $\frac{1}{2}$.

(2.) The same size tank treating finely ground concentrates requires 15 to 20 cubic feet of free air per minute, of a pressure of about 26 lb. per square inch, and this gives a very thorough agitation. This tank takes a charge of about 35 to 40 tons (dry weight) of concentrates. Horse-power = $1\frac{1}{2}$ to 2.

(3.) An installation of 10 tanks each 10 ft. diameter by 40 ft. high treating slimes requires 88 cubic feet of free air, at a pressure of 22 lb. per square inch. Each tank holds a charge of 35 tons (dry weight). Horse-power = $\frac{3}{4}$ per tank.

(4.) Two tanks 13 ft. diameter by 55 ft. high treating slimes require 32 cubic feet of free air, at a pressure of 33 lb. per square inch. Each tank holds 110 tons dry slimes. Horse-power = $1\frac{3}{4}$ per tank.

(5.) Tanks 10 ft. diameter by 40 ft. high treating finely ground sand require 25 cubic feet of free air, at a pressure of 22 lb. The charge for a tank is 50 tons. Horse-power = $2\frac{1}{4}$.

From these figures it is a simple matter to approximately estimate the power required for any material ranging from clean sand to slimes.

In starting the agitat on it is advisable to use about two to three times the above quantities of air for a short time until the charge in the tank has become thoroughly softened. This can easily be done where several tanks are in use, as the air can be reduced on some so as to provide for the extra quantity required for the one being started up.

Description of a Tank for treating 50-ton Charges of Finely Crushed Ore (Dry Weight).—Fig. 1 shows a sectional elevation of the tank, which is 10 ft. in diameter, and of a total height of 39 ft. 6 in., being 32 ft. above the cone.

A is a central pipe 10 in. in diameter, open at both ends, and supported by hangers and stay-rods as shown. Compressed air is admitted at the bottom of pipe A through pipe B, which is connected with the main supply of air. The delivery of the air is through valve C, this valve being shown in detail in Fig. 4. It is similar to those used on the air-tubes of bicycles, and consists of a slotted pipe covered by a tight-fitting rubber sleeve, which prevents any danger of sand getting into the pipe. In the valve C the rubber sleeve is clamped below the slots, and this allows the escape of air to be upwards into pipe A. This is a convenient method of introducing the air, as it is simple, and allows the operator to regulate the quantity of air by the valve D, and at the same time observe the flow from the top of pipe A.

E is a circular hollow casting, connected by pipe F with the main water-supply or solution-pump. E′, E′, E′, E′ are four pipes 1 in. in diameter, through which the solution or water from E is discharged. These pipes, E′, E′, are curved as shown in Fig. 3, and furnished with rubber valves similar to valve C, and are arranged to deliver the solution or water in a circular and downward direction against the sides of the cone near the bottom of the tank.

G is a casting similar to E, and is also connected by pipe H to the main water-supply or solution-pump. G′, G′, &c., are eight straight pipes, $\frac{3}{4}$ in. diameter, fitted at their discharge-ends with rubber valves similar to valve C. These pipes discharge in a downward direction against the sides of the cone.

Besides these two means of supplying solution, it is advisable, when treating heavy-sand material, to be able to introduce solution through the same pipe that supplies the air, and this is provided for by the connection shown at I.

J is the discharge-opening of the tank.

K is a pipe for decanting off water or solution. This pipe is made from four pieces connected by loose joints, so that it can be lowered and raised in the tank by means of the wire line L.

M is a circular sheet-iron deflector on top of pipe A, and its object is to prevent splash, and to direct the flow towards the outside of the tank. It can be adjusted as to distance above the top of pipe A according to requirements.

O is an overflow pipe.

N is a casting which acts as a base to the cone, and is provided with a hole in its centre which keeps pipe B in position.

Fig. 2 shows a tank with a steel-plate stand. This makes the tank self-contained, and renders its erection very simple, as the four sections can be bolted together and upended on a level concrete floor, the casting N taking its share of the weight.

Fig. 5 is the cone in section of a 15 ft.-diameter tank, and Fig. 6 is the same cone in plan. These show a different arrangement of distributing-pipes, there being two circles of pipes branching from the same upper casting; this is necessary owing to the cone being deeper when it is required to treat sand or coarse battery pulp.

When a number of tanks is to be installed it is advisable to have supply-pipes F and H at the top of the tanks and arranged like pipe B. They can be connected to a common supply-pipe running parallel to the row of tanks. A branch from this supply-pipe can be connected to the main air-supply pipe in such a manner that either solution or air can be supplied. This arrangement is very convenient, as all the valves can be operated from a platform at the top of the tanks, say, about 3 ft. down from the top, and running between two rows of tanks.

When it is only desired to treat slimes or very finely ground pulp containing a large percentage of slimes, one circular casting G with jets G′ is sufficient, but it should be arranged so that the jet G′ impinge against the side of the cone at a point about one-third of the distance from the bottom—*i.e.*, somewhat lower than shown in Fig. 1.

When the treatment calls for filtering to recover the gold-bearing solutions, the decanting-pipe K is not required, as the discharge is through the opening J, to which a suitable hose can be attached. By having the hose attached to a fixed supply-pipe to the filters, it can be made to serve a number of tanks, as it can be coupled and uncoupled to J as required.

Method of operating the Tanks.—The crushed ore from the battery, or the "slimes," is introduced into the tank at the top by a launder, or by a pipe from the sludge-pump. If it is desired to treat the material without decantation, the tank is filled to within 1 ft. of the top, and the agitation started and continued as long as necessary, and the treated material is then discharged to the filters through opening J. During the operations of filling and emptying it is advisable to have air issuing from the jets G′ to prevent settlement of the material on the cone. If it is desired to use decantation, the charge is allowed to settle after the tank has been filled, and the clear water or solution is decanted off through pipe K. Cyanide-solution is then introduced through pipe F, supplying casting E, which discharges through pipes E′, E′, &c. The solution finds its way upwards through the body of the ore, and softens the ore around pipe A. When the solution has risen to within 7 ft. or 8 ft. of the top of the pipe A, air is turned on through pipe B, which discharges through valve C. This causes an upward flow of the material through pipe A. When the material has risen to within 2 ft. or 3 ft. of the top of pipe A, the solution is turned from pipe F to pipe H, supplying casting G, which discharges through the eight jets G′, G′. This undermines any material left remaining on the side of the cone, and the whole charge soon becomes a homogeneous mixture of ore and solution.

The solution is shut off as soon as the tank is full, and the quantity of air issuing from pipe B is reduced to the amount required for a suitable circulation.

When the dissolving of the gold and silver is complete, the air is shut off and the charge allowed to settle. The clear solution is then decanted off, and as many washes added, agitated, and decanted off as may be required.

Correct samples can be taken at any time during agitation by means of the simple device here given: A is a short piece of 2 in. pipe, about 18 in. in length, one end, B, being reduced to ½ in. The other end, C, is plugged with an iron or wood plug fitted with a small removable plug D. A cord is fastened to pipe A in such a manner that it has a vertical position with the end B uppermost. The pipe A is lowered into the circulating charge at a speed so regulated that by the time it has reached the bottom of the tank and been pulled up again it has become three-quarters filled with the mixture. The pipe is now well shaken to thoroughly mix the material in it, and by withdrawing the small plug D the contents can be readily emptied into a bucket or other suitable vessel. Two or three of these dips with the apparatus will make a good sample.

After the final wash has been decanted off, water is pumped in in the same manner as a wash, the air turned on, and the charge agitated. It is then sampled, and the discharge-cock at J opened, and the whole charge will run out in a short time without any further trouble.

In treating ore a large percentage of which will settle readily, a considerable saving of time can be effected by not waiting for the solution to settle clear, but decanting it down to the solid sand, and passing the dirty solution through a suitable filtering apparatus. In some cases it is advisable to filter-press the whole charge, and not make use of natural settlement.

A Paper on Barry's Honeycomb Tube-mill Linings, by Mr. H. P. Barry, M.Inst.M.M., Superintendent Waihi Gold-mining Company (Limited).

The introduction of the tube mill has assisted considerably in not only increasing the output of stamp mills, but has been the means of producing a much better and finer product. In cyanide practice I find that where tube mills are used to reduce the size of the ore particles, which have already passed through a coarse mesh, not only is the extraction higher, but the duty per stamp is considerably increased.

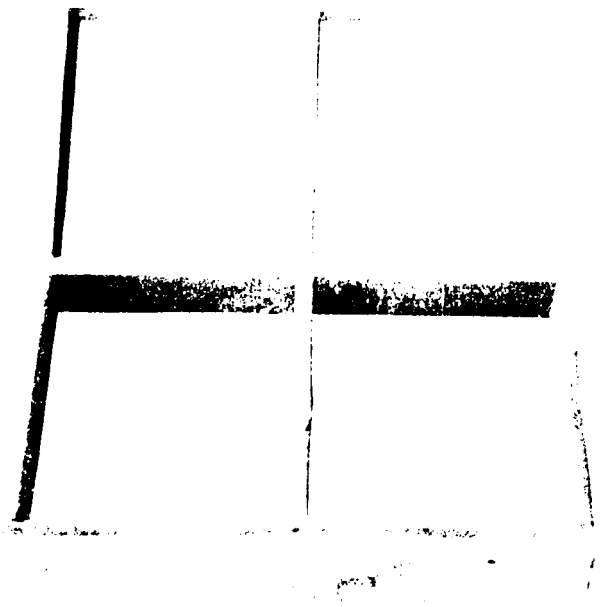


Fig. I. Corner Frame.

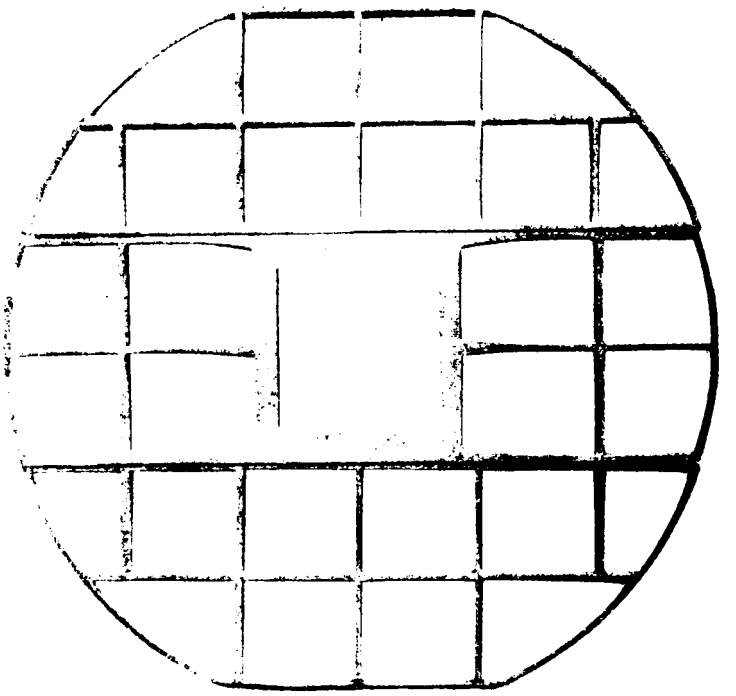


Fig. II. Convenient Share of Frames for Inlet ends, consisting of one Centre Frame and two Side Frames, each same Pattern.

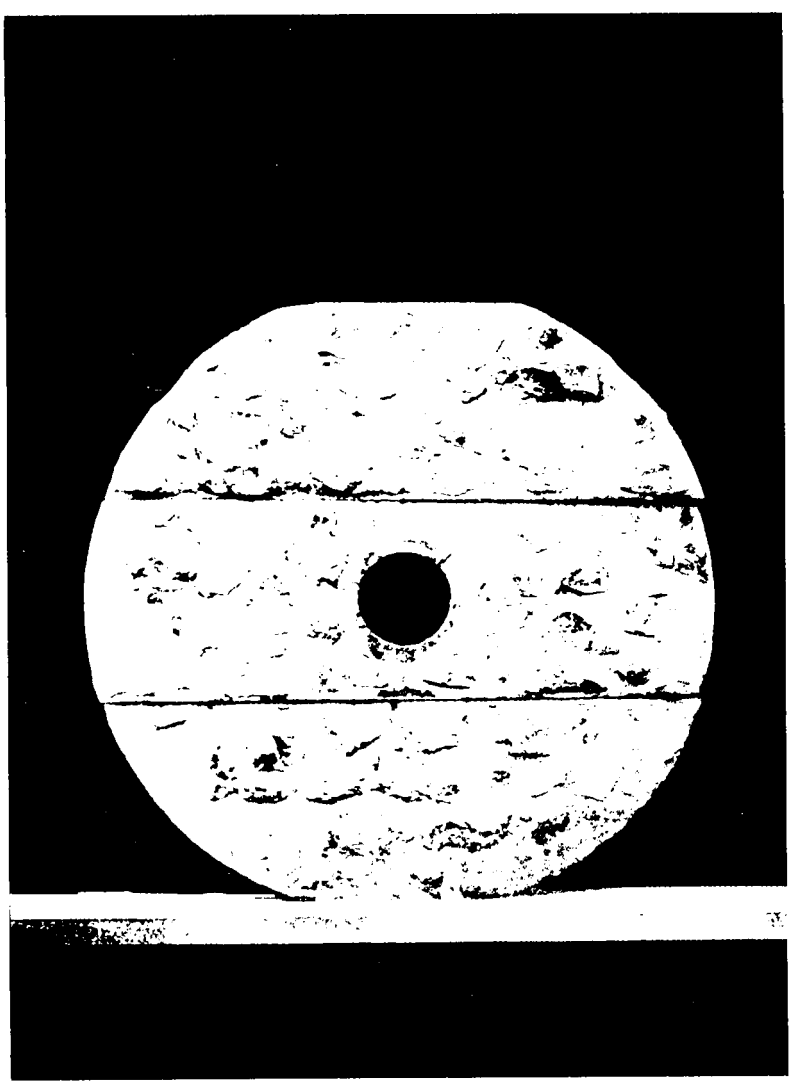
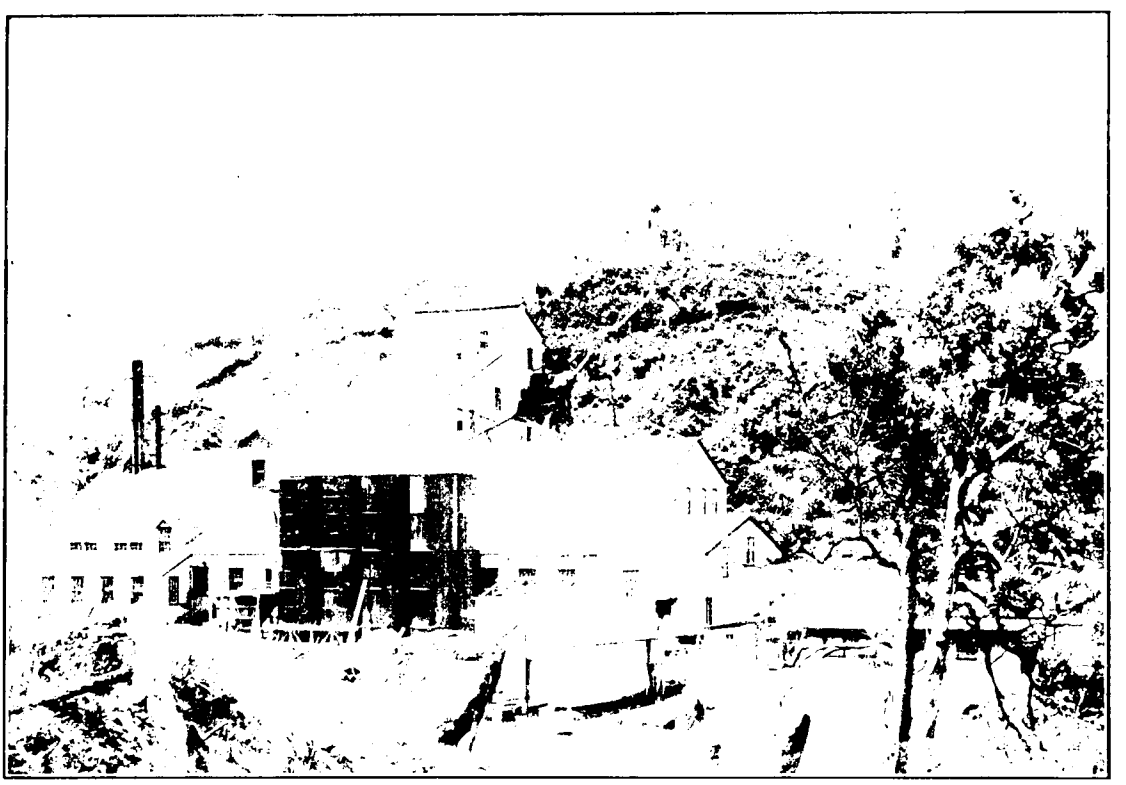


Fig. III. Liner for Inlet ends ready for Use.

Barry's Tube Mill Lining, as used by the Waihi Gold Mining Company (Limited).

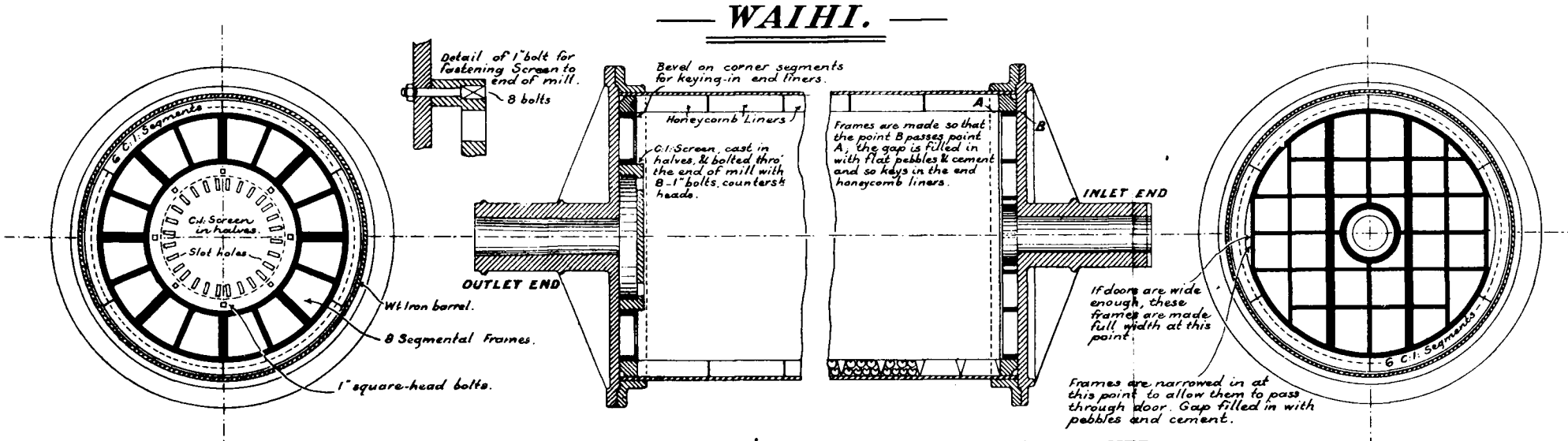
The Agitation of the Charge by Compressed Air is shown on the Top of the Tank.



An Installation of Eight Tanks.

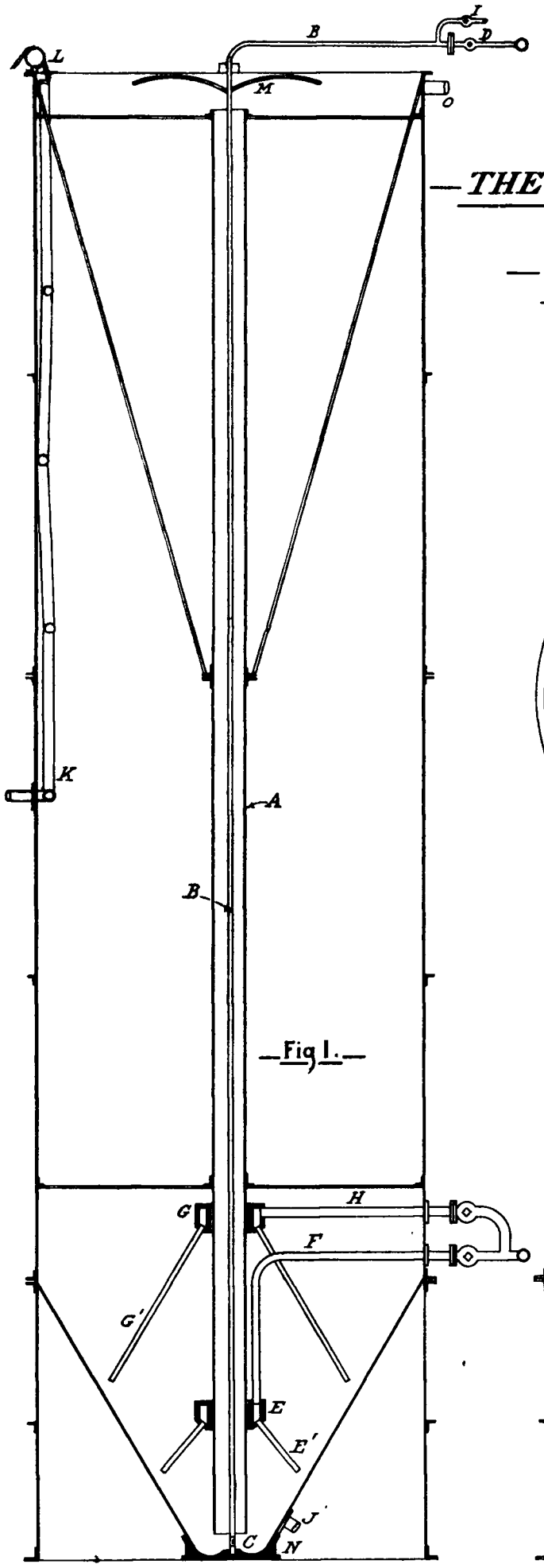
The "B. and M. Circulating-tank" for the Agitation of Pulp with Cyanide.
Extensively used at Waihi and in Mexico (Mr. C. E. Brown, Patentee).

— SPECIAL FEATURES OF ORE REDUCTION & TREATMENT —
— AT —
— WAIHI. —

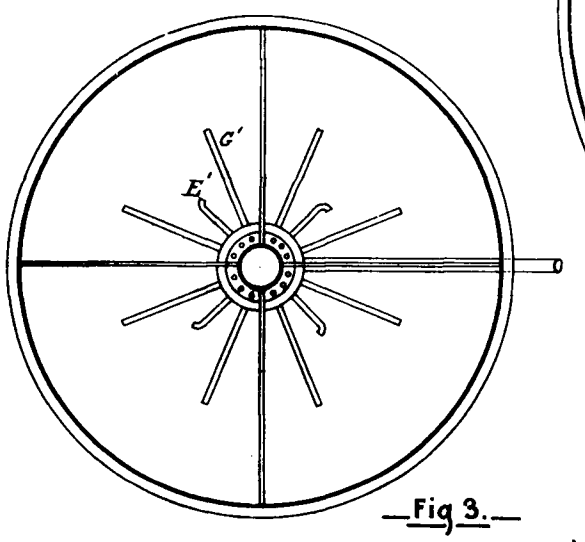


— TUBE MILL with BARRY'S PATENT HONEYCOMB LINER. —

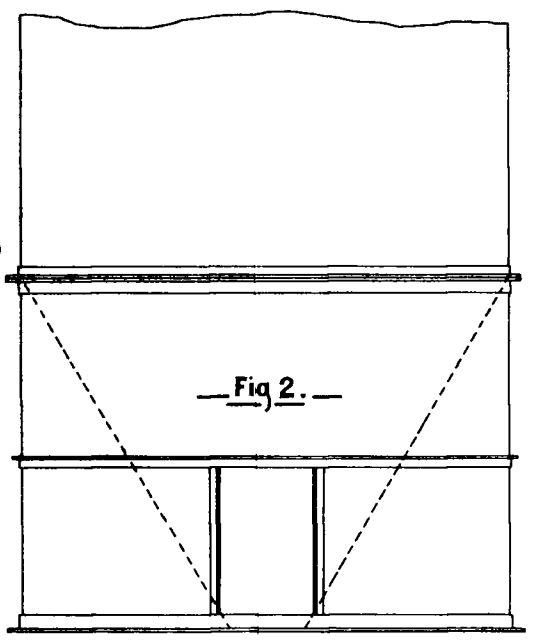
— THE B. & M. CIRCULATING TANK. —
(Patented)
— FOR TREATING 50 TON CHARGES —
— OF FINELY-CRUSHED ORE. —



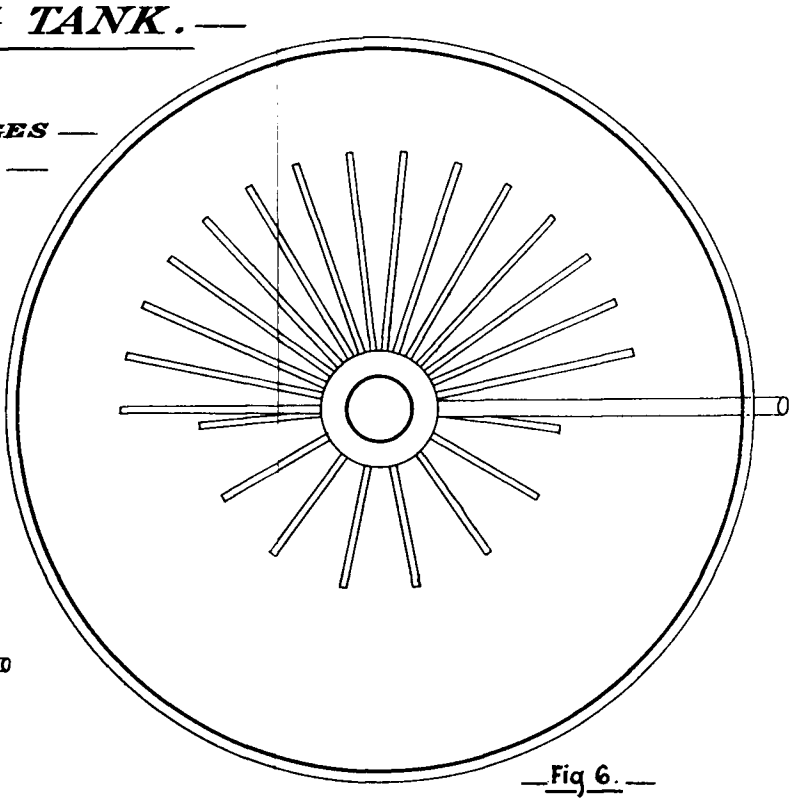
— Fig 1. —



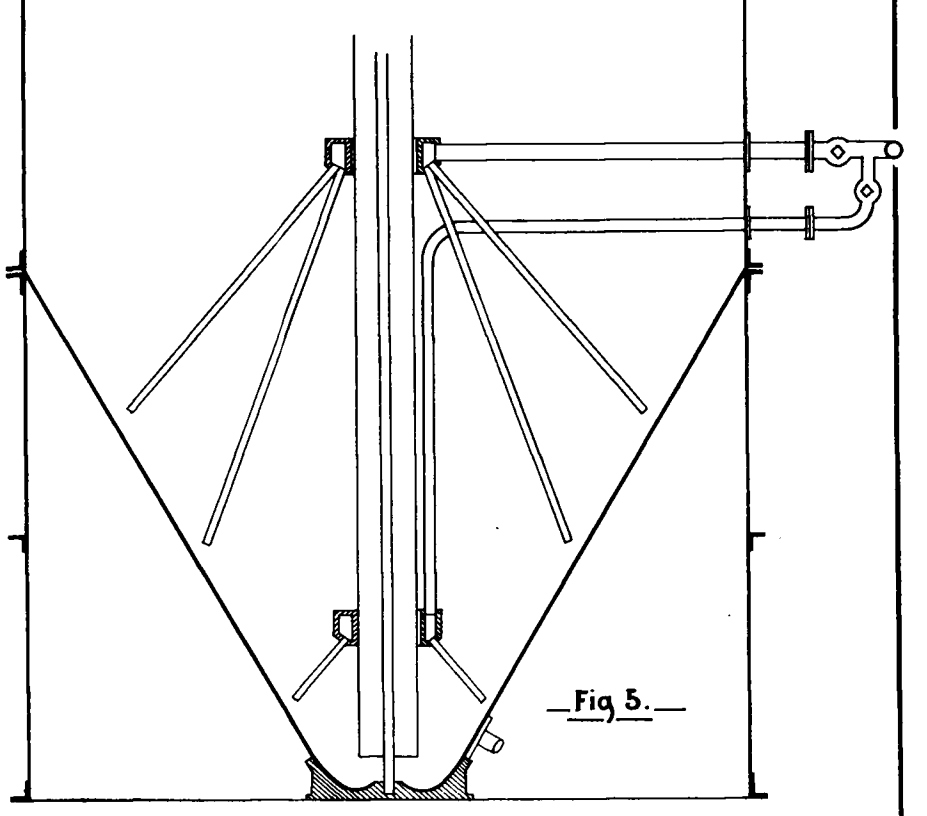
— Fig 3. —



— Fig 2. —



— Fig 6. —



— Fig 5. —

C.H.P. del.

By Authority: John Mackay, Government Printer.

2,450-6/08-334

Notwithstanding the horse-power required, it pays to use tube mills: of this I am convinced. I find in practice, however, that the question of linings is a very serious one; the wear of the flints on both the steel and silex linings increases the cost of upkeep to a very considerable degree. I have, however, overcome this difficulty, and at present the Waihi Gold-mining Company (Limited) and Waihi Grand Junction Gold-mining Company (Limited) are using my patent lining in connection with their tube mills throughout their reduction plants, and by this means are saving a considerable amount annually.

This is a patent method of securing any hard rock in tube mills or other grinding-machines without the costly and sometimes impossible preliminary work of dressing the material into rectangular blocks. Many classes of rock have the wearing quality of silex, but cannot be dressed into shape. The system consists of having suitable frames, being segments fitting the grinding-machine, into which any suitable rock is packed with a good cement mortar. When well set the segments are built into the tube mill with cement.

Frames.—Frames are best made of any cheap quality of cast iron. Their size is limited to the opening into the tube mill. A convenient shape for a frame for a tube mill of 5 ft. diameter is one-eighth of its circumference, and as long as the door will admit, preferably dividing up the distance between the doors in equal parts. Fig. 1 shows such a frame divided into four spaces. A few making-up segments of different sizes are required for fitting the old spaces round the doors left by the standard-size frame.

Filling the Frames.—Have a block of wood dressed to fit the outside diameter of frames, and some plates of iron $\frac{1}{8}$ in. thick, 2 in. larger each way than the frame, with $\frac{5}{8}$ in. hole near the edge at each corner, the plates to be bent to fit frame. With four $\frac{1}{2}$ in. hook-bolts and wing-nuts secure the plate to the frame, putting a piece of old canvas or sack between, so that the plate does not stick to the cement. Then, having the frame, with false bottom attached, placed upon the curved block, pack each division tight with rock in as large pieces as possible, well grouted in with cement mortar. There is no objection to portions of the stone standing up, say, 2 in. above the edges of the frames. It is more important to fit the stones well into the base of the frame than to have a smooth, neat outside surface; the better the base is fitted, the better they hold in when nearly worn out. The mortar can be made of any good Portland cement mixed with equal parts of clean coarse sand. The best sand is obtained by crushing the scrap pieces of worn-out flint pebbles that escape through the outlet of the tube mill.

A light prospecting stamp will crush enough in a few hours through a $\frac{1}{4}$ in. mesh screen to line a tube mill.

After filling, the frames are stacked to harden, wet sacks preferably being put over them. The back plates can be removed the next day if the mortar is firm enough, but the linings will not be ready for use for at least a month, giving, if possible, still more time to harden.

Fitting the Barrel Segments.—In case any difficulty should arise in fitting the barrel segments against the rough faces of the end linings, it is more convenient to have a cast-iron ring in segments cemented into the corner of the mill before starting to put in other linings shown in Fig. 2. If the standard circumferential linings are a fairly neat fit, the last one in each complete ring will be slid into place, but the last one in the last ring must be made a little narrower, so that it can go straight into position, when it is keyed in with any pieces of scrap iron, wooden wedges, or flat stones driven into the mortar.

Casting the Frames.—The patterns are made with sufficient "draw" to leave their own core, and the castings only require fettling on the outside edges and outside diameters. Roughness or lumps left on the inside or slight flaws in the castings are of no account.

Building Linings into Tube Mill.—Clean the interior, and then lay a straight row of linings, starting from one of the doors, bedding them well down in neat cement. This is a point to be carefully attended to, as some tube-mill barrels are very much out of truth, and a segment might bear on its edges only, and have no support under the stone in the divisions.

Five such rows can be laid without moving the mill. The fifth row is then to be supported by a length of wood about 3 in. by 2 in. laid along its centre. This wood is then tightly held with six stretcher bars from the opposite row of linings. The stretcher bars are simply lengths of 1 in. gas-pipe, with a $\frac{7}{8}$ in. bolt in one end, screwed up to head, and an ordinary nut (as shown in Fig. 8). The last row being thus firmly held in position so that it cannot drop down, the mill is turned round so that the last row laid is on top; the sixth row is then put in, the mill again shifted one-eighth turn, and so on to the last or eighth row. Any opening left at the closing-up can be jammed tight with bits of scrap iron, old flat pieces of stone from worn-out linings, or wooden wedges driven into the mortar.

Repairs.—In case the stone filling should fall out of a division, it can be repaired in five minutes by putting in a spare division-frame, previously filled with stone, and keying it into position with dry soft-wood wedges.

In breaking up large blocks of stone a pneumatic chisel is useful, as by running it round a block it makes a starting-point for breaking; a smart blow with a spaulling-hammer then splits the block along the line made by the pneumatic chisel.

Life of Linings.—Of course, this is dependent upon the quality of stone used and the thickness of lining. With frames 3 in. deep, filled with Waihi quartz, linings have lasted over six months; but with frames $3\frac{1}{2}$ in. deep, filled with quartzite, a life of over nine months has been obtained.

There are now twelve tube mills running at Waihi lined with "Honeycomb" linings, the average life of the linings being over double that of imported silex blocks.

(*f*). MINING STATISTICS.

STATEMENT showing the Whole of the QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous and Argentiferous Ores in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1907.

[NOTE.—Under heading "Power employed" the letter H indicates hand; O, oil; S, steam; W, water-power; and E, electricity.

Locality where Machine is situated.	Name of Machine.	Name of Owners.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold-smelting, &c.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Power employed.
Coromandel County.															
Coromandel ..	Telephone ..	Hauraki Gold-mining Co.	..	15	..	8	..	..	3	3	1	..	..	1	S
" ..	Union Beach Tailings Plant	Samuel James	..	..	..	1	1	3	..	1	1	..	1	..	W
" ..	Public battery ..	School of Mines Board (in trust)	..	5	..	2	..	..	1	2	1	..	..	..	O
" ..	Scotty's.. ..	J. T. Martin	..	9	..	8	..	..	1	2	1	..	..	..	S
Tokatea	Tokatea.. ..	Royal Oak of Hauraki Gold-mining Co.	1	15	..	8	..	..	2	2	1	..	..	..	W, S
"	West Tokatea ..	Tokatea Consolidated		3	..	2	..	..	1	1	..	..	..	..	S
Waikoromiko ..	Four-in-Hand ..	Four-in-Hand Gold-mining Co.	..	10	..	2	..	..	1	1	1	1	..	..	S
Cabbage Bay ..	Vizard's ..	C. Blasch	..	4	..	1	..	..	1	1	1	..	..	..	W
Kuaotunu ..	Great Mercury ..	Thompson and others ..	..	10	..	1	..	..	1	4	2	1	1	1	S
" ..	Waitaia ..	Waitaia Gold-mining Co.	..	10	..	2	..	..	1	2	1	1	1	..	S
" ..	Handsworth ..	Louis Woodcock ..	..	3	..	1	..	..	1	1	..	..	..	..	W
" ..	Public Battery ..	..	..	5	..	2	..	..	1	1	1	..	..	..	O
Mercury Bay ..	Mahakirau ..	Coromandel County (in trust)	..	3	..	1	..	..	1	1	..	..	..	..	S
Thames County.															
Gumtown	Kapowai ..	Kapowai Gold-mining Co.	..	8	..	3	..	..	1	1	1	1	..	..	S
"	Big Beetle ..	Big Beetle Gold-mining Co.	1	2	..	2	..	..	2	1	..	..	..	..	W
Tapu	Bullion	Plumer Bros.	..	15	..	4	..	..	2	2	1	..	..	..	W
"	Mahara Royal ..	Mahara Royal Gold-mining Co.	..	20	..	18	..	..	2	2	1	..	..	..	W
Waiomo	Monowai ..	Monowai Gold-mining Co.	1	10	1	1	..	2	1	2	1	..	..	..	S, W
Puru	Puru	..	..	10	..	2	..	..	1	1	1	..	..	..	W
Tararu	Day Dawn and Norfolk	Day Dawn and Norfolk Mines (Limited)	..	30	..	6	..	3	2	1	1	1	1	..	S, W
"	New Alburnia ..	New Alburnia Gold-mining Co.	..	20	..	7	..	2	1	3	1	..	..	..	W
"	Eclipse	Eclipse Gold-mining Co.	..	10	..	3	1	..	1	2	1	..	..	..	W
"	Chicago	..	..	10	..	2	1	..	1	1	..	..	..	..	W
Karaka	Claremont ..	George Bryant	..	1	..	1	..	..	1	1	..	..	..	..	W
"	Junction ..	McGregor and Taylor ..	..	5	..	1	..	..	1	1	..	..	..	..	W
"	Arrindell ..	George A. Dugall ..	1	5	..	3	..	..	1	1	1	..	..	..	S
Hape	Fortuna.. ..	H. H. Adams	..	5	..	2	..	..	1	1	1	..	..	..	W
"	Anchor	James Middleton ..	..	5	..	2	..	..	1	1	1	..	..	..	W
Kirikiri	Kirikiri ..	Kirikiri Gold-mining Co.	..	5	..	2	..	..	1	1	1	..	..	..	S
Puriri	Puriri	Puriri Gold Estates Gold-mining Co.	..	8	..	2	..	..	1	1	1	..	..	..	W
"	Hit or Miss ..	J. McInnis	..	6	..	2	..	..	1	1	1	..	..	..	S, W
Tairua	Tairua Broken Hills	Tairua Broken Hills Gold-mining Co.	1	20	..	6	..	..	1	1	1	1	1	..	S, W
"	Golden Belt ..	Golden Belt Gold-mining Co.	1	40	..	..	..	3	1	1	1	1	1	..	W
"	Taihoa	Taihoa Gold-mining Co.	1	10	..	2	..	..	1	1	1	1	1	..	W
"	Taniwha ..	Taniwha Gold-mining Co.	..	3	..	1	..	..	1	1	1	..	..	..	O
"	Coronation ..	Coronation Gold-mining Co.	..	5	..	1	..	..	1	1	..	..	..	..	S
Whangamata ..	Auckland ..	Auckland Gold-mining Co.	1	10	..	1	..	..	1	1	1	1	1	1	W, S
Ohua	Waihua ..	..	..	2	..	1	..	..	1	1	1	..	..	..	W
Omahu	Omahu	Omahu Gold-mining Co.	..	10	..	2	..	..	1	1	1	..	..	..	S
"	Klondike ..	..	..	5	..	2	..	..	1	1	..	..	..	..	W
Thames Borough.															
Thames Borough ..	Kuranui ..	Kuranui Gold-mining Co.	..	20	..	6	..	..	2	2	1	..	..	..	W
" ..	Moanataiari ..	H. H. Adams	..	60	..	21	4	..	2	6	1	1	1	1	S, W
" ..	Comer's ..	Kuranui-Caledonian Gold-mining Co.	..	20	..	5	..	..	2	2	1	..	..	..	W
" ..	Adam's	H. H. Adams	..	..	..	2	9	..	..	..	..	..	..	..	W
" ..	May Queen ..	May Queen Gold-mining Co.	..	33	..	8	3	..	2	3	2	..	..	..	W
" ..	Waiotahi ..	Waiotahi Gold-mining Co.	..	21	..	5	..	2	2	1	..	..	..	..	S
" ..	New Battery ..	"	2	40	..	5	..	..	..	..	..	..	..	..	W
" ..	Cambria ..	"	..	..	..	2	7	..	..	..	..	..	..	..	W
" ..	Thames	Thames Gold-mining Co.	..	21	..	16	..	..	2	2	1	..	..	..	W
" ..	School of Mines ..	School of Mines Board (in trust)	1	2	..	1	1	1	3	3	1	4	1	..	W
" ..	May Queen Extended	May Queen Extended Gold-mining Co.	..	23	..	14	..	..	2	4	1	..	..	..	W

STATEMENT showing the Whole of the QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous and Argentiferous Ores in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1907—*continued*.

Locality where Machine is situated.	Name of Machine.	Name of Owners.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold-melting, &c.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Number of Tube-mills.	Power employed.
Thames Borough—*ctd*																
Thames Borough ..	Bank of New Zealand	Bank of New Zealand ..	..	..	..	..	..	..	2	2	1	1	..	..	..	H
" ..	Bank of New South Wales	Bank of New South Wales	..	..	..	..	..	..	2	2	1	1	..	..	..	H
Ohinemuri County.																
Paeroa	Bank of New Zealand	Bank of New Zealand ..	1	..	..	..	..	..	2	1	1	1	..	..	..	H
Karangahake ..	Crown	New Zealand Crown Mines (Limited)	2	60	..	4	..	..	2	2	1	1	1	..	..	S, W
" ..	Woodstock ..	Talisman Consolidated Gold-mining Co.	2	40	..	2	..	..	2	2	1	1	1	1	..	S, W
Komata	Komata Reefs ..	Komata Reefs Gold-mining Co.	4	60	..	5	..	..	3	3	1	1	1	1	..	S, W
Waitekauri ..	Waitekauri ..	Waitekauri Gold-mining Co.	2	20	..	4	..	..	2	2	1	1	1	1	2	S, W
" ..	Grace Darling ..	Ditto	..	10	..	2	..	..	1	1	..	..	..	..	..	W
" ..	Portsea	Chalis and party ..	1	10	..	3	..	..	1	2	1	1	1	..	..	S, W
" ..	Jubilee	..	..	5	..	2	..	..	..	..	..	..	..	..	..	W
" ..	Maoriland ..	Maoriland Gold-mining Co.	..	10	..	5	2	1	1	2	1	1	1	..	..	S
Maratoto	Maratoto ..	Maratoto Gold-mining Co.	..	9	..	..	..	2	1	1	1	1	1	..	..	W
" ..	Hikutaia ..	Hikutaia Gold Company	.. 1	10 5	.. ..	2 2	.. ..	.. ..	1 1	2 2	1 1	1 1	.. ..	.. ..	.. ..	S S
Waihi Borough.																
Waihi	Waihi Gold Reefs	Waihi Gold Reefs Syndicate	1	5	..	..	..	..	1	1	..	..	..	..	..	O
"	Grand Junction ..	Waihi Grand Junction Gold-mining Co.	4	40	2	1	1	4	2	1	5	4	1	1	4	E
"	Waihi	Waihi Gold-mining Co. ..	2	90	..	5	..	..	3	6	1	1	1	1	2	S, W
"	Union-Waihi ..	" ..	2	40	..	2	..	..	2	2	1	1	1	1	..	S, W
Waikino	Waikino ..	" ..	4	200	..	12	..	..	3	4	1	1	1	1	9	S, W
Piako	Waiorongomai ..	E. H. Hardy	1	10	..	4	1	..	2	2	1	1	1	1	..	W
Great Barrier Island	Barrier Reefs ..	Henry Brett	1	20	..	3	..	2	3	2	1	1	1	1	..	S
" ..	Sunbeam ..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..
Auckland	Bank of New Zealand	Bank of New Zealand ..	..	..	..	1	1	2	6	4	2	..	..	..	..	W
			39	1,261	3	262	32	27	106	124	64	35	23	13	17	

STATEMENT showing QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous Ores in the MARLBOROUGH, NELSON, and WESTLAND MINING DISTRICTS for the Year ended the 31st December, 1907.

[NOTE.—Under heading "Power employed" the letter H indicates hand; O, oil; S, steam; and W, water-power.]

Locality where Machine is situated.	Name of Machine.	Name of Owner.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold-melting or retort'g	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Plants for Chlorination.	Number of Concentrating Plants.	Power employed.
Marlborough County.																
Top Valley ..	Wellington ..	T. Y. Young and P. K. Watty	..	10	..	1	..	..	..	..	2	..	..	..	..	S
" ..	Jubilee	Wairau Valley Gold-mining Co. (Limited)	..	10	..	..	..	..	..	1	2	1	1	..	..	W
Collingwood County.																
Taitapu	Golden Ridge ..	Taitapu Gold Estates (Limited)	2	20	..	4	..	1	1	2	1	1	..	..	..	W
"	Golden Blocks ..	Golden Blocks (Taitapu) (Limited)	..	8	..	..	..	1	1	2	1	..	..	..	..	S
Buller County.																
Mokihinui ..	Red Queen ..	A. W. Mills	..	2	..	..	..	..	..	1	..	..	..	..	..	W
Waimangaroa ..	Britannia ..	Britannia Gold-mining Co. (Limited)	..	4	..	..	..	..	..	1	..	..	1	..	..	W
" ..	Stony Creek ..	Stony Creek Gold-mining Co. (Limited)	..	10	..	2	..	..	2	2	..	..	..	..	..	W
Lyell	New Alpine ..	New Alpine Gold-mining Co. (Limited)	..	20	..	4	..	1	1	2	..	1	1	..	..	W
Inangahua County.																
Bourke's Creek ..	Gardiner's ..	W. P. Gardiner and Sons ..	..	..	..	12	..	..	1	2	..	..	..	..	..	W
Victoria Range ..	Kirwan's Reward ..	Kirwan's Reward Gold-mining Co. (Limited)	..	15	..	..	..	..	..	1	1	..	..	..	..	W
Capleston ..	Welcome	Howell and Kennedy ..	..	10	..	..	..	..	..	2	1	..	1	..	..	W
" ..	Buller United ..	John Knight and party ..	..	5	..	..	..	..	..	1	..	..	..	..	..	S
" ..	Phœnix	Phœnix Quartz-mining Syndicate	..	5	..	..	..	..	..	1	..	..	1	..	..	O
Reefton	Golden Fleece ..	Consolidated Goldfields of New Zealand (Limited)	1	20	..	1	..	..	..	2	1	1	1	..	1	S
"	Wealth of Nations ..	Ditto	..	20	..	1	..	..	2	2	1	..	1	..	1	W
"	Keep-it-Dark ..	Keep-it-Dark Quartz-mining Co. (Limited)	..	20	..	4	..	1	1	2	1	1	1	..	1	W
"	Progress Mines ..	Progress Mines of New Zealand (Limited)	3	65	..	1	..	..	2	2	1	1	1	1	1	W
"	Golden Point ..	G. Perotti	..	10	..	2	..	..	..	1	..	..	..	..	..	W
"	New Scotia ..	New Scotia Gold-mining Co. (Limited)	..	10	..	1	..	..	1	1	..	..	..	..	..	S
"	Golden Lead ..	New Big River Gold-mining Co. (Limited)	..	10	..	..	..	..	1	..	..	..	..	..	..	W
"	Last Chance ..	Alex. Fleming and party ..	..	5	..	..	..	..	1	1	..	..	1	..	..	S
"	Big River ..	New Big River Gold-mining Co. (Limited)	..	10	..	4	..	..	2	2	1	1	1	..	..	W
"	King George ..	St. George Gold-mining Co. (Limited)	..	5	..	..	..	..	1	1	..	..	..	..	..	W
"	Inglewood ..	Inglewood Gold-mining Syndicate	..	10	..	..	..	..	..	1	..	1	1	..	..	S
Grey County.																
Paparoa Ranges ..	Garden Gully ..	Garden Gully Gold-mining Co. (Limited)	..	10	..	1	..	..	1	1	..	..	..	..	..	W
Ten-mile Creek ..	Taffy	C. Curtis	..	5	..	1	..	..	..	1	..	..	..	..	..	W
Westland County.																
Ross	Osmers and party's	Osmers and party ..	..	5	..	..	..	..	..	1	..	..	..	..	..	W
			6	324	..	39	..	4	18	36	13	8	12	1	4	

QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous Ores in the SOUTHERN MINING DISTRICT for the Year ended the 31st December, 1907.

Locality where Machine is situated.	Name of Machine.	Name of Owner.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold-melting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Power employed.
Tuapeka County.															
Waipori	Otago Pioneer Quartz	Otago Pioneer Quartz (Waipori) Gold-mining Co.	1	10	..	..	..	..	1	1	1	1	..	1	S
"	Victoria	R. Cotton	..	5	..	..	..	..	..	..	..	..	..	..	W
Bruce County.															
Waitahuna ..	Burnt Creek ..	Table Hill Quartz-mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
" ..	Canada	Canada Reef Gold-mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
" ..	Last Chance ..	Park and Co.	..	5	..	..	..	..	..	..	..	..	..	..	W
Lake County.															
Queenstown ..	Invincible ..	Invincible Gold-mining Co.	..	10	..	7	..	..	1	..	..	..	1	1	W
Macetown	Premier	Premier Sunrise (N.Z.) Gold-mining Co.	1	20	..	2	..	1	1	1	1	1	1	..	W
"	Anderson and Party	Anderson and party ..	..	10	..	..	..	..	..	..	..	..	..	..	W
"	Tipperary ..	D. McKay and party ..	..	10	..	1	..	1	..	1	1	1	1	..	W
Skipper's	Shotover ..	Shotover Consolidated Mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
" ..	Reefton United ..	Reefton United Gold-mining Co.	..	2	..	..	..	..	..	..	..	..	..	..	O
Bullendale ..	Achilles	Mount Aurum Gold-mining Co.	1	30	..	..	..	..	1	1	1	1	..	..	W
Fiord County.															
Te Oneroa ..	New Star ..	New Star Gold-mining Co.	..	10	..	14	..	..	..	..	..	..	..	..	S, W
" ..	Alpha Dawn ..	Alpha Dawn Gold-mining Co.	..	10	..	2	..	..	..	..	..	..	..	..	W
" ..	Golden Site ..	Golden Site Gold-mining Co.	..	10	..	4	..	..	..	..	..	..	..	..	W
Cuttle Cove ..	Crown	Wm. Todd	..	5	..	..	..	..	..	..	..	..	..	..	W
Vincent County.															
Bannockburn ..	Day Dawn ..	Lawrence Bros. ..	..	4	..	1	..	..	1	..	..	..	..	..	W
" ..	Carrick	James Lawrence ..	..	10	..	..	..	..	1	..	..	..	..	..	W
" ..	Star of the East ..	Lawrence Bros. ..	..	10	..	..	..	..	..	..	..	..	..	..	W
" ..	Go-bye	J. B. Holliday	..	10	..	..	..	..	..	..	..	..	..	..	W
" ..	..	Macabe and Son ..	..	2	..	..	..	..	..	..	..	..	..	..	W
Bendigo	Bendigo ..	Cromwell Proprietary Gold-mining Co.	..	20	..	4	..	..	1	1	1	1	..	..	S, W
"	Alta	Alta Gold-mining Co. ..	..	4	..	..	..	..	..	..	..	..	..	..	O
Bald Hill Flat ..	Excelsior ..	Gray and Holden ..	..	3	..	..	..	..	1	1	1	..	..	..	W
" ..	White's Reef ..	R. T. Symes	..	5	..	1	..	..	1	1	1	..	..	..	W
" ..	Nicholson's Reef ..	..	..	10	..	..	..	..	..	..	..	..	..	..	W
Alexandra	Conroy's Gully ..	J. N. Robertson and party	..	5	..	..	..	..	..	..	..	..	..	..	W
Maniototo County.															
Hyde	Highlay Gold and Scheelite Mining Co.	Highlay Gold and Scheelite Mining Co.	..	12	..	..	..	..	..	..	..	..	..	1	W
"	N.Z. Gold and Tungsten	W. and G. Donaldson ..	2	10	1	..	..	..	..	..	..	..	..	1	O, S
"	Gilmour & Matheson	Gilmour and Matheson ..	..	5	..	..	..	..	..	..	..	..	..	1	PG
Serpentine ..	..	John Cogan	..	10	..	..	..	..	..	..	..	..	..	..	W
Rough Ridge ..	Great Eastern ..	F. H. Perry	..	5	..	..	1	..	..	1	1	..	..	..	W
Waihemo County.															
Macrae's	Maritana ..	C. McGill	..	6	..	..	..	..	..	..	..	..	..	1	O, W
"	Ounce	Ounce Gold-mining Co. ..	..	8	..	..	..	..	..	..	..	..	..	..	W
"	Bonanza ..	L. O. Beal, jun. ..	1	5	1	..	1	..	1	1	1	..	..	..	W
"	United	Gilmour and party ..	..	5	..	1	..	..	1	1	1	..	..	..	S
"	Golden Point ..	W. and G. Donaldson ..	1	10	1	1	2	..	1	1	..	1	..	2	S, W
Stoneburn ..	Golden Bar ..	Golden Bar Gold-mining Co.	..	10	..	..	..	..	1	1	1	..	1	..	S
" ..	Gilivern	A. G. Davies	..	5	..	..	..	..	..	1	..	..	..	..	S, W
Taieri County.															
Hindon	Parker's	A. Parker	..	4	..	..	..	..	..	..	..	..	..	..	O
Barewood	Barewood	Barewood Gold-mining Co.	1	10	..	..	..	..	1	1	..	1	2	1	P G
Matarae	Matarae ..	Matarae Gold-mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
Dunedin City ..	School of Mines ..	Otago University ..	1	3	..	1	..	..	1	..	..	..	1	..	Gas
			9	368	3	39	4	2	15	14	11	7	7	9	

NOTE.—P.G. means Producer Gas Plant.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1907.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
GREAT BARRIER ISLAND.					
Sunbeam	3	Tons cwt. qr. lb. 410 0 0 0	Oz. dwt. ..	Oz. dwt. 923 0	£ s. d. 646 9 5
COROMANDEL COUNTY.					
Waikoromiko—					
Four-in-Hand	4	0 11 1 1	127 1	..	368 13 3
Tokatea—					
Royal Oak	16	54 9 1 9	1,028 10	..	2,567 16 6
Tokatea	2	0 10 1 0	78 14	..	210 0 0
Harbour View	2	0 10 0 0	1 12	..	4 8 0
Monte Christo	2	3 0 0 0	3 0	..	5 5 0
Exalt	2	0 10 0 0	1 15	..	2 16 0
	24	58 19 2 9	1,113 11	..	2,790 5 6
Kapanga—					
Kapanga	7	50 0 0 20	100 0	..	300 0 0
Buffalo	2	0 10 0 0	10 5	..	28 2 0
	9	50 10 0 20	110 5	..	328 2 0
Hauraki Block—					
Old Hauraki	18	10 0 0 0	66 8	..	182 9 0
Hauraki Freehold	12	13 0 0 0	260 13	..	754 0 0
Trig Hill	2	4 0 0 0	4 10	..	12 8 0
Bunkers Hill	5	10 0 0 0	0 17	..	2 3 0
	37	37 0 0 0	332 8	..	951 0 0
Kennedy Bay—					
Golden Hill	2	2 15 0 0	15 0	..	37 10 0
Driving Creek—					
Pretty Jane	2	3 0 0 0	1 13	..	4 10 0
Whangapoua—					
Whangapoua	2	0 15 0 0	12 15	..	35 16 0
Kuaotunu—					
Waitaia	2	36 0 0 0	64 4	22 13	237 15 0
Handsworth	2	53 0 0 0	41 8	..	103 2 3
	4	89 0 0 0	105 12	22 13	340 17 3
	84	242 11 0 2	1,818 5	22 13	4,856 14 0
Sundries	3	72 0 0 0	69 10	..	191 3
Totals	87	314 11 0 2	1,887 15	22 13	5,047 17 0
THAMES COUNTY AND BOROUGH.					
Gumtown—					
Kapowai	13	460 0 0 0	266 2	..	569 11 3
Tararu—					
Tararu Creek	2	0 0 0 5	15 8	..	30 10 0
Day Dawn and Norfolk Mines ..	10	600 0 0 0	196 2	..	538 15 11
Waitangi	8	25 1 1 1	147 15	..	500 15 1
Watchman	4	2 0 0 0	2 2	..	6 7 0
Little Maggie	1	0 0 0 5	4 17	..	12 2 6
Hector MacDonald	1	0 0 0 22	5 0	..	13 0 0
	26	627 1 2 5	371 4	..	1,101 10 6
Moanataiari—					
Moanataiari	8	100 0 0 0	62 11	..	161 9 8
Kurunui-Caledonian	10	26 6 0 11	48 6	..	125 8 11
Old Alburnia	20	111 2 1 1	377 19	..	981 18 1
	38	237 2 1 12	488 16	..	1,268 16 8
Waiotahi—					
Waiotahi	122	11,562 9 2 5	52,611 17	3,299 17	149,883 11 1
Thames	10	32 1 1 2	48 5	..	129 13 1
Golden Drop	1	4 0 0 0	8 4	..	22 4 5
Ballarat	2	3 0 3 2	65 19	..	177 16 0
Trafalgar	2	5 0 0 0	2 6	..	6 0 0
West Coast	1	8 0 0 0	5 0	..	12 0 0
Old Vale of Avoca	2	0 0 0 15	12 13	..	33 0 0
	140	11,614 11 2 24	52,754 4	3,299 17	150,214 4 7

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1906—*continued.*

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
THAMES COUNTY AND BOROUGH—*continued.*					
Kuranui—					
Kuranui	6	Tons cwt. qr. lb. 206 0 0 0	Oz. dwt. 351 0	Oz. dwt. ..	£ s. d. 827 11 3
Grahamstown—					
Victoria	9	73 1 0 8	270 10	..	759 8 3
New Saxon	6	101 0 0 0	53 0	..	154 4 9
	15	174 1 0 8	323 10	..	913 13 0
Waiokaraka—					
New May Queen	32	2,692 2 3 3	1,315 13	..	3,770 16 11
Karaka—					
Claremont	1	0 2 0 3	321 11	..	861 19 0
Arrindell	6	0 0 1 9	11 5	..	32 8 11
Southern Queen	6	51 10 0 11	81 18	..	177 11 0
Highlander	1	0 1 0 4	72 13	..	146 15 2
May Queen Extended	6	23 0 0 5	52 9	..	106 18 0
	20	74 13 2 4	539 16	..	1,325 12 1
Hape Creek—					
Lord Nelson	2	0 1 1 4	88 5	..	232 14 0
Daisy	2	0 0 2 9	31 2	..	80 5 6
Reliance	4	67 0 0 0	77 8	..	209 17 3
Summer Hill	2	1 0 0 0	0 9	..	1 3 0
Weymouth	2	13 0 0 3	7 9	..	19 4 0
New Dart	8	90 0 1 4	76 13	..	212 0 2
Adventure	2	10 0 0 0	10 4	..	27 11 0
	22	181 2 0 20	291 10	..	782 14 11
Tairua—					
Tairua Broken Hills	60	2,501 0 0 0	2,679 2	2,711 17	11,321 2 0
Golden Belt	45	3,050 0 0 0	2,048 4	..	4,753 18 10
Tairua Triumph	7	2 0 0 0	22 13	..	63 17 3
	112	5,553 0 0 0	4,749 19	2,711 17	16,138 18 1
Kirikiri					
Kirikiri	9	275 0 0 0	289 10	..	745 1 6
Puriri and Omahu—					
Miners' Right	5	150 0 2 2	381 5	..	816 4 11
Omahu Reefs	3	78 0 0 0	130 1	249 4	299 1 7
	8	228 0 2 2	511 6	249 4	1,115 6 6
Whangamata—					
Auckland	2	350 0 0 0	280 11	..	512 11 10
Waimangu	2	11 0 0 0	14 2	18 10	53 16 10
	4	361 0 0 0	294 13	18 10	566 8 8
Maratoto—					
Maratoto	10	954 0 0 0	147 14	2,850 17	864 12 6
Silver Stream	4	14 11 0 4	by smelting	7,081 5	964 10 0
	14	968 11 0 4	147 14	9,932 2	1,829 2 6
Totals	459	23,652 6 2 26	62,694 17	16,211 10	181,169 8 5
WAIHI BOROUGH.					
Waihi	1,500	356,974 0 0 0	101,640 0	1,230,981 0	826,009 15 1
Grand Junction	293	40,875 0 0 0	11,539 15	66,914 18	71,741 14 11
Totals	1,793	397,849 0 0 0	113,179 15	1,297,895 18	897,751 10 0
OHINEMURI COUNTY.					
Waitekauri—					
Waitekauri	13	254 0 0 0	152 9	..	265 17 6
Maoriland	8	934 0 0 0	269 17	740 16	1,234 14 0
Scotia	1	10 4 0 0	27 13	..	52 2 3
Durbar	4	110 0 0 0	..	50 0	49 12 3
	26	1,308 4 0 0	449 19	790 16	1,602 6 0

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1908.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
OHINEMURI COUNTY—*continued.*					
Karangahake—		Tons cwt. qr. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Talisman	320	46,025 0 0 0	63,496 7	217,457 17	184,445 13 1
New Zealand Crown	160	22,072 0 0 0	..	31,416 6	57,242 5 11
	480	68,097 0 0 0	63,496 7	248,874 3	241,687 19 0
Komata—					
Komata Reefs	170	28,430 0 0 0	5,582 15	49,404 19	47,128 15 1
Totals	676	97,835 4 0 0	69,529 1	299,069 18	290,419 0 1
SUMMARY.					
Great Barrier	3	410 0 0 0	..	923 0	646 9 5
Coromandel County	87	314 11 0 2	1,887 15	22 13	5,047 17 0
Thames County and Borough	459	23,652 6 2 26	62,694 17	16,211 10	181,169 8 5
Waihi Borough	1,793	397,849 0 0 0	113,179 15	1,297,895 18	897,751 10 0
Ohinemuri County	676	97,835 4 0 0	69,529 1	299,069 18	290,419 0 1
1907	3,018	520,061 1 3 0	247,291 8	1,614,122 19	1,375,034 14 11
1906	2,889	464,237 3 2 6	372,320 13	1,454,082 8	1,312,720 9 10
Increase	129	55,823 18 0 22	125,029 5*	160,040 11	62,314 5 1

During the year 177 men were employed on unproductive works. * Decrease.

STATEMENT showing QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the MARLBOROUGH, NELSON, AND WESTLAND MINING DISTRICTS for the Year ended 31st December, 1907.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
		Tons.	Amalgamation.	Cyanide.	
Marlborough—			Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Jubilee	8	50	15 0 0	..	55 6 0
Collingwoood—					
Golden Blocks	27	1,700	1,463 18 0	..	5,865 1 11
Westport—					
Red Queen	7	140	124 16 0	..	490 5 3
Britannia	6	215	78 10 1	35 7 6	384 9 8
	13	355	203 6 1	35 7 6	874 14 11
Boatman's—					
Buller United	2	65	50 3 10	..	200 2 0
eefton—					
Golden Fleece	100	11,991	4,253 17 4	906 17 0	19,934 17 0
Wealth of Nations	75	13,690	4,456 3 0	1,994 2 0	24,535 13 11
Keep-it-Dark	56	13,441	2,811 16 5	1,332 3 0	15,795 3 1
Progress	320	55,305	16,924 11 0	5,900 16 0	87,805 8 3
Big River	16	685	1,059 3 0	..	4,285 8 9
Phœnix	8	247	146 0 0	..	516 15 0
Golden Lead	2	18	24 0 0	..	96 0 0
Golden Point	3	100	18 13 2	..	72 13 5
	580	95,477	29,694 3 11	10,133 18 0	153,041 19 5
Greymouth—					
Taffy	3	380	121 5 8	..	495 13 6
SUMMARY.					
Marlborough	8	50	15 0 0	..	55 6 0
Collingwood	27	1,700	1,463 18 0	..	5,865 1 11
Westport	13	355	203 6 1	35 7 6	874 14 11
Boatman's	2	65	50 3 10	..	200 2 0
Reefton	580	95,477	29,694 3 11	10,133 18 0	153,041 19 5
Greymouth	3	380	121 5 8	..	495 13 6
	633	98,027	31,547 16 6	10,169 5 6	160,532 17 9

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the SOUTHERN MINING DISTRICT for the Year ended the 31st December, 1907.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
LAKE COUNTY.					
		Tons.	Oz. dwt.	Oz. dwt.	£ s. d.
Macetown—					
O'Neill and Hamilton (late McKay and party)	2	443	165 3	..	660 0 0
Skipper's—					
Shotover	4	441	148 5	..	570 15 8
VINCENT COUNTY.					
Bannockburn—					
Star of the East	1	70	23 7	..	83 19 0
Go-bye	1	9	1 15	..	3 15 2
Totals	2	79	25 2	..	87 14 2
Bald Hill Flat—					
Sundries	4	153	155 0	..	596 0 0
Alexandra—					
Conroy's Gully	1	11	10 10	..	40 7 6
MANIOTOTO COUNTY.					
Hyde—					
Highlay Gold and Scheelite	2	Returns included under Sundries.			
N.Z. Gold and Tungsten	13				
WAIHEMO COUNTY.					
Macrae's—					
Sundries	30	3,000	698 8	12 0	2,806 1 6
TAIERI COUNTY.					
Barewood—					
Barewood	22	2,886	900 7	..	3,568 0 5
BRUCE COUNTY.					
Canada Reefs—					
Canada Reefing Company	9	1,177	185 9	..	675 1 0
SUMMARY.					
Lake County	6	884	313 8	..	1,230 15 8
Vincent County	7	243	190 12	..	724 1 8
Maniototo County	15	Included in	Waihemo County		..
Waihemo County	30	3,000	698 8	12 0	2,806 1 6
Taieri County	22	2,886	900 7	..	3,568 0 5
Bruce County	9	1,177	185 9	..	675 1 0
Totals	89	8,190	2,288 4	12 0	9,004 0 3

STATEMENT of VALUE of GOLD WON from QUARTZ CRUSHED for ALL DISTRICTS for the Years ended the 31st December, 1906 and 1907.

Mining District.	Year ended the 31st December, 1906.	Year ended the 31st December, 1907.
	£	£
Hauraki	1,312,720	1,375,035
Marlborough, Nelson, and West Coast	169,929	160,533
Otago and Southland...	11,438	9,004
Totals	1,494,087	1,544,572

GROSS TOTALS and VALUE of GOLD PURCHASED by BANKS for Year ended the 31st December, 1907.

Bank.	Gold purchased.	Value.
Hauraki Mining District.		
	Oz. dwt. gr.	£ s. d.
Bank of New Zealand	150,780 9 0	226,588 4 6
Bank of New South Wales	7,092 7 12	14,031 16 9
National Bank of New Zealand	604 1 0	831 17 2
Totals	158,476 17 12	241,451 18 5
Marlborough, Nelson, and Westland Mining Districts.		
Bank of New Zealand	22,466 19 8	87,701 13 10
National Bank of New Zealand	17,163 19 11	67,034 15 11
Bank of New South Wales	10,079 2 23	39,856 8 5
Union Bank of Australia	3,150 0 0	12,521 0 0
Totals	52,860 1 18	207,113 18 2
Otago and Southland Districts.		
Bank of New Zealand	70,928 19 14	273,314 19 5
Bank of New South Wales	5,226 6 14	20,273 0 10
National Bank of New Zealand	27,763 1 8	119,048 11 7
Bank of Australasia	12,060 14 0	47,707 0 0
Union Bank of Australia	7,712 9 5	29,950 12 5
Private buyers	4,620 19 12	17,723 19 8
Totals	128,312 10 5	508,018 3 11
Grand totals	339,649 9 11	956,584 0 6

STATEMENT showing the NET EXPENDITURE out of PUBLIC WORKS FUND on ROADS on GOLDFIELDS during Year ended the 31st March, 1908.

ROADS ON GOLDFIELDS.

	£ s. d.
Vote No. 107.—Item No. 1. Assistance towards the construction and repair of roads tramways, and tracks in mining and mineral districts, prospecting and minor works for the development of mineral resources, and for the extraction of metals from the ores	6,964 14 8
2. Roads to open up mineral lands	249 4 1

AUCKLAND.

Coromandel County.

6. Cabbage Bay, Port Charles, and Cape Colville	100 0 0
7. Tairua–Whenuakite	100 0 0
8. Coromandel–Kuaotunu, *via* Matarangi	121 0 0
9. Tiki–Kaimarama	210 0 0
10. Tiki–Manaia	100 0 0
11. Manaia–Waikawau	186 0 0
12. Mercury Bay, Whenuakite, and Boat Harbour	100 0 0
14. Whitianga–Gumtown	142 0 0
15. Kikowhakarere–Cabbage Bay	150 0 0
16. Extending Wharf Road, Coromandel	135 0 0
17. Whitianga–Kaimarama	100 0 0
18. Ward's Road–Cape Colville	150 0 0
19. Kauris–Mahakirau	450 0 0
21. Colville II–Moehau II–Harataunga I Blocks	100 0 0
23. Mercury Bay Wharf (repairs)	200 0 0
24. Tokatea – Kennedy Bay	100 0 0
25. Kauris–Ecclestone's	160 0 0
26. Midas Gully Track (repairs)	130 0 0
27. Success Mine Road (repairs)	50 0 0
28. Gumtown–Kapawai Goldfield	274 0 0
34. Tiki–Te Koumu	70 0 0
40. Coromandel – Cabbage Bay (inland)	50 0 0

Thames County.

	£	s.	d.
41. Thames–Waikawau	222	15	2
42. Thames–Hikutaia	215	7	6
43. Upper Tararu Road	74	0	0
44. Hikutaia–Whangamata	127	10	0
45. Omahu–Whangamata	171	0	0
46. Puriri–Neavesville	300	0	0
47. Neavesville–Broken Hills–Upper Landing	255	5	10
48. Upper Landing–Tairua	227	0	0
50. Waiotahi Road	50	0	0
51. Karaka Creek Road	50	0	0
52. Crosbie Settlement Road	50	0	0
54. Kaueranga Valley Road (protection)	63	6	0
55. Hape Creek Road	80	0	0
56. Tapu–Gumtown	174	0	0
57. Moanataiari Road	50	0	0
58. Tararu Creek Road	50	0	0
59. Omahu Bridge	250	1	8
60. Champion Mine Road	200	0	0
62. Ohio Creek Road	50	0	0
63. Tapu Creek Road	50	0	0

Thames Borough.

71. Karaka Creek (clearing)	100	0	0

Ohinemuri County.

72. Hikutaia–Waihi	183	0	0
74. Paeroa–Te Aroha	52	15	0
78. Komata Creek Road	200	0	0
80. Bridge Road–Karangahake	100	0	0
82. Waitekauri Hill Track	50	0	0
83. Waitewheta–Waihi Road	25	0	0
84. Hill Track–Willows' Camp	50	0	0
85. Rahu Road	50	0	0
86. Cadman Road	50	0	0
89. Jubilee Low-level Road	93	8	0
90. Abbot's Road, Waikino	48	18	0
91. Te Aroha Road	100	0	0
92. Maratoto Road	165	0	0
93. Komata–Waitekauri	150	0	0

MARLBOROUGH.

Pelorus Road Board.

114. Wakamarina Road and Bridges	25	6	3
115. Deep Creek Bridge, Wakamarina	613	0	0

NELSON.

Collingwood County.

116. Ferntown–Pakawau	300	0	0
117. Takaka–Collingwood Inland Road	100	0	0
119. Collingwood Bridge and approaches at Ferntown	2	0	6
120. Pakawau–Tamatea	74	0	0
121. Mangarakau Bridge and approaches	100	0	0

Takaka County.

126. Anatoki Track	140	0	0
127. Vants–Bubu	98	4	6
129. Bubu Bridge	103	17	0
130. Bubu Springs Road	100	0	0
131. Takaka – Collingwood Inland Road	137	3	0
132. Pack-track, Upper Anatoki	100	0	0
137. Takaka Bridge Protection	100	0	0
139. Anatoki–McCallum's	100	0	0

Waimea County.

142. Thorpe–Baton	55	0	0
144. Motueka River Bridge	219	1	1

	£	s.	d.
145. Aniseed Valley Road (repairs)	200	0	0
146. Dart River (Chandler's) Bridge	130	0	0
147. Motueka Valley–Wangapeka	60	0	0
Buller County.			
151. Millerton Road (widening)	100	0	0
152. Granity Creek southwards	50	0	0
153. Westport–Mokihinui	100	0	0
154. Karamea Mud-flat	150	0	0
155. Mokihinui–Little Wanganui River Road	1,413	0	7
157. Brighton–Grey County Boundary	150	0	0
159. Loop-line Road	100	0	0
160. Fox's Bridge (repairs)	50	0	0
163. Denniston Hill Road	394	10	9
164. Seddonville–Mokihinui Mine	50	0	0
166. Mokihinui end of Westport Road	150	0	0
167. Welshman's Flat Bridge	800	0	0
168. Waimangaroa–Granity	25	0	0
169. Charleston–Four-mile	50	0	0
170. Fairdown–Sergeant's Hill, *via* railway	75	0	0
171. Seddonville Roads	175	0	0
172. Seddonville Colliery–Township	50	0	0
173. Millerton Township	50	0	0
174. Mears's Road	50	0	0
175. Denniston–Burnett's Face	250	0	0
176. Mokihinui–Inangahua Junction	100	0	0
177. Big Ohika Bridge	8	0	0
178. Bullock Creek	50	0	0
179. Dirty Mary's Creek Bridge	300	0	0
180. Four-mile–Brighton	175	0	0
181. Waimangaroa–Birchfield	100	0	0
182. Road to Dredges, Buller	75	0	0
183. Road to Dredges, Berlin's	25	0	0
188. Mount Radiant Track	450	0	0
Inangahua County.			
191. Ulster Mine Road	147	17	1
193. Murray Creek Road	109	1	7
194. Inangahua Bridge	401	14	2
195. Progress Junction–Globe Hill	425	5	8
199. O'Rorke's–Horse Terrace	92	1	8
202. Blackwater Creek	1,398	2	3
204. Antonio Creek Track	200	0	0
205. Horse Terrace Bridge	104	19	3
206. Cronadon–Capleston	295	5	1
208. Grey–Reefton–Upper Blackwater	100	0	0
WESTLAND.			
Grey County.			
213. Seven-mile – Nine-mile Bluff	325	0	0
214. Moonlight–Blackball	325	0	0
215. Taylorville Bridge	2	0	9
216. Road, State Coal-mine Township	299	17	1
217. Ahaura–Moonlight–Shellback	200	0	0
219. Arnold Bridge (approaches)	100	0	0
223. Blackball – Healey's Gully	50	0	0
224. Red Jack's Creek (overflow) Bridge	200	0	0
225. Waterson's Road	150	0	0
226. Cobden–Brighton	75	0	0
229. Maori Creek – Maori Gully	100	0	0
Brunner Borough.			
230. Brunner–Blackball	254	17	0
Westland County.			
231. Reefton–Hokitika–Ross	2,704	17	1
232. Mount Hercules Deviation	142	4	0
233. Browning's Pass Track (widening)	150	0	0

	£	s.	d.
234. Okarito–Forks Track	90	0	0
235. Kanieri Bridge	6	7	0
236. Larrikin's–Loop-line (widening)	200	0	0
237. Taipo Prospecting Track	199	10	0
238. Westland Reefs Prospecting Track	77	10	0
239. Gillam's Gully Track Extension	98	0	0
240. Wilberforce – Westland Reefs Road	1,488	17	4
241. Deviation, Reefton–Hokitika–Ross Road	1	4	0
242. Kapitea Bridge	782	7	7
243. Koiterangi Prospecting Track	75	0	0
244. Seddon's Terrace Track Extension	100	0	0
245. Veronica Creek Track	100	0	0
246. Totara Road	100	0	0
247. Adair's Road	100	0	0
Ross Borough.			
248. Donnelly's Creek Bridge	241	12	6
OTAGO.			
Tuapeka County.			
250. Lawrence–Roxburgh	183	6	9
252. Docherty and Hopkins's Bridge (£1 for £1)	29	0	0
Vincent County.			
253. Nevis Valley Roads	200	0	0
254. Main Road Clyde–Tuapeka County Boundary	100	0	0
256. Clyde Bridge (repairs)	357	3	6
257. Devil's Creek (repairs)	348	3	3
258. Alexandra Bridge (repairs)	997	2	0
259. Bannockburn – Coal-pit Road	100	0	0
Lake County.			
261. Garston–Nevis	100	0	0
262. Queenstown – Gentle Annie	112	0	0
Wallace County.			
267. Colac – Round Hill	100	0	0
268. Falls Creek Road	100	0	0
Southland County.			
269. Garston–Nevis	160	0	0
270. Waikaka Valley Road to dredging claims	100	0	0
271. Waimumu Road to dredging claims	150	0	0
272. Repair of road, Waikaia to dredges	100	0	0
273. Parawai–Cameron's–Nokomai	150	0	0
	£38,493	16	2
Expenditure for year ended 31st March, 1908	38,493	16	2
Expenditure for previous years	742,955	6	9
Total expenditure to 31st March, 1908, on Roads on Goldfields	£781,449	2	11

STATEMENT showing the EXPENDITURE on DEVELOPMENT of GOLDFIELDS out of PUBLIC WORKS FUND for Year ending 31st March, 1908.

Assistance towards Races, Reservoirs, Pumping, Draining, and Waterworks on Goldfields.

Item No. 1—	£	s.	d.
Kuaotunu Sludge-channel	30	0	0
Deep-level drainage tunnel, Kumara	245	19	5
Repairs, No. 5 channel	50	0	0
Waimea main tail-race extension	212	10	0
Flood-water drainage, Rimu	32	0	0

	£	s.	d.
Ross Borough.			
Repairs, Jones's Creek storm-channel	150	0	0
Assistance towards Prospecting.			
Item No. 2—			
Coromandel County, J. McNeil	14	5	0
,, A. and W. McNeil	16	10	0
,, Courtney and Son	8	5	0
,, Dunn and Wells	22	16	0
,, F. Bostleman	17	17	0
,, G. Lindsay	6	10	0
,, J. D. Regan	13	0	0
,, McNeil and Gunn	13	0	0
,, Moewai Prospecting Association	28	19	0
,, C. Blasch	13	0	0
,, Lillis and Halpin	26	0	0
,, Moewai Syndicate	30	0	0
,, J. S. Wilson	37	10	0
,, J. Sweeney	22	10	0
,, Couch and Party	18	12	0
,, Gunn and Allen	15	0	0
,, McNeil and Gould	7	10	0
,, M. Kemner	13	13	0
,, Dyer and Norton	6	5	0
,, Golden Hill Syndicate	18	15	0
Ohinemuri County, Mackay and Thorpe	15	3	0
Huanui Gold-mining Company	72	2	4
Prospecting Syndicate, Anatoki	100	0	0
Takaka Miners' Association (Lloyd and Hume)	13	0	0
Buller County, C. Stewart	9	0	0
,, Preeble and Fairhall	72	10	0
,, Young and McKay	26	8	0
Inangahua County, Caledonian Syndicate	238	5	0
Upper Blackwater Miners' Association	14	2	6
,, ,, (G. Askenbeck)	27	10	6
Grey County, Lemon and Party	15	0	0
,, Christianson and Rossi	70	0	0
,, D. Steel	3	16	0
,, Griffiths and Williams	40	9	6
Upper Grey Miners' Association	24	0	0
Westland Mining League	46	0	0
Prospecting Kumara Goldfield	69	1	3
Westland County, D. Ryan	45	0	0
,, Irwin, Wells, and Party	50	0	0
,, Boyd and Party	129	6	0
,, G. Noble	1	10	0
,, Prospecting Rimu	194	6	6
Rimu Miners' Association, Chow's Terrace	23	11	0
Shotover Consolidated Gold-mining Company	65	14	5
Lake County, E. Sainsbury, Jun.	24	0	0
Item No. 4. Diamond-drills and appliances	1,974	0	7
6. Testing deep-levels, Thames	1,973	2	0
7. Compensation: Proclamation of rivers	101	6	8
8. Kelly's Terrace Tunnel	97	6	0
9. Repairs, Argyle Water-race (£1 for £1)	300	0	0
10. Queen of Beauty pumping-plant maintenance	216	14	7
12. St. Bathan's Channel	250	0	0
14. Alexandra Water-race	1,183	6	8
16. Waimumu Channel	110	13	3
Expenditure for year ended 31st March, 1908	8,666	12	2
Expenditure for previous years	778,025	9	5
Total expenditure to 31st March, 1908, on Development of Goldfields ..	£786,692	1	7

No. 1.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several DISTRICTS of the DOMINION of NEW ZEALAND for the Period from 1st January to 31st December, 1907.

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 ..	37 0 0	108 3 0	..	342 1 1	10 19 0	32 7 0	23 0 3	553 10 4
Te Aroha ..	37 15 0	558 10 8	21 0 0	258 19 3	11 5 0	2 19 0	5 15 0	896 3 11
Paeroa	89 0 0	229 15 7	..	1,226 12 2	..	106 5 0	17 0 0	1,668 12 9
Thames ..	320 0 0	126 8 11	2 5 0	1,268 13 6	30 5 0	51 11 0	1,060 6 4	2,859 9 9
Puhipuhi ..	6 15 0	..	..	25 2 0	..	7 10 0	..	39 7 0
Tauranga ..	3 15 0	..	..	6 5 0	0 5 0	..	0 10 6	10 15 6
Waihi	166 0 0	..	..	2,120 0 2	45 15 0	44 0 0	809 11 8	3,185 6 10
Totals ..	660 5 0	1022 18 2	23 5 0	5,247 13 2	98 9 0	244 12 0	1,916 3 9	9,213 6 1
NELSON.								
Motueka ..	..	..	..	..	..	..	..	..
Collingwood and Takaka	20 10 0	2 16 0	1 5 0	320 1 6	1 12 0	6 0 0	42 15 0	394 19 6
Westport ..	96 0 0	0 4 0	3 10 0	179 17 3	30 0 6	49 6 0	379 19 9	738 17 6
Charleston ..	26 0 0	0 6 0	1 16 0	29 17 1	..	..	2 15 0	60 14 1
Ahaura	60 0 0	2 0 0	94 16 0	485 11 6	15 5 0	33 16 0	2 3 6	694 12 0
Reefton	67 15 0	10 5 0	..	775 3 10	3 18 0	40 9 0	105 16 0	1,003 6 10
Wangapeka ..	..	..	..	..	..	..	..	..
Lyell and Murchison	40 5 0	0 2 0	..	260 12 8	..	22 2 0	42 19 10	366 1 6
Totals ..	310 10 0	16 13 0	101 7 0	2,051 3 10	50 15 6	151 13 0	576 9 1	3,258 11 5
MARLBOROUGH.								
Havelock ..	11 0 0	1 10 0	..	35 14 9	0 11 0	1 0 0	1 5 0	51 0 9
Blenheim ..	17 5 0	1 12 6	1 10 0	180 12 0	5 0 0	13 3 0	25 14 6	244 17 0
Totals ..	28 5 0	3 2 6	1 10 0	216 6 9	5 11 0	14 3 0	26 19 6	295 17 9
WESTLAND.								
Hokitika and Kanieri	46 5 0	0 5 0	6 5 0	230 8 7	7 19 0	38 9 0	2 0 0	331 11 7
Greymouth ..	97 0 0	19 0 0	1 10 0	220 0 2	1 5 0	27 1 0	8,148 17 3	8,514 13 5
Ross	8 10 0	..	..	103 16 10	0 9 0	6 10 0	2 12 0	121 17 10
Stafford	19 5 0	..	..	235 0 8	7 4 0	20 11 0	..	282 0 8
Okarito	5 5 0	0 17 0	1 5 0	52 16 0	0 14 0	..	1 8 0	62 5 0
Kumara ..	40 10 0	0 4 0	1 7 0	1,103 6 7	8 1 0	15 8 0	7 3 5	1,176 0 0
Totals ..	216 15 0	20 6 0	10 7 0	1,945 8 10	25 12 0	107 19 0	8,162 0 8	10,488 8 6
CANTERBURY.								
Ashburton ..	0 15 0	..	..	..	..	..	..	0 15 0
OTAGO AND SOUTHLAND.								
Middlemarch ..	3 0 0	0 5 0	0 5 0	15 12 0	0 8 0	0 14 0	0 10 0	20 14 0
Tapanui ..	0 15 0	..	2 2 0	11 14 10	0 3 0	0 6 0	..	15 0 10
Hindon	23 15 0	..	..	73 11 0	0 13 0	0 19 0	1 3 0	100 1 0
Naseby	51 15 0	..	..	460 18 9	..	..	35 11 0	548 4 9
Black's .. Alexandra Clyde .. Roxburgh	96 15 0	11 10 0	17 5 0	1,892 4 6	30 5 0	48 3 10	22 0 2	2,118 3 6
Cromwell ..	64 15 0	35 4 0	0 15 0	707 18 11	23 18 0	29 13 0	12 0 8	874 4 7
Queenstown ..	53 5 0	0 4 0	0 5 0	280 16 0	..	28 2 0	2 11 0	365 3 0
Arrowtown ..	12 5 0	0 1 0	..	232 10 4	..	124 14 7	0 10 0	370 0 11
Lawrence ..	52 15 0	0 1 0	5 0 0	721 0 6	12 18 0	31 0 0	45 12 6	868 7 0
Orepuki ..	..	..	..	27 2 9	3 17 0	9 6 0	3 13 0	43 18 9
Riverton and Longwood	29 0 0	12 0 0	..	152 15 1	2 16 0	37 1 0	35 0 0	268 12 1
Pembroke ..	5 10 0	..	..	0 5 0	0 6 0	2 19 0	..	9 0 0
Waikaia ..	6 10 0	..	..	456 9 3	..	9 2 0	18 4 0	490 5 3
Wyndham ..	3 10 0	..	0 5 0	14 11 3	0 5 0	1 7 0	2 18 2	22 16 5
Gore	12 5 0	..	0 5 0	151 19 9	0 13 0	2 19 0	11 1 0	179 2 9
Totals ..	415 15 0	59 5 0	26 2 0	5,199 9 11	76 2 0	326 6 5	190 14 6	6,293 14 10
Grand totals ..	1,632 5 0	1122 4 8	162 11 0	14,660 2 6	256 9 6	844 13 5	10,872 7 6	29,550 13 7

No. 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, 1908.

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 ..	17 5 0	16 15 0	..	96 18 5	2 4 0	33 18 0	3 17 0	170 17 5
Thames ..	65 0 0	10 10 0	0 10 0	562 9 6	3 5 0	..	10 7 0	652 1 6
Te Aroha ..	7 10 0	105 12 6	..	29 5 0	1 9 0	0 10 0	..	144 6 6
Paeroa ..	40 10 0	33 18 6	..	439 7 2	..	17 10 0	1 0 0	532 5 8
Puhipuhi ..	7 5 0	..	..	6 0 0	..	1 10 0	..	14 15 0
Tauranga ..	1 0 0	..	..	12 10 0	0 4 0	..	1 11 0	15 5 0
Waihi ..	40 10 0	..	..	817 12 2	12 5 0	11 2 6	109 12 5	991 2 1
Totals ..	179 0 0	166 16 0	0 10 0	1,964 2 3	19 7 0	64 10 6	126 7 5	2,520 13 2
NELSON.								
Collingwood and Takaka	7 5 0	1 11 0	..	138 13 5	0 5 0	2 1 0	3 13 0	153 8 5
Westport ..	31 5 0	0 3 0	0 10 0	35 10 0	0 3 0	18 16 6	19 12 6	106 0 0
Charleston ..	7 15 0	..	..	11 16 6	..	..	0 5 0	19 16 6
Ahaura ..	13 5 0	1 10 0	21 10 0	181 11 9	1 9 0	6 14 0	1 6 0	227 5 9
Wangapeka ..	..	..	..	..	..	..	..	..
Reefton ..	27 15 0	7 5 0	..	356 3 9	0 19 0	6 17 0	12 15 1	411 14 10
Lyell and Murchison	26 15 0	0 2 0	..	69 17 6	..	3 4 6	4 10 0	104 9 0
Motueka ..	2 10 0	..	..	12 1 8	..	..	..	14 11 8
Totals ..	116 10 0	10 11 0	22 0 0	805 14 7	2 16 0	37 13 0	42 1 7	1,037 6 2
MARLBOROUGH.								
Havelock ..	1 10 0	..	..	1 10 0	..	0 6 0	0 10 0	3 16 0
Blenheim ..	3 0 0	0 2 6	..	26 15 1	0 4 0	1 1 0	0 19 0	32 1 7
Totals ..	4 10 0	0 2 6	..	28 5 1	0 4 0	1 7 0	1 9 0	35 17 7
WESTLAND.								
Hokitika and Kanieri	16 5 0	..	3 0 0	92 13 9	4 4 0	9 3 0	0 12 0	125 17 9
Greymouth ..	49 15 0	0 8 0	..	56 16 7	0 10 0	5 10 0	3,747 0 7	3,860 0 2
Ross	5 0 0	..	..	60 19 3	0 4 0	3 15 6	5 0 0	74 18 9
Stafford ..	7 5 0	..	..	90 15 9	1 8 0	9 5 0	..	108 13 9
Kumara ..	31 10 0	0 3 0	..	339 8 9	2 8 0	10 4 0	5 1 6	388 15 3
Okarito ..	3 10 0	..	..	..	..	..	0 14 0	4 4 0
Totals ..	113 5 0	0 11 0	3 0 0	640 14 1	8 14 0	37 17 6	3,758 8 1	4,562 9 8
CANTERBURY.								
Ashburton ..	..	..	..	..	..	..	..	..
OTAGO AND SOUTHLAND.								
Tapanui ..	..	..	..	..	..	0 8 0	..	0 8 0
Hindon ..	5 0 0	..	..	43 10 0	0 2 0	..	1 6 0	49 18 0
Naseby ..	12 15 0	..	..	117 12 2	..	..	7 7 0	137 14 2
Roxburgh Alexandra Clyde Black's	19 5 0	9 6 10	2 5 0	626 10 11	9 10 0	17 17 0	7 7 0	692 1 9
Pembroke ..	1 5 0	..	..	0 15 0	..	..	..	2 0 0
Cromwell ..	12 10 0	6 11 0	0 5 0	347 10 0	9 18 0	24 18 1	12 1 0	413 13 1
Queenstown ..	14 10 0	0 3 0	..	57 18 3	..	6 19 0	1 11 0	81 1 3
Arrowtown ..	4 0 0	0 1 0	..	70 16 4	..	4 12 0	..	79 9 4
Lawrence ..	23 15 0	..	0 10 0	294 16 0	5 4 0	3 0 0	5 10 6	332 15 6
Waikaia ..	2 0 0	..	..	156 2 0	..	2 16 0	8 11 0	169 9 0
Orepuki ..	..	..	..	8 19 3	0 14 0	2 18 0	0 10 0	13 1 3
Riverton ..	6 10 0	4 10 0	..	72 19 4	0 15 0	1 2 0	7 12 0	93 8 4
Wyndham ..	0 15 0	..	..	5 18 9	0 4 0	0 8 0	..	7 5 9
Middlemarch ..	0 10 0	..	..	0 12 6	0 1 0	0 2 0	..	1 5 6
Gore	3 0 0	..	..	11 5 0	0 5 0	0 10 0	15 16 0	30 16 0
Totals ..	105 15 0	20 11 10	3 0 0	1,815 5 6	26 13 0	65 10 1	67 11 6	2,104 6 11
Grand totals ..	519 0 0	198 12 4	28 10 0	5,254 1 6	57 14 0	206 18 1	3,995 17 7	10,260 13 6

No. 3.

COMPARATIVE RETURN of REVENUE derived from the GOLDFIELDS in the several DISTRICTS of NEW ZEALAND during the Years 1907 and 1906, showing INCREASE or DECREASE under each Head of Revenue.

District.	Miners' Rights.	Business Licenses, &c.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Gold Duty.	Totals.
AUCKLAND—	£	£	£	£	£	£	£	£	£
Year 1906	605	1,389	41	4,515	90	261	449	36,603	43,953
Year 1907	660	1,023	23	5,248	98	245	1,916	31,253	40,466
Increase	55	..	..	733	8	..	1,467	..	..
Decrease	..	366	18	..	..	16	..	5,350	3,487
NELSON—									
Year 1906	301	22	11	4,651	38	240	1,637	..	6,900
Year 1907	311	17	101	2,051	51	152	576	..	3,259
Increase	10	..	90	..	13	..	..	..	..
Decrease	..	5	..	2,600	..	88	1,061	..	3,641
MARLBOROUGH—									
Year 1906	23	4	1	241	3	9	9	..	290
Year 1907	28	3	2	216	6	14	27	..	296
Increase	5	..	1	..	3	5	18	..	6
Decrease	..	1	..	25	..	..	..	..	..
CANTERBURY—									
Year 1906	1	..	..	..	..	..	..	..	1
Year 1907	1	..	..	..	..	..	..	..	1
Increase	..	..	..	..	..	..	..	..	..
Decrease	..	..	..	..	..	..	..	..	..
WESTLAND—									
Year 1906	258	305	7	5,500	24	49	146	..	6,289
Year 1907	217	20	10	1,945	26	108	8,162	..	10,488
Increase	..	..	3	..	2	59	8,016	..	4,199
Decrease	41	285	..	3,555	..	..	..	..	..
OTAGO—									
Year 1906	425	63	35	5,267	69	357	159	..	6,375
Year 1907	416	59	26	5,200	76	326	191	..	6,294
Increase	..	..	..	..	7	..	32	..	..
Decrease	9	4	9	67	..	31	..	..	81
Total increase	20	..	67	..	33	..	8,472	..	..
Total decrease	..	661	..	5,514	..	71	..	5,350	3,004

No. 4.

COMPARATIVE RETURN of the TOTAL AMOUNTS of GOLDFIELDS REVENUE (exclusive of Gold Duty) collected in the several Districts during the Years 1906 and 1907 and the Quarters ending 31st March, 1907 and 1908 respectively, showing the INCREASE or DECREASE in respect of each District.

District.	Years 1906 and 1907.				Quarters ending 31st March, 1907, and 31st March, 1908.			
	1907.	1906.	Increase.	Decrease.	1908.	1907.	Increase.	Decrease.
AUCKLAND.	£	£	£	£	£	£	£	£
Coromandel	554	463	91	..	171	121	50	..
Thames	2,859	1,882	977	..	652	1,722	..	1,070
Whangarei	..	..	..	..	..	..	..	..
Ohinemuri	1,669	1,364	305	..	532	662	..	130
Te Aroha	996	831	65	..	144	282	..	138
Tauranga	11	3	8	..	15	1	14	..
Waihi	3,185	2,780	405	..	991	1,152	..	161
Puhipuhi	39	27	12	..	15	2	13	..
NELSON.								
Motueka	..	13	..	13	15	2	13	..
Collingwood and Takaka	395	546	..	151	153	182	..	29
Westport	739	1,939	..	1,200	106	604	..	498
Charleston	61	74	..	13	20	17	3	..
Ahaura	695	2,652	..	1,957	227	406	..	179
Reefton	1,003	1,167	..	164	412	419	..	7
Wangapeka	..	8	..	8	..	1	..	1
Lyell and Murchison ..	366	500	..	134	105	150	..	45
MARLBOROUGH.								
Havelock	51	53	..	2	4	7	..	3
Blenheim	245	237	8	..	32	95	..	63
WESTLAND.								
Hokitika ..	332	361	..	29	126	58	68	..
Kanieri ..								
Greymouth	8,515	5,022	3,493	..	3,860	3,603	257	..
Ross	122	228	..	106	75	23	52	..
Stafford and Goldsborough	282	322	..	40	109	76	33	..
Okarito	62	109	..	47	4	15	..	11
Kumara	1,176	247	929	..	389	76	312	..
CANTERBURY.								
Ashburton	1	1	..	..	..	1	..	1
OTAGO AND SOUTHLAND.								
Hindon	100	107	..	7	50	40	10	..
Naseby	548	555	..	7	138	157	..	19
Alexandra ..								
Black's ..	2,118	2,260	..	142	692	679	13	..
Clyde ..								
Roxburgh ..								
Cromwell	874	838	36	..	414	295	119	..
Arrowtown	370	212	158	..	79	74	5	..
Queenstown	365	451	..	86	81	75	6	..
Pembroke	9	10	..	1	2	1	1	..
Lawrence	868	845	23	..	333	341	..	8
Waikaia	490	597	..	107	169	237	..	68
Tapanui	15	9	6	..	..	..	..	..
Orepuki, Preservation, Longwood, and Riverton	313	281	32	..	106	122	..	16
Wyndham	23	12	11	..	7	13	..	6
Middlemarch	21	17	4	..	1	5	..	4
Gore	179	182	..	3	31	40	..	9
Totals	29,551	27,205	6,563	4,217	10,260	11,756	969	2,466
Net decrease ..	..	..	..	..	..	..	..	..
Net increase ..	..	..	2,346	..	..	..	..	1,497

No. 5.

RETURN of GOLD DUTY credited to LOCAL BODIES for the Year ended 31st December, 1907, and Quarter ended 31st March, 1908.

Local Body.	For the Year ended 31st December, 1907.	For the Quarter ended 31st March, 1908.
COUNTIES—	£ s. d.	£ s. d.
Coromandel	130 14 11	50 9 11
Ohinemuri	6,584 5 6	1,787 5 11
Piako	1 16 0	..
Thames	648 0 1	185 2 8
BOROUGHS—		
Thames	5,657 3 2	479 0 4
Waihi	18,230 12 0	5,978 13 1
Totals	31,252 11 8	8,480 11 11

R. B. VINCENT,
Accountant to the Treasury.

The Treasury, Wellington, 5th May, 1908.

No. 6.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND from 1st APRIL, 1857, to 31st DECEMBER, 1907.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST DECEMBER, 1907.		ENTERED FOR EXPORTATION TO THE 30TH SEPTEMBER, 1907.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST DECEMBER, 1907.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	1,851	7,666				
" Ohinemuri ..		19,915	69,850				
" Coromandel		8	34				
" Piako ..		..	..				
Borough of Thames ..		4,790	20,240				
" Waihi ..		45,948	188,233				
Great Barrier Island ..		..	..				
		72,512	286,023	4,217,927	15,890,905	4,290,439	16,176,928
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	1	3	89,893	350,220	89,894	350,223
County of Collingwood	Nelson	1,971	7,607				
" Waimea ..		..	..				
" Takaka ..		..	..				
		1,971	7,607	1,716,501	6,805,134	1,718,472	6,812,741
County of Buller ..	West Coast	2,091	7,960				
" Inangahua ..		12,211	47,737				
" Grey ..		7,906	31,592				
" Westland ..		3,227	12,939				
Borough of Kumara ..		..	..				
" Hokitika ..		7	28				
" Ross ..		840	3,360				
		26,282	103,616	5,298,459	21,085,901	5,324,741	21,189,517
	Canterbury ..	..	..	99	387	99	387
County of Taieri ..	Otago	160	650				
" Tuapeka ..		4,276	17,452				
" Vincent ..		5,591	22,684				
" Maniototo ..		512	2,081				
" Waihemo ..		287	1,170				
" Waitaki ..		474	1,898				
" Lake ..		1,641	6,675				
" Wallace ..		622	2,488				
" Waikouaiti ..		..	..				
" Bruce ..		123	492				
" Clutha ..		..	..				
" Fiord ..		2	8				
" Southland ..		11,675	47,117				
" Stewart Island		..	..				
		25,363	102,715	6,769,277	26,894,937	6,794,640	26,997,652
	Unknown ..	..	..	207	824	207	824
Totals ..	.. ..	126,129	499,964	18,092,551	71,029,014	18,218,680	71,528,978

* Gold duty abolished in the South Island on the 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

No. 7.

COMPARATIVE RETURN for the YEARS ended 31st DECEMBER, 1907 and 1906.

PRODUCE OF THE GOLDFIELDS IN THE DISTRICT OF	DURING THE QUARTER ENDED				TOTALS FOR YEAR 1907.		TOTALS FOR YEAR 1906.	
	31st March, 1907.	30th June, 1907.	30th September, 1907.	31st December, 1907.	Quantity.	Value.	Quantity.	Value.
	Oz.	Oz.	Oz.	Oz.	Oz.	£	Oz.	£
Auckland ..	65,266	60,405	99,918	72,512	298,101	1,187,079	295,417	1,195,541
Marlborough ..	110	604	80	1	795	3,009	..	..
Nelson ..	1,125	320	477	1,971	3,893	15,274	2,944	11,746
West Coast ..	25,133	14,046	21,608	26,282	87,069	343,146	104,743	414,292
Otago ..	26,484	33,377	33,128	25,363	118,352	478,982	160,739	649,325
Totals for 1907	118,118	108,752	155,211	126,129	508,210	2,027,490	..	..
Totals for 1906	129,689	135,432	146,908	151,814	..	..	563,843	2,270,904

Department of Trade and Customs,
Wellington, 20th January, 1908.

W. T. GLASGOW,
Secretary and Inspector.

No. 8.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND from 1st APRIL, 1857, to 31st MARCH, 1908.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST MARCH, 1908		ENTERED FOR EXPORTATION TO THE 31ST DEC., 1907.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST MARCH, 1908.	
County or Borough.	District.	Qu'ntity	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	1,792	7,361				
" Ohinemuri ..		17,370	61,244				
" Coromandel ..		505	2,122				
" Piako ..		..	..				
Borough of Thames ..		3,155	13,234				
" Waihi ..		51,812	206,545				
Great Barrier Island ..		..	..				
		74,634	290,506	4,290,439	16,176,928	4,365,073	16,467,434
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	35	131	89,894	350,223	89,929	350,354
County of Collingwood ..	Nelson	457	1828				
" Waimea ..		..	..				
" Takaka ..		..	..				
		457	1,828	1,718,472	6,812,741	1,718,929	6,814,569
County of Buller ..	West Coast	2,575	10,011				
" Inangahua ..		9,764	37,448				
" Grey ..		7,291	29,252				
" Westland ..		3,226	12,945				
Borough of Kumara ..		..	..				
" Hokitika ..		3	12				
" Ross ..		408	1,632				
		23,267	91,300	5,324,741	21,189,517	5,348,008	21,280,817
	Canterbury ..	..	..	99	387	99	387
County of Taieri ..	Otago	402	1,618				
" Tuapeka ..		7,788	31,565				
" Vincent ..		8,825	35,560				
" Maniototo ..		1,959	7,869				
" Waihemo ..		216	869				
" Waitaki ..		839	3,392				
" Lake ..		1,472	5,947				
" Wallace ..		1,480	5,996				
" Waikouaiti ..		..	..				
" Bruce ..		72	286				
" Clutha ..		..	..				
" Fiord ..		..	..				
" Southland ..		12,657	51,202				
Stewart Island ..		..	..				
		35,710	144,304	6,794,640	26,997,652	6,830,350	27,141,956
	Unknown ..	..	..	207	824	207	824
Totals ..	..	134,103	528,069	18,218,680	71,528,978	18,352,783	72,057,047

*Gold duty abolished in the South Island on 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

No. 9.

COMPARATIVE RETURN for the QUARTERS ended 31st MARCH, 1908, and 31st MARCH, 1907.

District o	Quarter ended 31st March, 1908.		Quarter ended 31st March, 1907.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Auckland	74,634	290,506	65,266	261,993
Marlborough	35	131	110	438
Nelson	457	1,828	1,125	4,501
West Coast	23,267	91,300	25,133	99,510
Otago	35,710	144,304	26,484	107,030
Totals	134,103	528,069	118,118	473,472

W. T. GLASGOW,
Secretary and Inspector.

Department of Trade and Customs, Wellington, 29th April, 1908.

No. 10.

STATEMENT showing the PRICE of GOLD per OUNCE, PRICE charged per TON for CRUSHING QUARTZ or CEMENT, and PRICES charged for WATER per SLUICE-HEAD per WEEK, during the Year ending 31st December, 1907.

District.		Price of Gold per Ounce.	Price charged per Ton for crushing Quartz or Cement.	Price charged for Water per Sluice-head per Week.	Remarks.
		£ s. d.	£ s. d.	£ s. d.	
AUCKLAND—	Thames	2 17 2½	0 5 0	£3 to £4	40 in. sluice-head.
	Coromandel	£2 13s. 6d. to £3 17s. 6d.	10s. to 15s.	..	..
	Paeroa	4 4 0	..	..	..
	Te Aroha	4 4 0	..	..	..
	Waihi	4 0 0	0 10 0	..	..
	Tauranga	..	..	..	..
MARLBOROUGH—	Havelock	3 14 6	..	..	..
	Blenheim	3 15 0	..	..	..
NELSON—	Wangapeka	£3 10s. to £3 15s.	..	..	..
	Motueka..	3 12 0	..	..	..
	Charleston	3 19 0	..	0 1 2	20 in.
	Inangahua	4 0 0	..	..	..
	Collingwood	£3 13s. 6d. to £4	..	..	..
	Takaka	3 13 6	..	..	..
	Westport	3 19 0	..	..	..
	Murchison	£3 17s. to £3 19s.	..	..	..
	Lyell	£3 17s. to £3 19s.	..	..	..
WESTLAND—	Hokitika, Kanieri, and Waimea ..	£3 18s. to £4	..	..	..
	Totara and Ross	3 18 0	..	..	..
	Stafford	3 18 0	..	0 15 0	..
	Greymouth	3 17 0	..	0 10 0	Sluice-heads 20 in. by 12 in.
	Kumara	3 18 0	..	..	Government Race, 2½d. per head per hour; Erin-go-Bragh, 4½d. per head per hour.
	Ahaura	3 19 0	1 10 0	1 0 0	..
	Okarito	3 18 0	..	..	..
OTAGO AND SOUTHLAND—	Hindon	3 17 0	..	..	..
	Tuapeka..	3 17 6	..	2 10 0	..
	Longwood .. Preservation and Waiau Orepuki and Round Hill	3 18 6	..	1 10 0	Government head.
	Arrow (Wakatipu Goldfield) and Queenstown	3 17 0	0 3 6	1 5 0	..
	Mount Ida .. Macrae's, Hyde .. Hamilton, Serpentine	3 17 0	..	0 10 0	..
	Maerewhenua	3 17 0	..	..	..
	Cromwell	3 17 0	0 8 0	3 0 0	144 hours, Government sluice-head.
	Waikaia	3 17 6	..	2 10 0	..
	Tapanui	3 17 6	..	2 10 0	..
	Wyndham	3 18 6	..	1 10 0	Government head.
	Roxburgh .. Clyde and Alexandra Black's	3 17 6	..	..	40 in.
	Gore	3 17 6	..	2 10 0	..

No. 11.

RETURN showing the AVERAGE PRICES of PROVISIONS and LIVE-STOCK for the Year ending 31st December, 1906.

District.	Beer.	Brandy.	Bread—Wheaten.	Butter—Fresh.	Butter—Salt.	Cheese.	Coffee.	Flour.	Grain—Wheat.	Live-stock.					Meat.			Milk.	Rice.	Salt.	Sugar.	Tea.	Tobacco.	Wine.
										Cattle—Horned.	Goats.	Horses.	Sheep.	Swine.	Beef.	Mutton.	Pork.							
	Per. hhd.	Per gall.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per 100 lb.	Per Im. bushel.	Per head.	Per head.	Per head.	Per head.	Per head.	Per lb.	Per lb.	Per lb.	Per qt.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per gallon.
			d.							£		£			d.	d.	d.	d.	d.	d.	d.			
AUCKLAND—																								
Thames	90/	27/	2	1/2	1/	/7	1/10	11/6	4/6	8	10/	12	15/	12/	5	4	6	4	2½	1	3	1/6	5/6	17/
Paeroa.. ..	80/	17/	2	1/2	/9	/7	1/6	15/	5/9	6/10/–10	..	10–40	15/-22/6	30/–60/	3	5	6	3	2½	1	3	1/6	5/6	18/
Coromandel . ..	100/	27/	1¾	1/2	/10	/7	1/4–1/10	11/	4/8	1–10	10/	5–40	10/–27/	30/–100/	3–8	3½–3½	6	4	2½	1	3	1/4–3/	5/6–8/	26/
Tauranga	160/	35/	2	10–1/2	..	..	1/6–2/	15/	6/9	8	..	2–45	18/	5/–60/	3–8	4–6	5–6	3	3	1	2½	1/6–2/6	5/6	30/
Te Aroha	80/	17/	2	1/1	/9	/7	1/6	15/	4/3	7–9	..	10–40	15/-25/	30/–80/	6	5	6	4	2½	1	2	1/6	5/6	18/
Waihi	86/	28/	2	1/1	1/	/8	1/9	15/	6/9	3–7	10/	5–50	12/–26/	5/–40/	4–10	3–7	6	4	3½	2	2½	1/6	5/–7/	18/
Puhipuhi	100/	30/	2	1/	/10	/8	1/6	15/	5/9	3–8/10	10/	15	10/	25/	3⅛–8	3½–7	5–8	3	2½	1	2½	1/6	5/6	14/
MARLBOROUGH—																								
Blenheim	84/	30/	2	1/	/10	/8	1/9	13/6	5/6	7	..	20	10/	35/	5	4½	6	3½	3	1	2½	1/9	5/3	16/
Havelock	60/	30/	2	1/	..	/8	1/9	13/9	6/	6	..	30	14/	30/	5	4½	6	4	2½	1	2½	2/	6/	14/
NELSON—																								
Wangapeka	100/	35/	2	1/	/10	/9	2/	17/	7/	6–12	..	15–50	17/–25/	20/–70/	6	6	6	5	4	2	4	2/	7/	25/
Collingwood	95/	24/–30/	2	10–1/1	/9	/8	2/	13/6	7/	4–7	7/6	10–30	15/–20/	20/–40/	4½	4½	5	4	3	1	2½	1/3–2/	5/6	15/–36/
Takaka	45/	36/	2	1/	/10	/9	2/	13/9	6/	50/–80/	..	10–35	9/6–14/	20/–40/	5	5	5	3	3	1	2½	2/	6/	18/6
Inangahua	80/	25/	2	1/1	1/	/8	2/	15/	6/6	7	..	20–60	20/	30/	5–7	5–7	6	4	3	1	2½	2/	6/	15/–24/
Lyell .. } Murchison .. }	110/	26/	2½	1/2	1/	/9	2/	15/6	8/	5/10	..	18	17/6	50/	6	6	6	6	3½	2	3	2/	6/	26/
Westport	80/	26/	2	1/	/10	/8	1/10	12/	5/3	7/10	10/	20	17/6	35/	4	4½	6	5	3	1	3½	1/6	5/6	15/
Charleston	90/	35/	2	1/3	1/	/8	2/	15/6	6/	7	..	25	23/	50/	6	6	6	6	3	1	3	2/	5/9	16/
Ahaura	112/6	25/	2	1/3	1/	/9	2/	16/	6/	7–10	5/	10–50	12/6-20/	30/–80/	6	6	8	4	3	2	3	2/	5/6	15/
WESTLAND—																								
Stafford .. } Waimea .. }	100/	30/	1⅝	1/3	1/1	/8	1/9	15/	6/9	8	5/	20	18/	30/	6	6	6	6	3	1	3	1/10	6/	26/
Hokitika and Kanieri ..	85/	24/	1⅝	1/2	1/	/7	1/6	11/6	6/	7–8	..	5–50	15/6	15/–60/	6	5	7	5	2½	1	3	2/–3/6	5/6	12/
Ross	85/	25/	2	1/	1/	/9	2/	15/	7/6	5	2/6	20	17/	30/	6	6	6	4	4	1	2½	2/	6/	30/
Okarito	120/	26/	3	1/3	1/3	/10	2/	20/	8/	9	..	20	20/	50/	5	5	9	..	4	2½	4	2/3	6/6	18/
Greymouth	90/	27/	2	1/2	1/1	/8	1/9	11/6	6/	3–9/10	..	9–35	12/–23/	16/–75/	7	6	7	4	2½	1¼	3	2/	6/	16/6
Kumara	80/	26/	2	1/2	1/	/8	1/6	14/	6/6	9	5/	20–60	20/	60/	6	6	6	6	3	1	2½	1/6–2/	5/6	12/
OTAGO—																								
Hindon	..	..	2	1/3	/10–1/	/9	1/9	16/	5/	6–12	..	10–35	12/–17/	45/–50/	6	5	5½	4	3	1½	2–3	2/	6/	..
Tuapeka	90/	27/	1½	1/	1/	/6	1/6	12/6	4/6	6–10	..	15–40	17/6	20/	6	5	6	4	2½	1	3	1/8	5/6	20/
Tapanui	..	..	1½	/10	/10	/6	1/8	11/6	3/6	5/10	..	25	15/	30/	5	5	4	3	3	1	3	1/8	5/6	..
Cromwell	100/	28/	2	1/1	1/4	/8	1/6	12/9	5/	8	..	40	18/	50/	6	5	6	4	3	1	2½	1/–2/	5/	20/
Clyde .. } Alexandra .. } Roxburgh .. } Black's .. }	90/	30/	2	1/2	1/2	/8	1/9	12/	5/6	2–5	..	5–40	18/	60/	6	4	8	5	2½	1½	8	2/	6/	20/
Queenstown	90/	28/6	1⅝	1/	/10	/8	1/9	10/	3/	3–4	..	25–60	10/–12/	10/–60/	4–6	4–6	6	3	3	1	3	1/10	6/	15/
Arrow (Wakatipu Goldfield)	100/	23/	2	1/	/10	/8	1/6	11/	3/	3–5	..	25–60	10/–15/	22/6	6	5½	6	2	2½	2	3	1/10	6/	15/
Mount Ida .. } Nenthorn .. }	84/	28/6	2	11–1/2	/10	/8	2/	12/	5/	5–8	10/	9–20	15/	50/–60/	4–7	4½–6	6	4	2½	1	2½	1/10–4/	5/6–6/	12/6–21/
Waikaia	90/	36/	2	1/3	1/	/9	2/	16/	4/	6–11	..	10–45	12/–22/	17/–55/	7	6	6	5	4	2	3	2/	6/6	20/–36/
Riverton and Orepuki ..	88/	25/	1⅝	/10	/10	/8	1/7	12/9	6/	7	..	25–40	18/	38/	7	5	9	5	2½	1	2½	1/10	5/	18/
Gore	108/	45/	1½	1/	/10	/6½	1/9	6/	4/6	5	22/6	15	12/6	/30/	3½	3½	4	4	2	1	2½	1/9	5/	25/
Wyndham	90/	35/	2	1/	1/	/8	1/9	11/6	4/	6	..	26	14/	25/	5	4	5	3	3	1	3	1/9	5/6	26/

No. 12.

TABLE showing the AVERAGE RATE of WAGES per WEEK for the Year ending 31st December, 1907.

District.	General Managers.	Legal Managers.	Mining Managers.	Engineers.	Engine-drivers.	Stokers.	Blacksmiths.	Carpenters.	Miners.	Labourers.	Boys.	Chinese.	Agricultural Labourers.	Domestic Servants.
AUCKLAND—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Paeroa	£200 to £1200	£1 to £2	£4 to £10	£4 to £6	£2/10 to £3	£2/5–£2/11	£2/14 to £3	£2/17 to £3/10	£2/8 to £3/10	£2 to £2/10	£1 to £2	..	10/ to 30/	10/ to 17/6
Thames	£500 to £1000	£1 to £2	£3 to £5	£3 to £3/10	2 14 0	2 8 0	2 8 0	3 0 0	2 11 0	2 2 0	0 15 0	..	1 10 0	12/
Te Aroha	£500 p.a.	2 0 0	4 0 0	£3 to £6	£2/8 to £3	£2/2–£2/14	3 0 0	£2/17 to £3/6	£2/8 to £3	2 8 0	£1/4 to £1/16	..	1 5 0	7/6 to 15/
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	1 10 0	..	..	10/ to 15/
Tauranga	..	..	4 10 0	3 10 0	2 10 0	2 5 0	2 10 0	3 0 0	2 14 0	2 8 0	1 16 0	..	1 10 0	15/
Waihi	..	..	..	..	3 0 0	2 11 0	2 17 0	2 17 0	2 11 0	2 5 0	1 4 0	..	20/ and keep	12/6
Puhipuhi	..	..	..	..	..	..	..	£3 to £3/12	..	£1/16 to £2/8	..	..	20/–30/ keep	10/
MARLBOROUGH—														
Havelock	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Blenheim	..	..	6 0 0	..	..	..	3 12 0	..	3 0 0	2 8 0	0 10 0	..	25/ and found	10/ to 15/
NELSON—														
Reefton	..	2 0 0	5 0 0	5 0 0	3 10 0	3 0 0	3 10 0	4 0 0	3 0 0	2 10 0	1 16 0	..	1 5 0	15/
Collingwood	£8 to £10	..	£8 to £10	£3/10 to £4	3 0 0	£2/10 to £3	3 10 0	£3 to £3/15	£2/17 to £3	2 14 0	..	..	£2 to £2/10	15/ to 25/
Takaka	6 0 0	..	..	..	3 0 0	..	3 0 0	2 14 0	2 8 0	2 2 0	10/ and found	..	2 2 0	15/ to 20/
Charleston	4 15 0	..	4 0 0	..	..	..	3 10 0	3 15 0	3 0 0	2 14 0	1 1 0	..	2 14 0	10/
Westport	..	10/ to 20/	4 0 0	..	3 0 0	2 14 0	3 0 0	3 12 0	2 14 0	2 8 0	1 10 0	..	..	12/ to 20/
Lyell and Murchison ..	..	6 0 0	5 0 0	4 0 0	3 10 0	3 0 0	4 0 0	3 10 0	3 0 0	2 14 0	1 10 0	1 5 0	30/ and found	15/
Ahaura	..	£1 to £1/5	5 0 0	4 0 0	3 10 0	3 0 0	3 12 0	3 12 0	2 14 0	2 8 0	1 10 0	1 5 0	£1–/30	15/
Wangapeka	..	..	..	..	..	..	..	3 12 0	..	2 2 0	..	..	30/ and found	15/
WESTLAND—														
Waimea and Stafford ..	6 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	2 14 0	1 10 0	1 0 0	1 0 0	10/
Hokitika and Kanieri ..	..	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	1 10 0	12/6 to 25/
Ross	5 0 0	2 0 0	5 0 0	4 0 0	3 10 0	..	3 10 0	3 12 0	3 0 0	3 0 0	..	..	3 0 0	20/
Kumara	..	1 0 0	4 0 0	4 0 0	3 0 0	3 0 0	3 0 0	3 12 0	3 0 0	3 0 0	2 0 0	£1 and found	..	10/
Greymouth	..	£1 to £2	5 0 0	4 0 0	3 10 0	3 0 0	3 12 0	2 15 0	2 8 0	1 0 0	1 0 0	15/ to £1/10	20/–30/ found	7/6 to 30/
Okarito	..	..	..	..	3 12 0	..	..	3 12 0	2 14 0	2 14 0	1 0 0	..	1 10 0	15/
OTAGO AND SOUTHLAND—														
Hindon	..	12/	£4 to £5	..	2 14 0	..	3 0 0	..	£2/8 to £3	2 8 0	2 2 0	..	..	..
Tuapeka	12 0 0	1 0 0	4 0 0	4 0 0	2 10 0	2 2 0	2 14 0	3 0 0	2 8 0	2 8 0	0 10 0	1 0 0	1 0 0	10/ to 14/
Tapanui	..	..	4 0 0	3 10 0	2 15 0	2 8 0	2 8 0	3 0 0	2 8 0	2 5 0	1 0 0	1 5 0	1 2 6	12/6
Cromwell	..	3 0 0	5 0 0	4 10 0	3 0 0	3 0 0	3 0 0	3 10 0	3 0 0	£2/8 to £2/14	1 0 0	1 10 0	25/ and found	15/
Clyde ..														
Alexandra ..	5 0 0	1 10 0	5 0 0	4 0 0	3 0 0	..	4 0 0	3 10 0	3 0 0	2 8 0	0 10 0	1 5 0	25/ and found	12/6 to 15
Black's ..														
Roxburgh ..														
Waikaia	..	5 0 0	4 0 0	4 0 0	2 14 0	..	3 0 0	3 12 0	2 8 0	2 8 0	10/ to 15/	15/ to £1/5	£1/ to £1/10	10/ to 16/
Orepuki and Riverton ..	5 0 0	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/
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 10 0	2 8 0	10/ to 25/	£1/5 to £1/10	1 5 0	8/ to 20/
Mount Ida	5 0 0	..	4 0 0	..	..	..	3 0 0	3 4 0	2 8 0	£2/2 to £2/8	10/ to 15/	10/ to 15/& fd.	20/–25/ found	7/ to 12/6
Gore	..	..	4 10 0	2 8 0	2 8 0	2 8 0	2 14 0	..	..	2 2 0	..	..	1 5 0	12/6
Wyndham	..	..	..	..	3 0 0	..	3 0 0	..	..	2 8 0	1 0 0	..	2 8 0	15/

No. 13.

NUMBER of MACHINES employed in ALLUVIAL and QUARTZ MINING, and the VALUE thereof, for the Year ending 31st December, 1907.

District.	Machinery employed in Alluvial Mining.														Machinery employed in Quartz-mining.								
	Steam-engines employed winding, crushing, &c.		Puddling-machines.	Whims.	Whips or Pulleys.	Sluices, Toms, and Sluice-boxes.	Water-wheels.	Hydraulic Hose.	Pumps.	Dredges.	Quicksilver and Compound Cradles.	Derricks.	Stamp-heads crushing Cement.	Boring-machines.	Steam-engines employed winding, crushing, &c.		Crushing-machines.	Stamp-heads.	Water-wheels.	Whims.	Whips or Pulleys.	Derricks.	Berdans.	Approximate Value of all Mining Plant included in this Return.
	No.	Aggregate h.p.													No.	Aggregate h.p.								
AUCKLAND—																								
Paeroa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	1,342	11	305	10	..	..	..	..	149,710
Coromandel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24	706	13	168	5	..	..	..	..	94,876
Thames	..	..	..	..	..	..	..	..	..	..	..	..	..	..	29	1,297	38	520	25	..	..	..	149	181,306
Te Aroha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	2,500
Waihi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	45	8,797	11	375	34	..	1	..	..	..
Totals	..	..	..	..	..	..	..	..	..	..	..	..	..	..	114	12,142	73	1,378	74	..	1	..	149	428,392
MARLBOROUGH—																								
Wakamarina Cullen's Creek Waikakaho Blenheim	..	..	..	..	..	4	..	..	..	1	..	..	..	..	..	..	1	10	1	..	..	..	..	4,000
Totals	..	..	..	..	..	4	..	..	..	1	..	..	..	..	..	..	1	10	1	..	..	..	..	4,000
NELSON—																								
Collingwood	..	..	..	..	..	3	..	5	..	..	..	1	..	2	1	5	2	28	1	..	..	..	..	39,500
Inangahua	..	..	..	..	..	..	..	..	..	6	..	..	..	..	20	500	15	250	3	4	..	..	..	250,000
Charleston	..	..	..	..	3	..	..	..	..	..	..	..	13	..	..	..	..	..	..	..	..	..	..	300
Lyell	..	..	..	..	..	60	..	7	..	4	..	..	..	..	..	..	2	30	2	..	..	..	..	28,000
Murchison	..	..	..	..	..	312	..	13	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	25,000
Westport	..	..	..	..	..	35	5	20	..	..	..	..	17	..	..	..	4	14	3	..	..	..	..	6,500
Ahaura	..	..	..	..	..	750	..	2,500	..	14	..	1	..	1	..	..	2	11	2	..	..	..	..	84,000
Totals	..	..	..	..	3	1,160	5	2,545	..	26	..	2	30	3	21	505	25	333	11	4	..	..	..	433,300
WESTLAND—																								
Stafford	..	..	..	3	6	6,000	6	300	3	1	..	2	..	..	..	..	..	..	..	..	..	..	..	30,000
Ross	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	5	1	..	..	..	..	7,250
Hokitika and Kanieri	..	..	..	..	..	67	..	4	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	12,000
Greymouth	..	..	..	..	..	169	..	435	15	3	10	..	..	3	..	..	..	..	..	..	..	..	..	42,864
Kumara	..	..	..	..	..	25	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	20,000
Totals	..	..	..	3	6	6,261	6	740	18	9	10	2	..	3	..	..	1	5	1	..	..	..	..	112,114
OTAGO AND SOUTHLAND—																								
Tapanui	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3,000
Hindon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	16	1	5	..	..	..	..	..	710
Tuapeka	..	..	..	..	..	400	..	50	..	5	..	..	..	..	2	16	3	15	2	..	..	..	..	50,000
Cromwell	..	..	..	..	..	..	..	14	..	19	..	..	..	..	4	30	4	30	1	..	..	..	..	88,000
Clyde and Alexandra Roxburgh Black's	..	..	..	..	..	700	1	28	2	40	..	..	..	2	..	..	3	15	2	..	..	..	..	301,100
Orepuki, Waiau, and Roundhill Preservation	3	200	..	..	..	145	1	115	12	..	..	..	..	1	1	14	2	10	4	2	..	..	11	7,000
Waikaia (Switzers)	..	..	..	..	..	130	..	25	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	80,000
Arrow	..	1	4	..	..	..	20	..	12	2	..	..	1	..	1	1	4	4	40	..	..	..	1	..	12,000
Queenstown	..	..	..	..	..	..	400	..	50	2	1	..	..	..	..	1	8	5	42	..	..	..	..	..	3,000
Naseby Kyeburn and Clarke's Hamilton's and Sowburn Hyde and Fullerton's Macrae's, Strath Taieri, and Shag Valley Serpentine St. Bathan's, Ida Valley, &c.	2	10	1	..	..	153	1	528	4	2	..	40	..	..	1	80	2	25	1	..	..	..	5	100,650
Gore	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..	108,500
Totals	..	6	214	1	..	..	1,948	3	822	22	119	..	41	..	4	12	168	24	182	10	2	..	1	16	753,960

SUMMARY.

Auckland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	114	12,142	73	1,378	74	..	1	..	149	428,392
Marlborough	..	..	..	..	..	4	..	..	..	1	..	..	..	..	..	..	..	1	10	1	..	..	..	..	4,000
Nelson	..	..	..	..	3	1,160	5	2,545	..	26	..	2	30	3	21	505	25	333	11	4	..	..	..	433,300
Westland	..	..	..	3	6	6,261	6	740	18	9	10	2	..	3	..	..	1	5	1	..	..	..	..	112,114
Otago	..	6	214	1	..	1,948	3	822	22	119	..	41	..	4	12	168	24	182	10	2	..	1	16	753,960
Totals	..	6	214	1	3	9,373	14	4,107	40	155	10	45	30	10	147	12,815	124	1,908	97	6	1	1	165	1,731,766

No. 14.

TABLE showing approximately the NUMBER, DESCRIPTION, and VALUE of the WATER-RACES, TAIL-RACES, DAMS, RESERVOIRS, and GROUND-SLUICING in Operation during the Year ending 31st December, 1907.

District.	Water-races.				Tail-races.		Dams.		Reservoirs.		Ground-sluices.		Approximate Total Cost.
	No.	Length in Miles.	No. of Sluice-heads.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	
				£		£		£		£		£	£
AUCKLAND—													
Coromandel ..	6	6	21	4,500	..	..	3	510	3	50	..	..	5,060
Thames	19	25	160	58,000	7	360	70	770	2	5,000	..	..	64,130
Te Aroha ..	3	2	13	2,500	..	..	2	200	..	..	..	..	2,700
Paeroa	168	199	2,468	122,466	1	1,000	35	5,000	3	3,000	..	..	131,466
Waihi	18	40	397	..	7	..	21	..	1	..	..	..	..
Totals ..	214	272	3,059	187,466	15	1,360	131	6,480	9	8,050	..	..	203,356
MARLBOROUGH—													
Blenheim ..	23	15	120	..	1	..	..	..	..	..	..	..	..
Havelock ..	18	14	43	3,752	..	..	2	40	..	..	..	..	3,792
Totals ..	41	29	163	3,752	1	..	2	40	..	..	..	..	3,792
NELSON—													
Wangapeka, Baton, and Sherry	5	4	22	400	2	100	..	..	..	..	2	50	550
Collingwood ..	116	140	1,223	140,756	71	7,850	79	11,030	..	..	9	..	159,636
Inangahua ..	170	105	1,100	55,000	30	10,000	42	2,100	..	..	..	..	67,100
Charleston ..	25	140	280	2,800	30	150	29	3,500	..	..	6	300	6,750
Westport ..	273	184	1,424	12,315	181	22,457	429	14,719	..	..	..	..	49,491
Lyell	90	85	210	6,500	23	2,000	19	1,800	..	..	..	..	10,300
Murchison ..	245	212	1,155	15,000	63	2,450	54	3,500	..	..	..	..	20,950
Ahaura	250	500	2,000	200,000	100	20,000	100	3,500	..	..	..	..	223,500
Motueka ..	7	4	23	1,000	4	60	5	70	..	..	1	..	1,130
Takaka	2	4	14	120	1	30	1	100	1	100	1	..	350
Totals ..	1,183	1,378	7,451	433,891	505	65,097	758	40,319	1	100	19	350	539,757
WESTLAND—													
Hokitika & Kanieri	349	257	607	162,300	149	2,900	347	3,915	..	..	..	..	169,115
Ross	3	12	45	15,000	2	900	7	6,000	1	300	..	..	22,200
Kumara ..	31	28	250	16,275	32	16,865	27	6,125	..	..	30	600	39,865
Greymouth ..	545	478	2,030	36,737	832	10,625	1,043	10,935	..	..	..	..	58,297
Okarito	13	9	185	5,169	..	..	1	50	..	..	..	..	5,219
Stafford	200	300	600	25,000	200	5,000	300	5,000	6	500	100	600	36,100
Totals ..	1,141	1,084	3,717	260,481	1,215	36,290	1,725	32,025	7	800	130	1,200	330,796
OTAGO AND SOUTHLAND—													
Hindon	25	25	100	5,000	5	70	3	351	..	..	5	31	5,452
Tuapeka ..	290	895	1,790	18,700	260	6,500	330	9,900	..	..	..	..	35,100
Tapanui ..	2	3	8	185	..	..	..	..	..	..	..	..	185
Clyde, Alexandra, Black's, and Roxburgh	550	1,654	2,000	90,000	270	8,500	160	12,000	2	8,000	..	..	118,500
Arrow	219	304	627	16,033	225	2,165	55	1,555	..	..	..	..	19,753
Cromwell ..	594	1,445	2,369	106,079	315	14,750	253	12,100	..	..	..	..	132,929
Waikaia ..	237	440	860	50,000	200	2,000	128	3,000	..	..	8	500	55,500
Riverton and Orepuki	175	259	924	60,206	29	4,930	60	2,072	..	..	..	..	67,208
Queenstown ..	199	252	1,301	62,614	133	44,451	70	5,383	..	..	..	..	112,448
Naseby													
Kyeburn & Clarke's													
Hamilton's and Sowburn													
Hyde & Fullerton's													
Macrae's, Strath Taieri, and Shag Valley	1456	3,662	4,779	81,862	795	24,102	378	19,640	..	..	..	..	125,604
Serpentine ..													
St. Bathan's and Ida Valley													
Wyndham ..	3	3	18	700	..	..	1	5	..	..	..	..	705
Gore	17	24	..	1,960	2	2,500	5	232	..	..	..	..	4,692
Totals ..	3,767	8,966	14,776	493,339	2,234	109,968	1,443	66,238	2	8,000	13	531	678,076

SUMMARY.

Auckland ..	214	272	3,059	187,466	15	1,360	131	6,480	9	8,050	..	..	203,356
Marlborough ..	41	29	163	3,752	1	..	2	40	..	..	..	..	3,792
Nelson	1,183	1,378	7,451	433,891	505	65,097	758	40,319	1	100	19	350	539,757
Westland ..	1,141	1,084	3,717	260,481	1,215	36,290	1,725	32,025	7	800	130	1,200	330,796
Otago	3,767	8,966	14,776	493,339	2,234	109,968	1,443	66,238	2	8,000	13	531	678,076
Totals ..	6,346	11,729	29,166	1,378,929	3,970	212,715	4,059	145,102	19	16,950	162	2,081	1,755,777

No 15.

RETURN of CASES in the WARDENS' COURTS, and COSTS AWARDED, for the Year ending 31st December, 1907.

District.	Number of Mining Disputes adjudicated on.	Aggregate Amount of Value.		Amount of Costs awarded.	Cases wherein Judgment has decreed Specific Performance.
		Claimed.	Recovered.		
AUCKLAND—		£ s. d.	£ s. d.	£ s. d.	
Coromandel	13	644 15 6	28 12 0	4 4 0	..
Thames	10	595 19 10	399 12 9	31 17 6	..
Te Aroha	4	28 10 0	8 0 0	1 6 0	..
Paeroa	69	247 17 9	84 12 6	23 1 3	..
Waihi	40	132 16 10	34 9 6	19 11 0	7*
MARLBOROUGH—					
Blenheim	5	56 5 0	6 5 0	13 0 0	..
NELSON—					
Inangahua	14	1 12 6	1 12 6	46 6 0	9†
Collingwood	2	..	..	3 9 1	1*
Lyell and Murchison	5	147 6 6	..	5 6 6	..
Westport	8	10 0 0	10 0 0	39 2 0	..
Charleston	..	..	..	..	..
Takaka	..	..	..	..	..
Wangapeka	..	..	..	..	..
WESTLAND—					
Kumara	10	62 15 9	55 18 9	8 1 0	..
Greymouth	8	354 4 6	340 5 6	2 5 0	..
Hokitika and Kanieri	2	..	..	..	..
Stafford	2	3 10 0	3 10 0	1 13 0	92‡
Ross	..	..	..	..	..
Ahaura	14	604 10 0	154 10 0	14 13 0	..
Okarito	..	..	..	..	..
OTAGO AND SOUTHLAND—					
Tuapeka	13	66 0 0	28 0 0	17 10 0	..
Cromwell	2	16 0 7	15 3 1	2 19 0	..
Roxburgh, Black's, Clyde and Alexandra	67	117 16 9	117 16 9	34 13 1	4*
Waikaia	8	..	..	6 11 0	..
Orepuki, Longwood, and Riverton	8	93 6 8	47 0 0	2 14 0	..
Arrow (Wakatipu Goldfield)	1	..	..	6 12 0	..
Queenstown	1	..	..	15 11 0	..
Gore	2	139 18 5	142 3 5	..	..
Naseby	8	44 3 9	12 15 0	20 15 0	6*
Wyndham	1	16 0 0	16 0 0	6 10 4	..
Totals	317	3,383 9 11	1,506 6 9	327 10 9	119

* 7, 1, 4, and 6, forfeiture decreed. † 9 cancellation of licenses. ‡ 92 mining applications dealt with.

No. 16.

RETURN of the NUMBER of MINING LEASES or LICENSES in Force on the 31st December, 1907, the EXTENT of GROUND LEASED or held under LICENSE, and RENTAL per ANNUM.

Mining Leases.

District.	No.	Gross Acreage.	Rental per Annum.
		A. R. P.	£ s. d.
AUCKLAND—			
Coromandel	118	4,557 0 26	437 19 9
Thames	146	8,607 0 7	1,305 1 0
Te Aroha	22	1,043 2 34	284 10 0
Paeroa	80	456 3 12	1,186 0 0
Puhipuhi	30	2,656 0 0	145 15 4
Waihi	66	3,954 0 20	1,141 14 0
MARLBOROUGH—			
Havelock	2	79 2 2	30 7 6
Blenheim	14	1,906 2 0	100 8 2
NELSON—			
Collingwood	1	920 0 0	115 0 0
Reefton	161	5,274 1 36	943 14 3
Charleston	11	95 0 0	31 10 0
Ahaura	..	..	..
Lyell	14	336 0 0	107 15 0
Murchison	32	680 0 0	179 15 6
Westport	32	524 2 21	145 0 0
Motueka	1	1,000 0 0	4 3 4
WESTLAND—			
Kumara	49	513 3 12	166 17 6
Hokitika and Kanieri	80	1,122 3 16	334 5 4
Ahaura	250	3,250 0 0	1,200 0 0
Greymouth	149	16,076 3 38	2,011 1 2
Ross	21	570 0 0	83 5 0
Okarito	5	560 0 0	28 0 0
OTAGO AND SOUTHLAND—			
Cromwell	120	2,115 0 0	658 1 8
Wyndham	2	21 0 0	7 5 0
Waikaia	50	1,340 0 0	388 9 0
Black's	115	5,022 0 0	1,482 12 6
Clyde and Alexandra			
Roxburgh			
Naseby	78	1,223 0 32	313 8 9
Arrow (Wakatipu Goldfield) ..	550	2,227 0 0	265 18 6
Queenstown	282	3,609 2 0	316 17 0
Riverton and Orepuki	50	2,183 2 36	241 4 0
Tuapeka	96	2,685 0 0	812 0 0
Middlemarch	2	26 0 0	9 15 0
Livingstone	24	121 3 0	30 7 9
Totals	2,653	74,758 3 12	14,488 2 0

Statement of Affairs of Mining Companies, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900

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.			
AUCKLAND DISTRICT.														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Auckland Gold-mining Co. (Ltd.)	4/7/05	5,000	1,875	..	100,000	0 0 4½	..	163	1	6,236	11,144	11,461	..	6
Bonanza Gold-mining Co. (No Liability) ..	22/10/06	10,000	1,000	500	100,000	6d. & 3d.	..	151	4	..	..	990	..	..
Champion Mines (Ltd.)	5/12/05	21,000	6,375	8,250	140,000	0 1 6	..	198	8	..	..	4,609	..	12
Comstock United Gold-mining Co. (Ltd.) ..	2/3/06	12,750	3,457	2,250	85,000	3/, 1/6, 11d.	59	52	3	..	..	2,473	..	546
Coronation Gold-mining Co. (Ltd.)	17/8/04	5,000	1,888	250	100,000	0 0 5	..	136	..	23	47	2,078	..	92
Durbar Gold-mining Co. (Ltd.)	27/6/07	8,000	..	4,000	80,000	0 1 0	..	91	4	..	68	432	..	235
Golden Belt Gold-mining Co. (Ltd.)	12/8/02	24,957	19,707	5,250	249,567	1/ & 2/	..	329	45	4,926	11,426	35,170	..	2,122
Golden Cross Gold-mining Co. (Ltd.)	12/11/06	9,350	2,234	..	93,500	6d., 5d., 4d.	104	120	6	..	..	2,005	..	13
Halcyon Gold-mining Co. (Ltd.)	31/7/06	5,000	1,728	500	100,000	0 0 6	273	140	3	..	..	1,506	..	..
Hardy's Mines (Ltd.)	23/7/07	6,811	2,630	1,551	54,491	2/6 & 1/3	175	69	9	..	..	1,339	..	47
Hauraki Freeholds (Ltd.)	29/11/98	20,000	1,275	18,725	100,000	0 3 0	..	396	..	1,373	4,291	5,771	..	19
Kapowai Gold-mining Co. (Ltd.)	24/11/06	10,500	2,979	4,000	105,000	0 0 11	..	185	14	266	570	3,759	..	316
Karangahake Gold-mining Co. (Ltd.)	5/9/07	10,525	1,881	750	105,250	0 0 6	..	111	10	..	..	750	..	..
Kiri Kiri Mines (Ltd.)	17/5/05	9,365	2,910	2,500	93,650	0 2 0	57	67	6	305	787	4,875	..	829
Kuranui Gold-mining Co. (Ltd.)	12/9/95	22,394	11,479	3,450	89,575	0 3 4	..	102	6	..	1,768	12,273	..	31
Lanigan's Antimony and Minerals (Ltd.) ..	20/8/07	4,800	1,136	..	96,000	9d. & 8d.	64	37	..	..	..	1,236	..	231
Magnet Gold mining Co. (Ltd.)	24/4/06	5,000	1,753	1,000	100,000	6d. & 5d.	150	110	6	..	..	2,778	..	..
Maharahara Copper-mines (Ltd.)	13/12/06	32,130	1,331	30,000	32,130	0 12 6	..	80	2	..	..	1,933	..	..
Maoriland Gold-mining Co. (Ltd.)	15/6/06	10,000	3,140	3,750	100,000	1/6 & 1/4	193	108	1	1,101	1,455	6,152	..	587
May Queen Extended Gold-mining Co. (No Liability)	12/11/95	15,000	10,539	1,000	97,028	0 2 6 3/10	..	113	8	..	2,488	13,092	..	..
May Queen Gold-mining Co. (Ltd.)	15/5/07	54,000	2,481	21,600	216,000	0 2 4	219	278	23	699	1,998	5,299	..	818
Moanataiari Extended Gold-mining Co. (Ltd.) ..	10/3/05	2,602	1,217	2,398	100,000	1/, 6d., 5d.	45	243	..	2	5	1,901	..	52
Moewai Gold-mining Co. (Ltd.)	23/10/07	4,100	295	3,300	82,000	1/, 5d., 4d., 3d.	..	79	7	..	..	420	..	276
Mount Zeehan Gold-mining Co. (Ltd.) ..	19/4/07	11,100	2,829	..	74,000	3/, 1/2,	110	128	8	..	..	3,030	..	205
New Dart Gold-mining Co. (Ltd.)	23/10/05	5,000	4,983	17	1,000	0 1 0	..	122	2	5	14	4,744	..	377
New Maratoto Gold-mining Co. (Ltd.)	3/10/04	10,000	4,605	2,500	200,000	9d, 8½d, 2½d	395	24	..	5,039	1,313	7,525	..	505
New Moanataiari Gold-mining Co. (Ltd.) ..	6/6/04	5,000	4,995	..	100,000	1l/ & 1/	5	258	6	674	1,862	8,997	..	40
New Monowai Gold and Silver Mines (Ltd.) ..	4/10/04	7,500	7,500	..	100,000	0 1 6	..	180	10	..	..	7,614	..	600
New Occidental Gold-mining Co. (No Liability)	7/9/05	6,300	1,531	..	63,000	0 0 8½	125	48	2	..	..	1,528	..	..
New Plymouth Petroleum Co. (Ltd.)	17/8/06	7,500	6,828	2,500	2,000	£5, £4, £1	25	114	3	..	..	7,131	..	278
New Sylvia Gold-mining Co. (Ltd.)	2/10/05	15,000	3,788	1,208	120,000	6d. 3d. 1d.	54	148	8	..	..	3,820	..	9
New Una Gold-mining Co. (Ltd.)	10/9/03	4,341	3,594	239	57,874	1/2, 1/3, 1/4, 1/5	22	97	5	275	741	4,177	..	3
New Waitekauri Gold-mining Co. (Ltd.) ..	12/9/06	12,500	4,710	1,500	100,000	9d., 1/2, 1/3	457	197	12	152	266	4,809	..	598
Ngatiawa Gold-mining Co. (Ltd.)	25/4/07	5,250	3,759	..	105,000	8d. & 9d.	179	117	6	..	..	3,852	..	683
Old Alburnia Gold-mining Co. (Ltd.)	25/7/03	11,000	11,000	..	110,000	0 2 0	..	190	30	263	751	17,123	..	176
Old Hauraki Gold-mining Co. (Ltd.)	3/8/07	21,000	1,861	..	210,000	2d. & 3d.	764	241	8	..	..	1,396	..	77
Old Kapanga Gold-mining Co. (Ltd.)	8/9/06	7,800	5,195	100	104,000	7d., 11d., 1/ & 1/1	97	141	2	5	15	4,873	..	2,145
Pride of Waihi Gold-mining Co. (Ltd.) ..	15/1/01	50,000	2,500	1,250	100,000	0 0 9	..	237	..	..	..	2,158	..	23
Reliance Gold-mining Co. (Ltd.)	20/12/06	5,500	1,371	..	110,000	1d., 2d., 3d.	3	70	4	77	210	1,287	..	74
Rising Sun Gold-mining Co. (No Liability) ..	16/10/95	18,000	5,860	1,900	92,250	0 1 7 3/10	330	143	5	..	..	6,337	..	17

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*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.			
AUCKLAND DISTRICT—*continued.*														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Royal Oak Gold-mining Co. (Ltd.)	22/3/04	12,500	..	6,875	100,000	..	..	41	3	3,304	9,103	10,839	..	..
Scandinavian Gold-mining Co. (Ltd.) ..	8/10/06	4,395	653	752	60,267	0 0 7	224	38	2	..	..	601	..	30
Southern Queen Gold-mining Co. (Ltd.) ..	8/2/06	4,250	1,967	..	85,000	0 0 8	241	122	4	199	543	2,455	..	..
South Kapanga Gold-mining Co. (Ltd.) ..	5/12/06	6,800	2,000	1,400	136,000	0 0 6	..	107	8	..	..	1,816	..	..
Sunbeam Gold and Silver Mining Co. (Ltd.) ..	30/6/03	15,000	7,597	2,750	200,000	1/6,1/,11d.	123	107	..	..	1,007	9,264	..	1,053
Taihoa Gold-mining Co. (Ltd.)	11/10/06	1,667	1,636	..	100,000	0 0 4	30	58	5	..	..	1,557	..	19
Tairua Broken Hills Gold-mining Co. (Ltd.) ..	12/7/99	14,550	..	..	145,500	0 2 0	..	220	40	43,856	80,128	74,035	22,891	909
Tairua Extended Gold-mining Co. (Ltd.) ..	20/9/07	3,575	565	..	71,500	1d. & 2d.	31	69	2	..	..	375	..	17
Tairua Triumph Gold-mining Co. (Ltd.) ..	1/2/07	12,765	1,461	667	127,650	0 0 4	1	62	8	22	59	1,385	..	..
Temple Bar Gold-mining Co. (Ltd.)	1/11/06	5,880	1,189	750	78,400	0 0 6	20	121	4	..	..	1,150	..	10
Te Puke Gold Reefs (Ltd.)	4/5/98	12,372	12,372	..	101,478	0 2 6	..	104	1	..	..	12,439	4,545	72
Thames Gold-mining Co. (Ltd.)	16/12/05	15,000	9,338	..	150,000	1/2 & 1/3	37	216	7	54	162	8,502	..	25
Trafalgar Gold-mining Co. (Ltd.)	20/2/06	7,500	1,598	250	100,000	0 0 4½	27	103	..	4	10	1,696	..	104
Vanguard Gold-mining Co. (Ltd.)	6/7/05	9,900	4,627	192	99,000	1/1,11d.,3d.	108	68	1	..	..	946	..	361
Victoria Gold-mining Co. (Ltd.)	8/12/06	22,165	1,385	..	110,829	0 0 3	..	239	8	269	754	1,549	..	9
Waihi Beach Gold-mining Co. (No Liability) ..	7/4/05	14,000	10,122	..	140,000	0 1 6	378	205	13	..	..	5,870	..	520
Waihi Consolidated (Ltd.)	23/3/00	25,000	5,208	15,000	100,000	0 4 0½	..	112	1	..	..	12,843	..	435
Waihi Discovery Gold-mining Co. (Ltd.) ..	17/11/05	12,000	1,390	1,125	120,000	0 0 5½	..	27	..	..	..	1,379	..	..
Waihi Extended Gold-mining Co. (Ltd.) ..	12/8/95	149,967	28,938	5,498	149,967	0 4 7½	244	444	15	..	..	29,255	..	86
Waihi Gladstone Gold-mines (Ltd.)	29/5/06	25,000	1,367	12,500	100,000	3d. & 3½d.	92	23	4	..	..	1,341	..	39
Waihi Standard Gold-mining Co. (Ltd.) ..	23/3/05	5,000	208	..	100,000	0 0 0½	..	23	..	..	..	245	..	38
Waiotahi Gold-mining Co. (Ltd.)	1/8/71	18,000	15,000	..	240,000	0 1 3	..	540	7	..	640,510	237,102	391,800	..
Waitangi Gold-mining Co. (No Liability) ..	19/3/06	4,250	2,333	..	85,000	0 0 8	..	151	9	148	501	2,821	..	..
Watchman Gold-mining Co. (Ltd.)	11/12/06	7,500	1,417	250	100,000	0 0 4	..	98	6	2	6	1,183	..	22
Whangaroa Amalgamated Copper Co. (Ltd.) ..	10/1/07	12,500	3,651	5,000	50,000	0 2 6	..	129	8	..	..	7,803	..	18
Totals		932,611	276,191	179,247	6,918,906	..	5,461	9,240	433	69,279	774,002	640,154	419,236	15,809
NELSON DISTRICT (INCLUDING WEST COAST).														
Addison's Long Tunnel Gold-mining Co. (Ltd.)	24/9/98	1,500	1,409	83	1,500	1 0 0	8	24	4	2,243	8,846	9,318	828	119
Bignell's No Town Gold-dredging Co. (Ltd.) ..	10/4/00	9,000	4,840	4,160	9,000	1 0 0	..	117	9	4,514	17,660	19,395	2,700	..
Blackwater River Gold-dredging Co. (Ltd.) ..	27/4/00	9,475	3,000	3,000	9,475	0 18 0	..	92	13	7,320	29,180	32,105	7,812	..
Britannia Gold-mining Co. (Ltd.)	3/3/99	10,000	2,464	7,160	20,000	0 7 8¾	44	12	6	4,291	16,160	15,351	3,342	82
Caledonian United Gold-mining Co. (Ltd.) ..	4/7/06	4,950	1,219	200	20,600	1/5, 5d. and 11d.	155	58	8	..	..	1,113	..	228
Keep-it-Dark Quartz-mining Co. (Ltd.) ..	2/3/74	20,000	6,208	10,000	20,000	0 16 2½	..	45	56	107,788	415,112	275,444	157,667	..
Macleod's Terrace Sluicing and Water-distributing Co. (Ltd.)	4/4/03	16,645	10,611	..	16,645	1 0 0	..	37	1	..	130	10,919	..	145
Mineral Belt Copper-mining Co. (Ltd.) ..	13/11/03	16,220	4,555	..	16,220	1 0 0	..	40	..	..	..	4,666	..	95
Minerals (Limited)	13/6/03	7,493	4,917	2,575	32,476	0 5 0	..	102	6	..	5,432	7,407	933	25
Minerva Gold-mining Co. (Ltd.)	24/2/90	12,000	6,856	400	17,248	0 6 4½	..	8	1	821	2,947	11,257	..	34
Mont d'Or Gold-mining and Water-race Co. (Ltd.)	25/7/82	12,000	10,800	..	12,000	0 18 0	..	33	16	31,699	123,838	90,021	43,800	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*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.			
NELSON DISTRICT (INCLUDING WEST COAST)—*continued*.														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Montgomery Sluicing Co. (Ltd.)	3/1/06	3,000	3,000	..	3,000	1 0 0	..	47	6	349	1,398	3,156	..	1,090
Nelson Creek Gold-dredging Co. (Ltd.)	1/7/99	10,929	8,429	2,500	10,929	1 0 0	..	92	9	13,854	54,275	51,003	23,375	1,032
New Big River Gold-mining Co. (Ltd.)	19/8/07	6,000	600	..	23,900	0 0 6	..	56	18	1,059	4,285	2,162	1,800	440
Ross Goldfields (Limited)	4/9/07	35,000	3,550	35,000	70,000	0 2 0	..	61	..	..	..	3,516	..	5,005
Slate River Sluicing Co. (Ltd.)	26/7/00	14,875	14,842	1,200	14,875	1 0 0	33	85	..	1,654	..	20,575	..	..
Takaka Sluicing Co. (Ltd.)	28/1/01	5,395	5,395	3,725	9,500	1 0 0	..	44	10	4,045	15,196	16,249	4,104	111
Totals	..	194,482	92,695	70,003	307,368	..	240	953	163	179,637	694,459	573,657	246,361	8,406
OTAGO DISTRICT (INCLUDING SOUTHLAND).														
Alexandra Eureka Gold-dredging Co. (Ltd.)	14/11/99	12,000	..	12,000	12,000	1 0 0	..	39	8	10,331	39,986	23,619	16,050	159
Alexandra Lead Gold-dredging Co. (Ltd.)	26/7/99	17,521	14,521	3,000	17,521	1 0 0	..	183	10	8,544	32,982	34,841	14,032	1,347
Alpine Consols Dredging Co. (Ltd.)	18/10/07	4,673	1,600	..	4,673	1 0 0	1,263	123	8	..	..	277	..	132
Argyle Gold-dredging Co. (Ltd.)	24/12/02	6,000	6,000	..	6,000	1 0 0	..	7	..	5,428	21,844	22,707	7,130	70
Bakery Flat Sluicing Co. (Ltd.)	10/9/96	2,500	2,013	300	2,500	0 18 6	..	28	..	3,280	12,629	12,236	1,063	218
Barewood Gold-mining Co. (Ltd.)	24/12/03	7,900	7,900	..	7,900	1 0 0	..	52	21	4,557	17,537	17,714	2,800	689
Black's Gold-dredging Co. (Ltd.)	4/10/07	425	425	..	425	1 0 0	83	20	8	38	148	389	..	179
Branch Creek Sluicing and Elevating Co. (Ltd.)	8/7/07	3,500	1,702	3,500	7,000	0 13 0	586	51	17	..	..	1,091	..	..
Canada Reefs Co. (Ltd.)	14/6/07	2,600	1,000	1,600	2,600	1 0 0	..	35	9	159	580	844	..	113
Central Charlton Dredging Co. (Ltd.)	8/12/99	5,300	5,300	1,700	7,000	1 0 0	..	100	8	6,918	27,217	25,013	7,350	..
Charlton Creek Gold-dredging Co. (Ltd.)	5/5/99	4,000	4,000	1,000	5,000	1 0 0	..	75	9	6,867	27,122	28,400	5,250	75
Chicago Gold-dredging Co. (Ltd.)	1/11/99	2,500	6,750	2,500	5,000	2 10 0	..	61	7	7,266	28,204	22,585	3,586	182
Clutha River Gold-dredging Co. (Ltd.)	31/3/04	3,500	1,300	2,200	3,500	1 0 0	..	146	8	2,573	9,994	10,146	347	743
Craig's Freehold Gold-dredging Co. (Ltd.)	20/8/00	6,342	4,217	2,500	8,842	0 14 0	222	116	..	12,810	853	5,228	..	580
Crewe Gold-dredging Co. (Ltd.)	7/9/02	2,000	2,000	3,000	5,000	1 0 0	..	18	14	3,385	13,129	15,047	..	195
Criffel Lead Sluicing Co. (Ltd.)	30/9/05	8,000	6,500	1,500	8,000	1 0 0	..	74	14	114	443	7,205	..	541
Davidson's Freeholds (Ltd.)	21/3/07	14,000	..	14,000	14,000	1 0 0	..	2	10	..	1,003	736	..	1,357
Deep Stream Gold-mining Co. (Ltd.)	19/11/06	2,500	..	2,000	2,500	1 0 0	..	8	6	228	877	1,304	..	348
Earnscleugh Gold-dredging Co. (Ltd.)	15/7/01	8	8	10,992	11,000	1 0 0	..	11	32	25,749	99,457	79,370	8,525	802
Electric Gold-dredging Co. (Ltd.)	2/9/99	26,000	..	26,000	26,000	1 0 0	..	271	18	45,930	176,583	56,791	122,843	954
Enterprise Gold-dredging Co. (Ltd.)	24/8/97	7,000	3,500	3,500	7,000	1 0 0	..	138	8	20,083	77,811	52,939	26,885	157
First Bendigo Sluicing Co. (Ltd.)	6/11/06	3,000	3,000	..	3,000	1 0 0	..	14	4	18	67	501	..	431
Garden Gully Dredging Co. (Ltd.)	14/8/03	2,600	2,600	..	2,600	1 0 0	..	32	8	2,583	9,174	12,061	550	..
Golden Bed Dredging Co. (Ltd.)	5/5/99	11,000	10,694	2,000	12,794	1 0 0	..	178	9	9,503	36,749	31,063	8,268	79
Golden Crescent Sluicing Co. (Ltd.)	26/11/98	3,500	3,500	..	3,500	1 0 0	..	25	8	4,614	17,897	13,500	7,084	37
Golden Vein Gold-dredging Co. (Ltd.)	4/12/06	909	897	..	909	1 0 0	12	17	7	66	255	..	..	23
Golden Treasure Dredging Co. (Ltd.)	11/7/93	1,500	1,384	1,500	3,000	1 0 0	..	38	8	15,521	59,789	41,091	20,995	144
Gold King Dredging Co. (Ltd.)	18/8/07	4,000	..	..	4,000	1 0 0	..	..	8	94	365	587	..	222
Hartley and Riley Beach Dredging Co. (Ltd.)	14/7/97	6,500	6,300	200	6,500	1 0 0	..	327	8	29,120	112,641	36,818	80,275	87
Hessey's Gold-dredging Co. (Ltd.)	22/7/02	5,000	3,700	1,300	5,000	1 0 0	..	79	10	4,322	17,019	16,790	4,000	71
Hit or Miss Water-race Co. (Reg.)	15/6/67	6,020	..	..	301	20 0 0	..	3	..	..	..	..	..	..
Hydraulic Motor-dredging Co. (Ltd.)	—/2/04	300	300	..	300	1 0 0	..	4	..	464	1,785	..	..	434

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*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.*														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Island Block Gold-dredging and Sluicing Co. (Ltd.)	26/2/00	24,030	12,030	12,000	25,000	1 0 0	..	104	14	7,187	28,028	32,262	2,403	208
Jutland Hydraulic Dredging Co. (No Liability)	28/6/01	5,000	4,100	900	5,000	1 0 0	.	8	7	3,621	13,868	15,764	2,500	199
Kia Ora Victoria Gold-dredging Co. (Ltd.)	10/8/01	9,100	5,915	..	9,100	0 13 0	..	38	16	14,309	58,073	42,908	21,613	..
Koputai Gold-dredging Co. (Ltd.)	9/1/06	3,200	3,200	300	3,500	1 0 0	..	46	5	1,922	7,546	8,134	2,275	..
Kura Gold-dredging Co. (Ltd.)	24/8/05	4,800	4,800	..	4,800	1 0 0	..	41	8	1,181	4,345	10,629	240	200
Lady Roxburgh Gold-dredging Co. (Ltd.)	3/3/00	9,000	4,885	2,000	11,000	0 14 0	..	102	8	4,490	17,263	19,748	3,194	297
Ladysmith Gold-dredging Co. (Ltd.)	19/4/00	12,000	3,964	3,000	14,500	0 10 0	..	76	9	4,846	18,674	17,598	5,459	113
Lee and Party, Waikaka (Ltd.)	14/7/06	5,180	3,680	1,500	5,180	1 0 0	..	14	8	1,152	4,632	2,836	2,072	192
Lone Star Dredging Co. (Ltd.)	15/3/02	720	600	..	720	0 16 8	..	15	17	4,164	16,372	15,636	1,080	452
Lower Nevis Dredging Co. (Ltd.)	29/9/06	600	600	600	1,200	1 0 0	..	7	7	579	2,231	2,521	300	162
Luggate Mining Co. (Ltd.)	17/12/04	1,200	65	1,200	24	..	..	9	..	10	39	345	..	219
Magnum Bonum Gold-dredging Co. (Ltd.)	1/3/06	2,500	2,500	..	2,500	1 0 0	..	10	8	2,006	8,084	6,826	2,875	66
Manuherikia Gold-dredging Co. (Ltd.)	1/9/99	12,000	6,000	6,000	12,000	1 0 0	..	182	8	13,383	51,136	27,527	28,500	172
Manuka Mining Co. (Ltd.)	26/5/04	200	200	..	200	1 0 0	..	7	3	354	1,370	1,938	..	54
Masterton Gold-dredging Co. (Ltd.)	6/1/04	5,000	3,500	1,500	5,000	1 0 0	..	80	8	7,906	31,169	14,152	19,500	..
Matakanui Gold-mining Co. (Ltd.)	22/1/02	7,000	7,000	7,000	7,000	1 0 0	..	8	7	2,595	9,925	10,106	1,924	17
Mill Creek Freehold (Ltd.)	27/11/03	4,000	4,000	..	90	50 0 0	..	29	7	2,539	10,196	12,640	1,600	2
Molyneux Kohinoor Dredging Co. (Ltd.)	27/1/00	7,325	7,439	2,300	9,625	1 0 0	..	150	8	4,071	15,671	18,241	4,572	100
Mount Morgan Sluicing Co. (Ltd.)	7/7/02	800	800	2,000	2,800	1 0 0	..	7	3	935	3,598	5,075	..	212
Muddy Creek Co. (Ltd.)	2/11/01	1,120	1,120	725	1,845	1 0 0	..	25	10	7,461	29,347	20,837	7,472	153
Muddy Terrace Sluicing Co. (Ltd.)	4/10/06	10,400	9,630	2,600	10,400	1 0 0	770	74	60	..	..	10,475	..	845
Mystery Flat Gold-dredging Co. (Ltd.)	16/7/00	5,512	4,512	1,000	5,512	1 0 0	..	104	8	8,639	34,060	24,368	13,504	511
Naseby Dredging and Hydraulic Sluicing Co. (Ltd.)	16/10/06	5,000	2,288	2,000	5,000	0 15 3	..	24	4	3,586	13,804	14,807	2,875	27
New First Chance Gold-dredging Co. (Ltd.)	8/11/06	4,240	1,770	1,770	4,240	1 0 0	..	146	9	141	541	2,473	..	548
New Fourteen-mile Beach Gold-dredging Co. (Ltd.)	17/3/04	4,194	4,194	..	4,793	0 17 6	..	91	8	3,973	15,428	13,146	5,991	39
New Perseverance Gold-dredging Co. (Ltd.)	21/4/04	17,000	675	14,000	17,000	1 0 0	75	152	16	7,332	28,431	30,150	3,500	121
New Roxburgh Jubilee Dredging Co. (Ltd.)	22/1/02	2,500	2,489	5,000	7,500	1 0 0	..	172	8	8,316	32,319	18,003	17,241	1,850
New Skipper's Sluicing Co. (Ltd.)	16/9/02	4,831	1,495	861	4,831	1 0 0	..	27	6	889	3,395	7,038	..	59
New Trafalgar Dredging Co. (Ltd.)	13/4/04	6,500	2,500	2,000	6,500	1 0 0	..	107	10	2,785	10,953	15,573	1,950	479
Nokomai Hydraulic Sluicing Co. (Ltd.)	26/3/98	24,000	7,000	17,000	24,000	1 0 0	..	59	52	18,134	68,783	55,656	21,084	226
Olrig Dredging Co. (Ltd.)	13/3/99	9,955	8,955	1,000	9,955	1 0 0	..	70	8	5,897	22,936	25,571	4,173	..
Otago Gold-dredging Co. (Ltd.)	20/5/95	5,000	2,000	3,000	5,000	1 0 0	..	61	16	17,065	65,980	55,935	14,750	695
Ourawera Gold-mining Co. (Ltd.)	23/5/95	3,000	3,000	..	3,000	1 0 0	..	17	11	9,177	36,488	28,226	12,415	18
Paricale Gold-dredging Co. (Ltd.)	7/9/06	6,200	5,000	1,200	6,200	1 0 0	..	28	3	70	240	6,500	..	1,000
Paterson's Freehold Gold-mining Co. (Ltd.)	15/7/99	8,000	8,000	4,000	12,000	1 0 0	..	32	16	10,919	43,675	51,256	9,600	..
Phœnix Water-race Co. (Ltd.), (Reg.)	12/10/67	1,500	1,500	..	1,000	1 10 0	..	18	1	..	..	1,036	7,706	6
Punt Gold-dredging Co. (Ltd.)	10/11/04	3,000	1,750	1,250	3,000	1 0 0	..	30	9	2,491	9,610	13,313	..	1,986
Riley's Revival Gold-dredging Co. (Ltd.)	27/4/07	2,350	1,851	650	3,000	1 0 0	499	29	8	68	262	1,108	..	819
Rise and Shine Gold-dredging Co. (Ltd.)	24/2/00	10,000	9,746	2,000	12,000	1 0 0	254	169	19	15,356	59,352	58,811	9,900	673
River View Dredging Co. (Ltd.)	27/4/06	2,115	2,115	..	2,115	1 0 0	..	27	7	87	328	2,841	..	697
Round Hill Mining Co. (Ltd.)	30/7/02	28,245	6,753	21,492	5,649	5 0 0	..	180	35	26,557	106,074	114,287	2,542	650

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891, 1894, and 1900—*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*.														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Roxburgh Amalgamated Mining and Sluicing Co. (Ltd.)	2/3/99	29,152	13,121	15,000	29,152	0 18 6	..	171	14	24,986	93,265	78,405	28,057	63
Royal Waimumu Gold-dredging Co. (Ltd.) ..	6/10/00	5,500	5,330	..	5,500	1 0 0	..	33	10	5,740	23,098	23,095	4,843	27
Sailor's Bend Dredging Co. (Ltd.)	1/9/99	8,000	6,500	1,500	8,000	1 0 0	..	161	9	4,150	16,042	17,948	3,587	11
Sailor's Gully (Waitahuna) Gold-mining Co. (Ltd.)	3/6/96	2,000	200	1,800	2,000	1 0 0	..	11	4	2,668	9,993	7,590	2,650	51
Sandy Point Gold-dredging Co. (Ltd.)	20/2/03	8,000	8,000	..	8,000	1 0 0	..	44	10	7,441	29,031	29,582	7,200	645
Scandinavian Water-race Co. (Ltd.)	1868	12,000	12,000	..	240	50 0 0	..	21	16	..	..	..	15,666	4,906
Shetland Consolidated Sluicing Co. (Ltd.) ..	7/10/07	2,400	480	..	3,600	0 4 0	..	12	7	..	..	282	..	72
Shotover Consolidated Mining Co. (Ltd.) ..	13/7/96	3,000	2,551	8,000	11,000	0 17 0	..	63	10	148	571	3,090	..	..
South Waikaia Dredging Co. (Ltd.)	9/11/07	3,500	894	..	3,500	0 7 6	156	45	..	..	..	78	..	818
Stafford Gold-dredging Co. (Ltd.)	17/5/05	289	289	1,734	2,023	1 0 0	..	7	7	2,374	9,226	7,888	506	213
Switzers Dredging Co. (Ltd.)	9/6/06	3,880	3,880	500	4,580	1 0 0	..	38	8	243	947	6,070	..	540
Taieri Falls Sluicing and Electric-power Transmission Co. (Ltd.)	9/10/06	4,000	1,208	2,000	4,060	0 18 0	645	63	3	..	..	1,054	..	48
Tallaburn Hydraulic Sluicing Co. (Ltd.) ..	3/12/04	1,200	..	..	12	100 0 0	..	7	5	943	3,629	4,129	1,380	..
Tamaiti Gold-mining Co. (Ltd.)	17/8/05	3,000	2,250	250	3,000	1 0 0	..	19	4	550	2,148	4,546	250	475
Tinker's Gold-mining Co. (Ltd.)	10/6/02	15,000	15,000	15,000	15,000	1 0 0	..	12	8	3,792	14,585	16,829	7,125	228
Undaunted Gold-mining Co. (Ltd.)	1/3/98	15,000	15,000	..	1,500	10 0 0	..	34	9	9,021	35,235	21,153	13,125	382
United M. and E. Water-race Co. (Reg.) ..	23/4/72	7,600	7,600	..	152	50 0 0	..	7	8	14,235	55,086	62,155	3,078	639
Vinegar Hill Hydraulic Sluicing Co. (Ltd.) ..	23/9/00	6,000	..	..	6,000	1 0 0	..	13	7	..	7,868	7,317	1,050	840
Waikaka Gold-dredging Co. (Ltd.)	20/10/03	3,500	1,750	1,750	3,500	1 0 0	..	44	10	4,391	17,357	14,793	5,950	354
Waikaka Queen Gold-dredging Co. (Ltd.) ..	6/7/99	6,560	6,560	1,050	6,560	1 0 0	..	101	8	5,660	22,897	25,841	3,038	127
Waikaka Syndicate (Ltd.)	20/12/01	7,000	3,000	4,000	7,000	1 0 0	..	22	16	9,722	38,884	29,582	11,900	..
Waikaka United Gold-dredging Co. (Ltd.) ..	11/2/99	4,700	4,700	6,500	11,200	1 0 0	..	32	16	16,302	64,394	68,973	26,600	..
Waitahuna Hydraulic Sluicing Co. (Ltd.) ..	10/11/04	2,000	1,200	..	2,000	0 12 0	..	8	6	1,639	6,370	5,589	2,100	60
Waitahuna Dredging Co. (Ltd.)	22/2/02	1,380	1,380	..	1,380	1 0 0	..	22	..	605	2,330	4,034	1,277	36
Waipori Consolidated Gold Dredges (No Liability)	22/3/99	2,500	2,275	225	2,500	1 0 0	..	7	7	4,699	17,635	17,352	2,563	160
Welshman's Limited	18/9/07	2,130	2,130	1,000	2,130	1 0 0	383	30	..	..	..	1,425	..	1,161
Totals	..	620,206	382,030	280,949	630,733	..	4,949	5,877	962	576,117	2,200,957	1,887,242	713,788	36,242
Grand totals	..	1,747,299	750,916	530,199	7,857,007	..	10,650	16,070	1,558	825,033	3,669,418	3,101,053	1,379,385	60,457

STATEMENT of AFFAIRS of MINING COMPANIES, as defined by Section 2 of "The Mining Companies Acts Amendment Act, 1897," and published in accordance with "The Mining Companies Acts Amendment Act, 1897."

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.														
		£	£	£		£ s. d.	£ s. d.			Oz.	£	£	£	£
Arrindell Syndicate (Ltd.)	10/12/03	10,000	..	12,000	..	..	..	..	10	58	168	7,000	..	..
New Zealand Crown Mines Co. (Ltd.)	27/6/96	200,000	..	100,000	86,209	1 0 0	..	242	160	275,110	637,352	586,003	12,224	5,888
New Zealand Jubilee Gold-mine (Ltd.)	16/11/00	31,250	..	..	..	..	..	..	8	..	1,646	18,291	..	11,000
Talisman Consolidated (Ltd.)	12/8/04	270,000	177,393	..	197,103	0 18 0	..	708	275	..	604,109	..	46,888	..
Totals	..	511,250	177,393	112,000	283,312	..	..	950	453	275,168	1,243,275	611,294	59,112	16,388
OTAGO DISTRICT.														
Bluespur and Gabriel's Gully Consolidated Gold-mining Co. (Ltd.)	1/2/88	91,266	..	46,268	130,000	..	..	..	28	47,013	178,879	118,572	..	140
Totals	..	91,266	..	46,268	130,000	..	..	..	28	47,013	178,879	118,572	..	140
Grand Totals	..	602,516	177,393	158,268	413,312	..	..	950	481	322,181	1,422,154	729,866	59,112	16,528

(*g.*) EXAMINATIONS UNDER "THE MINING ACT, 1905."

Questions used in Examination of Mining Managers for First-class and Second-class Certificates.

Subject A.—*The Laying-out and Construction of Shafts, Chambers, Main Drives, Adits, Rises, Stopes, &c.*

1. The plan (not here shown) illustrates a lode outcropping for a length of 700 ft. You are asked to lay off and execute all the preliminary works required to open up the lode to a depth of 260 ft. below A, D, and F. The lode underlies 10° to the west. Place shafts, winzes, and uprises on plan and section. State in detail (*a*) where you would commence work; (*b*) where you would end; (*c*) how you would complete all connections; and, assuming the lode to average in width 3 ft. at A, 6 ft. at B, 7 ft. at C, 5 ft. at D, 10 ft. at E, 12 ft. at F, 10 ft. at G, and 8 ft. at H, give the total tons, taking 13 cubic feet to the ton. A creek (half a mile distant) containing 15 heads of water could be taken on to the site (over easy country), giving a head of 200 ft.: could you utilise it, and how?

2. The winding-pulley on poppet-heads is 70 ft. above the collar of shaft, the winding-drum is on the level of the collar of shaft and 65 ft. distant; the vertical load is 2½ tons: show by calculation and sketch the resultant strain on the poppet-heads; and, supposing the excavation for the poppet-heads had been in solid rock having an angle of elevation of 70°, show by sketch how you could easily counteract the strain on the poppet-heads.

3. Having selected the site for a winding-shaft, give full details of the preliminary works required.

4. If you took the creek mentioned in Question 1 on to the site, and you had a pelton wheel as your motor, what effective horse-power would you have at your disposal?

Subject B.—*On the Timbering of Shafts, Adits, Main Drives or Levels, Passes, Stopes, and generally on the Systems of Timbering Mines, and also in filling up Old Workings.*

1. From a shaft timbered with planking you are to open out for a chamber; the material is loose, and inclined to run: describe fully how you would do the work. Give height, width, and length of chamber, distance of sets apart (centre to centre), sizes and description of timbers; also, how would you join the chamber sets with the sets in the drive?

2. The quartz has to be conveyed to the shaft for a distance of 1,000 ft. and over: to insure speedy transit would you provide a double line throughout, or what would you do? If you provide a double line, give width between the legs, describe the system you would adopt fully, and give your reasons.

3. The walls along the lode are heavy and of a swelling nature; the ordinary sets collapse: show how you would fit the sets to withstand the pressure, and give a longitudinal section of the level timbered complete, also sizes and description of the timbers you would use.

4. Sketch a three-compartment uprise timbered with logs: where would you place the ladderway, and why? Give description and figure sizes of timbers on sketch.

5. Show by sketch how you would timber a lode 40 ft. in width. The angle is 15° from the perpendicular. Figure lengths and sizes on sketch, and describe fully.

6. To what height would you stope on the above lode before filling in, and where would you procure your filling if you were 1,000 ft. below the surface?

7. A cap-piece of kauri is 18 in. in diameter and 4 ft. in the clear between the legs: required the breaking-strain.

8. What would be the safe load on a stringer of black-birch 14 in. by 18 in.? The length between the supports is 18 ft., and one end is 6 ft. lower than the other.

Subject C.—*Ventilation of Mines and Composition of Gases.*

1. What is meant by the diffusion of gases? Explain how the ventilation of mines is assisted thereby; also state by which of the two gases H_2S or CO_2 is the diffusion most rapid?

2. What are the three laws of friction of the air in mines, as regards (*a*) rubbing-surface, (*b*) sectional area; (*c*) velocity?

3. Describe natural ventilation, its causes, disadvantages, and limits of application; also state under what conditions may the direction of the air-current be reversed in this system of ventilation.

4. Explain the theory of centrifugal ventilating-machines; state why they are superior to other forms of mechanical ventilators generally. Illustrate by sketch a ventilating-fan you would recommend for a small mine.

5. In addition to the pollution of the air in mines by gases introduced naturally from the surrounding rocks, various other causes combine to render the atmosphere of some mines unfit for life: state what these causes may be.

6. Ventilate the sketch section of mine-workings (not here shown), show by arrows the direction of the air-current round all the miners, and by dotted lines the position of any air-boxes, sollars, or brattice necessary; and state how the natural ventilation may be improved without having recourse to machinery, water, steam, or furnace.

SUBJECT D.—*Tapping Water in Mines, and Mode of constructing Dams in Underground Workings to keep the Water back.*

1. In sinking a shaft through solid rock, at 50 ft. in depth a fissure is encountered which produces a considerable flow of water; the shaft is to be sunk to a depth of 1,000 ft.: what steps would you take to prevent the flow of water getting down the shaft as the sinking proceeded? Give full details of the measures you would adopt.

2. A crosscut in hard rock is to be utilised as a dam; the crosscut is 7 ft. by 6 ft.; the water is to rise to a height of 4 ft.: describe fully the material you would use, and your mode of construction.

3. A breastwork is to be constructed in a similar crosscut to the above, where the water is to rise to a height of 300 ft. above the centre of the breastwork: give the total pressure on the structure; also (*a*) your mode of construction, (*b*) the material you would use, and your reasons.

4. A winze (securely timbered with black-birch) has been sunk on the lode to a depth of 70 ft., and is then allowed to fill with water; after twelve months an uprise to connect with the bottom of the winze is within 20 ft. of the holing through; the survey can be relied on: what precautions (if any) would you now take to insure the safety of the workmen when making the connection?

SUBJECT E.—*Blasting, and the Use of Explosives.*

1. A borehole 2 in. in diameter is filled with blasting-gelatine to a depth of 6 in.: required the weight of the charge.

2. In a similar borehole to the above, what weight of gelignite would be required to do the same work?

3. What explosives would you use for the following works: (*a*) Sinking a wet shaft; (*b*) driving a level through very hard rock; (*c*) stoping on medium-hard quartz? Give your reasons in each case.

4. Give the weight and composition of charge of a No. 6 detonator (Thistle brand), (*a*) for safety fuse, (*b*) for electric blasting.

5. In case of a misfire, what time would you allow to elapse before returning to the face?

6. What is the most powerful blasting-explosive known? and give its composition.

7. What do you consider the best fuse for blasting in water or very wet ground?

8. A hole is to be charged with gelignite; the temperature is 40° Fahr.: describe fully what steps (if any) you would take before charging the hole; also state the six operations required in charging the hole.

9. To fire a group of holes simultaneously by electricity, give sketches showing how you connect the wires in series and in parallel, and state what fuses you would use in each case; also state what test you would apply to make certain that there was no break in the circuit.

10. A missed shot in electric blasting may occur from either one of four causes: name them.

SUBJECT F.—*A Knowledge of Arithmetic and the Method of Keeping Mining Accounts.*

1. Evaluate $\sqrt{\frac{246}{169}}$ and $\sqrt[3]{\cdot 000125}$.

2. A bar of gold as produced from a mine contained 302·67 oz., which after melting at the mint was worth 320·10 oz. of standard gold. What is the value per ounce of the gold as produced from the mine, the mint value of standard gold being £3 17s. 10½d. sterling per ounce?

3. An analysis of expenditure at a large quartz mine is subdivided under the following headings: (*a*) Mining; (*b*) Treatment; (*c*) Realisation of Bullion; (*d*) General Expenses; (*e*) Total Working Expenses; (*f*) Development; (*g*) Capital Account; (*h*) Total. Specify the principal items which should appear under the above headings.

SUBJECT H.—*Pumping Appliances and the Drainage of Mines.*

1. What quantity of coal per indicated horse-power per hour would be consumed under favourable circumstances by a pumping-engine?

2. Is electric driving suitable for single- or double-acting plunger or bucket pumps? State the reasons for your answer.

3. What do you consider the practical limit to the length of a draw-lift section of pumps? State the disadvantages of exceeding such a limit.

4. What is the horse-power of a pumping-engine capable of raising 2,000 gallons per minute from a depth of 300 ft.? Give the diameter of the working barrel.

5. What size of engine would you erect underground to raise 120,000 gallons of water per hour from a depth of 300 ft.? Assume the piston and pump are double-acting, and the speed 250 ft. per minute, with 30 lb. effective steam-pressure per square inch.

SUBJECT I.—*The Haulage in Shafts and on Underground Planes; also the Strength of Haulage Ropes and Chains.*

1. What kind of engine would you recommend to raise 400 tons in 8 hours from a depth of 300 ft.? State the size of rope, diameter of drum, pressure of steam, and theoretical horse-power of the engine.

2. With 60-ft.-high pulley-frames (poppet-legs), what should be the minimum length between the centres of the winding-drum and of the shaft?

3. Explain the working of the winding-engine; carefully illustrate by sketch its chief parts, especially the valve, and give the names of the chief parts.

4. Under ordinary conditions what would be the friction per ton on a level underground tramway, and how would it vary in relation to the sizes of the wheels and axles employed?

SUBJECT J.—*The Effect that Faults, Slides, and Mullock-bars have on Lodes, and how to ascertain the Direction of Slides and Heavals.*

1. Describe (*a*) a heave, (*b*) a throw, (*c*) a slide; and give sketches of each.

2. If you were driving a level on the lode at 100 ft. from your boundary, and the lode tapered off and cut out—(*a*) the walls are still clearly defined with a little pug between; (*b*) the walls have merged into the country rock: what would you do in each case?

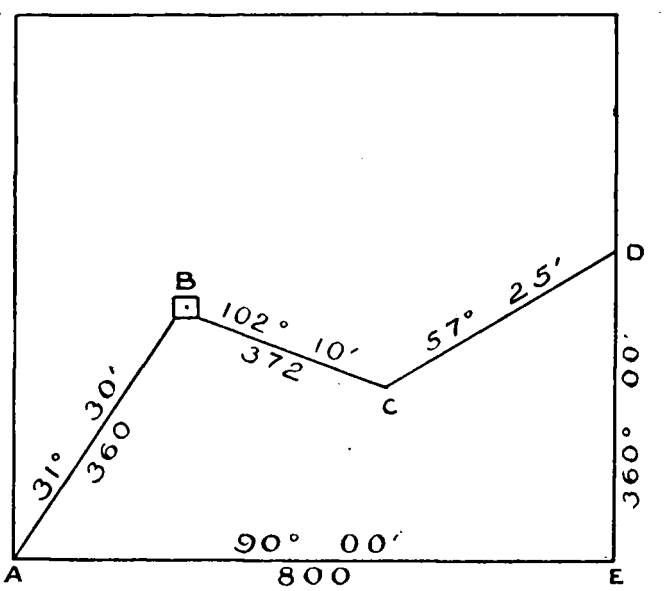
3. You find your lode suddenly cut off by a slide: what evidence would you look for to enable you to determine whether the lode had been carried away to a long or a short distance?

4. Give a list of any heaves, throws, or slides known to yourself, and state in what mines they occurred.

5. Give the best rule known to you for picking up lost lodes.

6. Give sketches of (*a*) masses of ore, and (*b*) "reticulated masses." Give examples of where they occur, and how they may have been formed.

SUBJECT K.—*A Knowledge of Underground Surveying, and of making Plans of Underground Working showing the Dip or Inclination and Strike of Reefs or Lodes.*



The above diagram represents a mining claim: B the position of a shaft 80 ft. deep, and BCD an underground drive from the shaft to the eastern boundary of the claim, having a fall of 4 ft. 10 in. Distances in links.

1. Compute the distances C to D, and D to E.
2. Compute the depth (in feet) below the surface of the end of the drive at D.
3. Compute the area of the figure ABCDE.
4. Describe the "dip" and "strike" of a reef, and give diagrams.
5. Describe in their proper order the complete adjustments of a Y theodolite.
6. Explain "parallax" in telescope, its effect, and how to correct it.

SUBJECT L.—*A Knowledge of the different Rocks where Gold, Silver, Tin, Copper, Zinc, Lead and Antimony are found, and of the Formation of Lodes and Leads.*

[Candidates need only answer three of the questions.]

1. Name the chief New Zealand localities in which copper, tin, and antimony are found; in each case mentioning the mineral form in which the metal occurs and the nature of the rock enclosing the deposit.

2. Describe the auriferous lodes of any district in New Zealand with which you are acquainted, paying attention to the following points:—

(*a.*) Dimensions of lodes;
(*b.*) Dip and strike;
(*c.*) Enclosing rock (country);
(*d.*) Minerals associated with the gold; and
(*e.*) Distribution of the gold in the lodes (shoots, &c.), and the factors which would appear to have had an influence on the same.

3. Give some account of the way in which payable deposits of auriferous gravels have been formed. Exemplify your remarks by reference to localities in New Zealand or elsewhere.

4. What is meant by "fissure veins," "bedded veins," "contact veins." Refer in each case to occurrences with which you are acquainted.

QUESTIONS USED IN EXAMINATION OF BATTERY SUPERINTENDENTS FOR CERTIFICATES.

SUBJECT A.—*The Different Modes of reducing and pulverising Ores.*

1. State where you were employed in crushing-batteries where the gold was recovered by cyanide solution. Give the dates, and the names of the battery-superintendents you were under; also state in what capacity you were employed.

2. Show by sketch how you would construct a stamp-battery with rock-breakers, ore-bins, ore-feeders, amalgamating-tables, and concentrating-machines. Give the relative heights of each above the lower floor.

3. Show by calculation the power required to work a stamp-battery with 40 heads of stamps each weighing 1,200 lb. making 98 drops per minute with a drop of 7 in. Also the maximum number of drops that could be made per minute with the drop mentioned without the stamp striking the cam.

4. If you had to get a steam-engine to drive a stamp-battery as mentioned in the foregoing question, show by calculation the diameter of cylinder you would require if the speed of the piston was 450 ft. per minute, and the initial pressure of steam 100 lb. per square inch, cut off at half-stroke.

5. The whole of the machinery in connection with a crushing-battery required 200-horse power to work it, a Pelton water-wheel 6 ft. in diameter being used under a head of 200 ft.: show by calculation the quantity in cubic feet of water, and the diameter of the nozzle required, allowing the wheel to give 80 % of the power of the water.

6. Describe fully the use of tube mills—(*a*) their action; (*b*) the quantity of pulverised ore that has passed through a 20-mesh they are capable of treating to pass through a 40-mesh grating.

SUBJECT B.—*Amalgamating-machines.*

1. What is meant by "amalgamating-machines"? How is amalgamation of gold and silver effected?

2. Describe the action of a Watson-Denny pan. Give the speed it requires to be driven at, the quantity of tailings it is capable of treating in twenty-four hours, the horse-power required to work it, and the quantity of quicksilver in the pan.

3. State what difference there is between a Wheeler and Wilson pan and a Combination pan. Describe fully the action, and the quantity of tailings that each is capable of treating in twenty-four hours.

4. Describe the action of a Frue vanner. State the speed it requires to be worked at, and the quantity of pulverised ore it is capable of treating in twenty-four hours.

5. If you were constructing amalgamating-tables at each battery of five heads of stamps of 1,100 lb. each in weight, give the width and length of tables you would make; also state the gradient you would give them.

SUBJECT C.—*The Use of Quicksilver, and Methods of using it in connection with the Extraction of Gold and Silver from Ores.*

1. State the thickness of copper plates you would use to cover amalgamating-tables, and give the reason why the thickness is required; also state how you would coat copper plates with mercury. Describe fully.

2. State how you would remove antimony from mercury by using an electric current. Describe fully.

3. How do you know when mercury is impure, and not in a fit state to use for the amalgamation of gold or silver?

4. If mercury contained lead, antimony, and zinc, how would you remove these metals from the mercury so as to leave it in a pure state?

5. In using copper-plated tables for amalgamation, what steps would you take to keep the plates always clean and coated with mercury?

6. How is gold or silver removed from amalgamating-tables, and how are these metals separated from the mercury?

SUBJECT D.—*Cyanide, Chlorination, and other Chemical Processes of recovering Gold and Silver from Ores.*

1. Under what conditions would KCN solution produce hydrocyanic-acid gas?

2. If a workman suffered from poisoning while working with KCN solution, what remedies would you adopt?

3. State fully how you would prepare stock solution to contain 15 per cent. KCN.

4. Give a sketch of a cyanide plant, showing the relative positions of all the modern appliances in connection therewith, with numbers indicating the parts they refer to.

5. How many pounds of impure salts containing 65 per cent. of KCN would be required to make 35 tons of a 0·25-per-cent. solution by using a sump solution 0·04 per cent. KCN?

6. Twenty tons of sump solution containing 0·02 per cent. KCN is used to make up 50 tons of a solution of 0·35 per cent. KCN: how many tons of 2 per cent. solution would be required to make up the 50 tons solution to the required strength?

7. What quantity of a stock solution containing 12 per cent. KCN would be required to make up a solution of 0·27 per cent. by using a sump solution containing 0·01 per cent. KCN?

8. If a circular vat 30 ft. in diameter was filled with fine pulverised ore to a depth of 4 ft., and a KCN solution above the ore to a depth of 20 in., show by calculation the number of tons of ore and solution in the vat.

9. Describe fully how you would treat slimes; also why it is necessary to subject slimes to a different treatment from ordinary pulverised ore.

10. Describe fully how gold and silver are recovered from KCN solutions, and the different processes gone through before they are in a marketable state.

11. Describe fully how gold is recovered from pulverised ore by chlorination.

(*a.*) How is chlorine produced by the Plattner process and also by the Newbery-Vautin process?

(*b.*) The time required for treatment?

(*c.*) The treatment the ore goes through before being subjected to chlorination?

12. How is gold recovered from chlorine-solution? State fully.

13. What would you do if any of the workmen were subjected to chlorine poisoning?

SUBJECT E.—*Sampling and Testing of Ores.*

1. How would you take a sample for assay from a large heap of ore?

2. Describe the fire assay for gold and silver of a sample of iron-pyrites.

3. How would you determine the zinc in a sample of ore containing sulphides of lead, zinc, and iron?

4. What tests would you apply to detect the following metals when occurring singly in rocks: Antimony, silver, manganese, bismuth, zinc, tin, and platinum?

5. How would you prove the presence of arsenic, mercury, copper, and iron in a piece of stone containing these elements as sulphides?

SUBJECT F.—*A Knowledge of Arithmetic and the Method of keeping Battery Accounts.*

1. The wages for four classes of workmen amounted to £500. There were 20 men in class A; 15 in class B, who got $\frac{3}{5}$ of each man's wages paid in class A; 12 men in class C, who got $\frac{7}{16}$ of each man's wages in class B; 7 men in class D, who got $\frac{7}{12}$ of each man's wages in class C. How much did each man receive?

2. A pole 75 ft. in height when standing vertical broke at a certain place but still held together, when the top reached the ground 30 ft. from the base on a true horizontal line: what were the lengths of the two pieces?

3. Required the weight in pounds troy of a block of solid gold 3 ft. square at the bottom and 18 in. square at the top, having a height of 5 ft., taking its specific gravity to be 19·4.

4. A circular vat 5 ft. high, 24 ft. 4 in. in diameter at the bottom and 27 ft. 8 in. at the top, was full of water: how many imperial gallons did it contain?

5. A circular cistern whose height was $\frac{5}{8}$ of its diameter held 5,469 imperial gallons: how many square feet of sheet-lead lining would it require to cover the bottom and sides?

SUBJECT G.—*A Knowledge of Part V. of "The Mining Act, 1905."*

Oral.

LIST OF MINE-MANAGERS AND BATTERY-SUPERINTENDENTS WHO HAVE OBTAINED CERTIFICATES UNDER THE MINING ACTS.

THE MINING ACT.

First-class Service Certificates.

Issued under "The Mining Act, 1886," without Examination.

Adams, H. H., Waiorongomai.
*Anderson, P., Thames.
*Andrews, R., Coromandel.
Andrews, T., Thames.
Barclay, T. H., Thames.
Bennett, J., Alexandra.
Benney, J., Coromandel.
Black, T., Waiomo.
Bollersley, N., Boatman's.
Bradbury, M., Reefton.
Bray, John, Lyell.
Burch, W. H., Thames.
Byrne, J. F., Stafford.
Cameron, A., Macetown.
*Cameron, E., Te Aroha.
Chapman, J. A., Dunedin.
Clarke, G. S., Thames.
Comer, R., Thames.
Conradson, M., Lyell.
*Corin, W., Thames.
Cornes, C. A., Karangahake.
Coutts, J., Thames.
Crawford, T. H., Thames.
Crowley, C., Reefton.
Cummings, W., Reefton.
Davis, J. E., Queenstown.
*Davey, C., Ross.
*Donald, J., Cromwell.
*Dryden, S., Thames.
Dunlop, T. A., Thames.
Edwards, J., Skipper's.
Elliott, J., Macetown.
*Evans, F., Skipper's.
Evans, J. H., Skipper's.
*Fitzmaurice, R., Reefton.
Frewen, J. B., Queenstown.
Gavin, T., Te Aroha.
Gilbert, J., Reefton.
Gilmour, T., Thames.
Giles, G. F., West Wanganui.
Glass, W. M., Naseby.
Goldsworthy, J., Waiorongomai.
Greenish, J., Reefton.
*Greenville, W., Ohinemuri.
*Hall, J. P.
*Hansen, P. C., Thames.
Harris, J., Owen's Reefs.
Harrison, R. H., Coromandel.
*Hicks, T. B., Thames.
Hilton, G. P., Bendigo.
*Hodge, F., Coromandel.
Hollis, W., Thames.
Hunter, R., Thames.
James, F., Thames.
Jamieson, A., Coromandel.
Jenkins, M., Wakatipu.
Johnstone, H., Bluespur.
Julian, J., Boatman's.
Kelly, J., Lyell.
Kerr, J., Thames.
Lawn, E., Black's Point.
*Lawn, H., Boatman's.
Lawn, J., Reefton.
*Littlejohn, W., Karangahake.
*Lowe, E. W., Thames.
Malfroy, J. M. C., Ross.
Martin, W. G., Thames.
McCallum, J., Reefton.
McCullough, R., Thames.
McGruer, G. N., Karangahake.
*McIlhaney, J., Thames.
McIntosh, D., Bluespur.
McKay, J., Ross.
McKenney, J., Reefton.
McKenzie, W., Thames.
*McLeod, G., Coromandel.
McLiver, F., Thames.
*McLiver, H., Thames.
McMaster, J., Reefton.
Moore, H. W., Thames.
*Moore, J. H., Thames.
Morgan, R., Otago.
Morrisby, A. A., Glenorchy.
*Nasmyth, T., Reefton.
Newman, W., Naseby.
Northey, J., Thames.
*O'Sullivan, D. E., Thames.
Polton, A., Karangahake.
Porter, J., Waipori.
Purvis, G., Ross.
Quinn, E., Te Aroha.
Radford, T., Thames.
Ralph, J. G., Thames.
Ranger, J., Reefton.
Rasmussen, C. L., Mokihinui.
Rasmussen, C. P., Mokihinui.
Reid, P., Coromandel.
Resta, L., Macetown.
Roberts, E., Ross.
Rooney, F., Reefton.
Scott, T., Waiorongomai.
Searight, A., Reefton.
*Senior, J., Thames.
Smith, J. E., Thames.
Stone, F., Karangahake.
Steedman, J. B., Thames.
Sturm, A., Waipori.
Taylor N., Thames.
Todd, C., Heriot.
Treloer, J. S., Reefton.
Tripp, R. S., Arrowtown.
Vivian, J. G., Thames.
Vivian, S., Reefton.
*Waite, C. D., Thames.
*Waite, E., Thames.
Walker, J. W., Thames.
Watson, T., Reefton.
Wearne, J. E., Endeavour Inlet.
Wearne, T., Endeavour Inlet.
*Wilcox, J., Thames.
Williams, J., Skipper's.
Wright, G., Boatman's.
Wylie, W., Ross.
Young, G., Skipper's.

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1886," and Amendment Acts.

Adams, B., Thames.
Baker, W., Thames.
Black, G., Reefton.
*Caples, P. Q., Reefton.
*Carter, J., Thames.
*Casley, G., Reefton.
Cochrane, D. L., Reefton.
Colebrook, J. D., Coromandel.
Coombe, J., Reefton.
Crawford, J. J., Thames.
Cummings, W., Reefton.
Donaldson, W., Otago.
Fleming, M., Thames.
Gardner, W. P., Reefton.
Harris, W., Thames.
Horn, G. W., Thames.
Horne, W., Coromandel.
Hornick, M., Thames.
Hosking, G. F., Auckland.
Kruizenza, W., Reefton.
Lawn, T., Reefton.
Logan, H. F., Wellington.
Mangan, T., Thames.
Mouat, W. G., Dunedin.
*Truscott, G., Thames.
Watkins, W. E., Reefton.
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."

Argall, W. H., Coromandel.
Beckwith, L. H., Wellington.
Datson, J., Manaia.
Dodd, William Milton.
Griffiths, A. P., Auckland.
Griffiths, H. P., Auckland.
Hailey, R. C., Dunedin.
McKenna, Thomas, Dunedin.
Molineaux, H. S., Gore.
Rich, F. A., Auckland.
Williams, W. H., Auckland.

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1891."

Agnew, J. A., Thames.
Annear, William, Reefton.
Arcott, R., Waihi.
Bennett, E. P., Thames.
Boydell, H. C., Coromandel.
Bradley, R. J. H., Te Puke.
Bray, E., Reefton.
*Bruce, Malcolm, Thames.
Carroll, J., Lyell.
Cartwright, E., Thames.
Crabb, J., Reefton.
*Dobson, J. A., Auckland.
Evans, H. A., Wellington.
Fahey, P., Reefton.
Flannigan, Francis, Reefton.
Gilmour, J. L., Thames.
Hodge, J. H., Thames.
*Hughes, D., Thames.
James, T., Thames.
Keam, P. E., Thames.
Lane, J., Reefton.
Lawn, C. H., Capleston.
Linck, F. W., Thames.
Marshall, F., Reefton.
Morrison, R., Thames.
McDermott, J., Thames.
McDermott, G., Thames.
McDermott, W., Thames.
McGregor, W. T., Thames.
McKenzie, H. J., Coromandel.
McPeake, J., Thames.
O'Keeffe, M. D., Thames.
Paul, Matthew, Thames.
Paltridge, Henry, Thames.
Prince, F. H., Reefton.
Robertson, D. B., Stafford.
Ross, Richard, Thames.
Russell, Murray, Dunedin.
Shepherd, H. F., Thames.
Stanford, W. J., Macetown.
Steedman, J. G., Thames.
Sutherland, Benjamin, Reefton.
Tierney, R., Thames.
Vialoux, F., Coromandel.
Warne, George, Thames.
Waters, D. B., Skipper's.
Watt, J., Thames.
White, G. H., Thames.
Whitley, A., Thames.
Williams, C., Capleston.

* Deceased since issue of certificate.

FIRST-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS—*continued.*

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1898," and "The Mining Act, 1905."

Allen, Henry, Waihi.
Baker, S. G., Thames.
Barker, B., Thames.
Bennie, Boyd, Waihi.
Bishop, Thomas Otto, Skippers, Otago.
Blenkhorn, C., Coromandel.
Bolitho, Joseph, Reefton.
Bower, J. W., Coromandel.
Buddle, Frank, Coromandel.
Bull, C. W., Waihi.
Caisley, John, Karangahake.
Carroll, A. M., Reefton.
Carroll, John, Kuaotunu.
Carter, R. P., Waihi.
Clouston, R. E., Kaitangata.
Cooper, J. H., Thames.
Cooper, Thornhill, Waihi.
Cordes, F. M., Karangahake.
Cornes, J. G., Waihi.
Daley, John William, Waihi.
Docherty, W. H., Coromandel.
Ellery, John, Reefton.
Evered, N. J., Waihi.
Fry, S., Waimangaroa.
George, M. T., Waihi.
Goldsworthy, C., Karangahake.
Goldsworthy, W., Coromandel.
Gordon, J. A., Thames.
Grayden, P., Thames.
Greening, W., Karangahake.
Hitchcock, W. E., Barewood.
Hooker, John, Coromandel.
Irwin, Samuel, Waihi.
Jackson, G. T., Waihi.
Johnson, J. H., Coromandel.
Langford, G. S., Waihi.
Lawn, Nicholas, Reefton.
Lewis, Ralph Reginald, Waihi.
Mackie, Portland Geo. Alex., Waihi.
McConachie, W., jun., Waihi.
McDonald, R. M., Table Hill.
MacDuff, R. B., Thames.
McGruer, A., Karangahake.
MacLaren, J. A. J., Coromandel.
McMahon, J. H., Reefton.
McMahon, T., Reefton.
Mitchell, William J., Barewood.
Morgan, William, Waihi.
Morrison, William, Waihi.
Moye, Michael, Reefton.
Oats, John, Black's Point, Reefton.
O'Sullivan, J. W., Thames.
Rabe, John, Thames.
Rimmer, J. C., Helensville.
Rodden, John, Reefton.
Saunders, W. H., Reefton.
Sheehan, D., Karangahake.
Stewart, F., Waihi.
Stewart, R. A., Reefton.
Thomson, Thomas, Waihi.
Thorne, G. M., Waihi.
Tucker, E. S., Coromandel.
Turnbull, E. V., Coromandel.
Turner, C. E., Murchison.
Watson, J. L., Thames.
Webber, J. H. A., Reefton.
Weir, Thomas, Waihi.
Whyte, N. McG. H., Waihi.
Williams, C., Thames.
Wilson, Allan, Thames.
Wood, P. H., Reefton.
Wotherspoon, James, Waihi.

First-class Mine-managers Certificates, issued under Section 313 of "The Mining Act, 1891."

Edwards, George, Westport.
Hornibrooke, H. P., Coromandel.
Martin, James, Reefton.
Rickard, John, Thames.
Snow, Thomas, Huntly.
Thomas, James, Thames.
Trelease, J. H., Thames.
Williams, John, Kuaotunu.
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.
Argall, A. E., Coromandel.
Battens, H., Coromandel.
*Begley, Thomas, Reefton.
Bennett, Charles Henry, Kuaotunu.
Bunney, Joseph, Waihi.
Campbell, Alexander, Cullensville.
Carlyon, Samuel, Coromandel.
Cornes, C. A., jun., Karangahake.
Daldy, Edward Arthur, Coromandel.
Draffin, Samuel, Waitekauri.
Farmer, C. S., Waitekauri.
Goldsworthy, Thomas, Tokatea.
Goldsworthy, William, Karangahake.
Govan, Joseph, Thames.
Harvey, A. G., Coromandel.
*Howard, Samuel, Karangahake.
James, Robert, Thames.
Jamieson, John, Reefton.
Johns, Thomas, Waihi.
Kennerley, W. H., Thames.
Langford, James, Coromandel.
McCombie, John, Karangahake.
MacDonald, H., Coromandel.
McEnteer, James, Tararu.
McFarlane, Charles M., Tokatea.
McLean, Benjamin J., Waitekauri.
McLean, Charles, Thames.
McLean, James, Tararu, Thames.
Meehan, James, Westport.
Moorecraft, Walter, Coromandel.
Morgan, William, Owharoa.
Moyle, Thomas, Thames.
Patton, William, Macetown.
Pearce, Francis, Reefton.
Potter, William H., Thames.
*Rabe, Henry, Karaka.
Rillstone, Charles, Waipori.
Somervell, John, Thames.
Stackpole, Robert, jun., Karangahake.
Thomas, Archelaus, Tapu, Thames.
Turnbull, Thomas A., Whangamata.
*Willets, Henry, Thames.
*Wilson, James R. S., Kuaotunu.

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.
Cochrane, N. D., Westport.
Gordon, H. A., Wellington.
*Gow, J., Dunedin.
Green, E. R., Dunedin.
Hayes, J., Dunedin.
McLaren, J. M., Thames.
Tennent, R., Westport.
*Wilson, G., Thames.

SECOND-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS.

Issued under "The Mining Act, 1891."

Adams, W. J., Thames.
Agnew, J. A., Coromandel.
Allen, Richard, Reefton.
Argall, A. E., Coromandel.
Beard, W. T., Reefton.
Begley, Thomas, Reefton.
Bennett, C. H., Coromandel.
Blair, Thomas, Kuaotunu.
Bolitho, James, Reefton.
Bone, William, Reefton.
Borlase, J. H., Capleston.
*Bowler, John, Thames.
Bray, Edwin, Reefton.
Bremner, John, Coromandel.
Brokenshire, James, Thames.
Brown, John, Macrae's.
Brownlee, Thomas James, Thames.
Bunny, Joseph, Thames.
Byrne, John, Karangahake.
Caird, Alexander McNeil, Reefton.
*Campbell, J., Kuaotunu.
*Climo, Noah, Coromandel.
Comer, W. W., Thames.
Comer, George, Thames.
Corbett, T., Paeroa.
*Cowan, Hugh, Kuaotunu.
Crabb, Thomas, Reefton.
Daniel, P. F., Greymouth.
Dobson, John Allen, Kuaotunu.
Edwards, George, Westport.
Ellery, John, Reefton.
Flannigan, Francis, Reefton.
Foster, Thomas, Wellington.
*Gale, C. W., Coromandel.
Gemmings, Charles, Thames.
Gill, George, Thames.
Glasgow, T. M., Thames.
Goldsworthy, Henry, Thames.
Goldsworthy, William, Mauku, Auckland.
Govan, Joseph, Thames.
Gribble, James, Norsewood.
*Griffin, Patrick, Thames.
Grimmond, Joseph, Ross.
Guthrie, John, Wellington.
*Guy, Robert, Kuaotunu.
Hardman, James Edward, Thames.
*Harris, R., Thames.
Harvey, William, Reefton.
Hetherington, William, Thames.
*Hicks, W., Thames.
Hill, Alex. Grey, Waikakaho.
Hollis, Fred. J., Waihi.
Hore, John, Wellington.
Hornibrook, H. P., Kuaotunu.
Jamieson, John, Reefton.
Jobe, James, Thames.
Johns, Thomas, Thames.
Johnstone, William, Collingwood.
Kendall, Henry, Thames.
Kerr, George, Kamo.
Kirker, Thomas, Thames.
Laughlin, David, Thames.
Law, John, Thames.
*Lough, H., Thames.
Loughlin, S., Thames.
Mackay, William, Nenthorn.
Martin, David, Black's Point.
Martin, James, Reefton.
Mayn, John, Coromandel.
McCombie, John, Karangahake.
*McCormick, Charles, Coromandel.
McEwen, James, Reefton.
McLean, James, Thames.
McLean, Alex., Coromandel.
McLean, Charles, Thames.
McNeill, Daniel, Thames.
McNeill, George, Upper Kuaotunu.
McLoghry, Archibald, Karangahake.
McQuillan, John, Reefton.
Meagher, John, Karangahake.
*Mills, George, Thames.
Milne, John, Thames.
Morgan, William, Upper Thames.
Moorecroft, Thomas, Thames.
Moyle, Thomas, Thames.
Naysmith, James, Reefton.
Newdick, Alfred, Thames.
Notman, Alexander, Reefton.
O'Keefe, M. W. D., Thames.
Page, John, Lyell.
Parkiss, Jos. W., Reefton.
Peebles, Alexander, Kuaotunu.

*Deceased since issue of certificate.

SECOND-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS—*continued.*

Issued under "The Mining Act, 1891"—continued.

Pettigrew, Robert, Sydney.
*Phillips, W. H., Thames.
*Pollock, John, Thames.
Potts, W. H., Thames.
Primrose, J., Kuaotunu.
*Rabe, Henry, Thames.
Radford, Thomas, Thames.
Reid, Thomas Groat, Thames.
Rickard, John, Thames.
Richards, A. H., Kuaotunu.
Rogers, Charles Henry, Reefton.
Rogers, William Henry, Kumara.
Ross, J., Thames.
*Rowe, James, Thames.
Shaw, James, Karangahake.
Sligo, Alex., Nenthorn.
Thomas, James, Thames.
Thomas, A., Thames.
Thomson, John, Dunedin.
Tregellas, James, Reefton.
Tregoweth, William, Thames.
Wells, Charles Lewis, Thames.
Willets, Henry, Thames.
Williams, James, Thames.
Williams, John, Thames.
*Wilson, James R. S., Kuaotunu.
Wilson, J. G., Thames.
Whisker, Charles, Thames.
White, John S., Karangahake.
Woodcock, James, Thames.
Worth, Robert, Waihi.

Second-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1891."

Benney, J., jun., Paeroa.
Christie, William, Waitekauri.
Draffin, S., Waitekauri.
Dunkin, T., Coromandel.
Evans, H. A., Skipper's.
*Gatland, V. Y., Coromandel.
Mathewson, A., Hyde.
McNeil, A. H., Coromandel.
White, F. H., Kuaotunu.
White, G. H., Thames.

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.

Second-class Mine-managers' Certificates, issued under Section 313 of "The Mining Act, 1891."

Connon, William, Thames.
Coran, Henry, Thames.
Edwards, E., Coromandel.
Kelso, Archibald, Coromandel.
McCormick, W. J., Waitekauri.

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.
Barney, Montague T., Waitekauri.
Brownlee, Henry, Thames.
Collins, Charles, Waitekauri.
Curtis, Charles, Taylorville.
Davis, James, Coromandel.
Gardner, James, Waimangaroa.
Howe, Albion S., Waitekauri.
Johnson, Frank H., Collingwood.
Kirwan, William, Reefton.
McDonald, John, Tairua.
McInnes, John, Puriri.
Martin, William, Tararu, Thames.
Murphy, Joseph, Coromandel.
O'Brien, John, Westport.
Prescott, Arthur J., Coromandel.
Radford, Samuel, Waihi.
Ruffin, Richard, Manaia, Coromandel.

BATTERY-SUPERINTENDENTS' CERTIFICATES.

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

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

Battery-superintendents' Certificates, issued after Examination, under "The Mining Act 1891 Amendment Act, 1894."

Adams, A. A., Thames.
Allen, F. B., Thames.
Allom, H. O., Thames.
Ansley, Comyn, Paeroa.
Ansley, Walter, Thames.
Banks, J. H., Waihi.
Bowers, W., Thames.
Brown, A. E., Thames.
*Carter, Samuel, Thames.
Clarke, J. L., Thames.
Clarke, R., Waitekauri.
Clarke, W. J., Waihi.
Day, A. T., Thames.
Dixon, Clement, Waihi.
Doveton, G. D., Thames.
Fleming, G. C. S., Thames.
Fuller, J. P., Kuaotunu.
Gray, J. W., Waihi.
Hayward, F. W., Komata.
Horn, G. W., Kuaotunu.
Jackson, J. H., Paeroa.
Jones, Achison, Waihi.
Kidd, F. D., Thames.
Laurie, D. B., Karangaha
Lee, J. W., Reefton.
Macdonald, W., Waihi.
McKenzie, H. J., Thames.
McMicken, S. D., Thames.
Morgan, P. G., Thames.
Morrin, W. S., Thames.
Noakes, H. L., Waihi.
Raithby, R. W., Reefton.
Robinson, J. R., Waitekauri.
Stafford, B. H., Waihi.
Taylor, C. H., Tararu.
Thorpe, A. H., Thames.
Vercoe, R. B., Thames.
Wingate, H. M., Maratoto.
Winslow, G., Thames.
Williams, A. G. R., Thames.

Battery-superintendents' Certificates, issued after Examination, under the Mining Acts, 1898 and 1905.

Adams, J. H., Coromandel.
Adams, Richard W., Tararu, Thames.
Adams, J. H., Thames.
Airey, Hubert, Karangahake.
Aitken, Alexander Hugh, Waihi.
Allen, D. V., Thames.
Allen, H. E., Wellington.
Anderson, David, Waihi.
Auld, J. B., Crushington.
Baker, W. H., Thames.
Banks, C. A., Waihi.
Banks, E. J., Thames.
Barrance, K. McK., Karangahake.
Barrett, J. J., Karangahake.
Barron, Wm. E., Waikino.
Baskett, E. G., Karangahake.
Bell, L. M., Waihi.
Bidlake, A. E., Waiomo.
Bird, A. W., Thames.
Bishop, T. O., Reefton.
Blackadder, Wm., Crushington.
Bradley, R. J. H., Karangahake.
Browne, E., Waitekauri.
Brown, F. M., Karangahake.
Brown, J. E., Komata.
Burns, William, Waiomo.
Bush, E. F., Parawai.
Bush, George Arthur, Karangahake.
Bush, H. R., Thames.
Campbell, Colin, Thames.
Carpenter, W. E., Karangahake.
Carter, S., Waihi.
Carroll, John, Kuaotunu.
Chappell, G. A., Karangahake.
Clark, John L., Waihi.
Clarke, Thomas, Waihi.
Coote, J. M., Thames.
Corbett, G. L., Waitekauri.
Couper, J., Thames.
Cowles, R. K., Crushington.
Crompton, H., Maratoto.
Croucher, Herbert, Waihi.
Dawson, B., Ellerslie.
Donnelly, Thomas, Waihi.
Donovan, Willie, Waikino.
Draffin, Eugene, Kuaotunu.
Eaton-Turner, Geoffrey William, Waihi.
Ellis, L. L., Waitekauri.
Empson, J. B., Karangahake.
Evans, G. C., Waihi.
Evans, J., Waihi.
Evans, W. B., Reefton.
Ewen, H. F., Auckland.
Fletcher, H. T., Katikati.
Fraser, J. M., Reefton.
Fuller, John P., Kuaotunu.
Fyfe, A., Dunedin.
Gardner, E. A., Reefton.
Gibson, William, Waihi.
Gilpin, J., Waihi.
Gow, E. A., Crushington.
Grayden, J., Waitekauri.
Grayden, Peter, Thames.
Grumitt, P. H., Thames.
Gwilliam, Ben., Karangahake.
Halliwell, L. V., Karangahake.
Hargraves, E. P., Waihi.
Hay, Adam, Karangahake.
Hazard, T. R. C., Waitekauri.
Hitchcock, W. E., Barewood.
Hogg, B., Karangahake.
Hogg, T. R., Karangahake.
Horn, G. W., Kuaotunu.
Hutchison, R. M., Karangahake.

* Deceased since issue of certificate.

BATTERY-SUPERINTENDENTS CERTIFICATES—*continued.*

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

Johnson, Edward, Waihi.
Jones, R. D., Karangahake.
Kidd, R. B., Waitekauri.
Kingsford, A., Karangahake.
Langford, G. S., Waikino.
Launder, G. H., Waitekauri.
Lawless, L. J., Paeroa.
Littlejohn, W. D., Karangahake.
Lovelock, J. E., Crushington.
Mackay, John, Crushington.
Mann, C., Westport.
Matheson, Alex. M., Barewood.
Maxwell, W. L., Waihi.
Maltman, A., Reefton.
McEwin, J. A., Reefton.
McKinlay, John, Waihi.
McNeil, A. R., Karangahake.
Melrose, P., Waihi.
Montgomery, A. E., Opitonui.
Morgan, Robert James, Waihi.
Motherwell, Wm., Waihi.
Moyle, W. T., Upper Tairua.
Orbell, G. S., Waikouaiti.
Paltridge, F., Thames.
Pond, H. C., Auckland.
Porteous, J., Crushington.
Quick, J. N., Thames.
Reid, J. E., Great Barrier.
Reynolds, E. A., Auckland.
Roberts, H. C., Waihi.
Rodden, Wm., Lyell.
Rosewarne, R. H., Thames.
Royse, W. G., Reefton.
Sanford, A. G., Waihi.
Shaw, D. S., Waikino.
Shaw, L. J., Waikino.
Stephens, H., Dunedin.
Sutherland, J. A., Reefton.
Thomson, G. W., Bendigo.
Thurlow, J. R., Coromandel.
Tomlinson, A., Karangahake.
Tomlinson, David Mitchell, Barewood.
Tomlinson, W. F., Dunedin.
Turnbull, E. V., Waihi.
Ulrich, G. A. C., Komata.
Ulrich, Herstall, Whangapoua.
Walker, Alfred James Dickson, Waihi.
Waters, D. B., Waihi.
Watson, A. B., Waitekauri.
Watson, A. P., Crushington.
Watson, J. R., Reefton.
Watson, J. P., Reefton.
Watson, W. A., Crushington.
White, A. S. H., Karangahake.
Williams, A. C., Waihi.
Williams, James, Reefton.
Williams, William Eustace, Waihi.
Wilson, A. P., Crushington.

Dredgemasters' Certificates, without Examination, issued under "The Mining Act, 1898," and Amendment Acts, 1901 and 1902.

Allen, Chas., Alexandra.
Anderson, L. C., Alexandra.
Andrews, Ralph, Canvastown.
Baker, J. R., Alexandra.
Ballantyne, D., Miller's Flat.
Barnes, T. J., Beaumont.
Barry, Thos., Clyde.
Bradley, Neil, Alexandra.
Bennett, Geo., Gore.
Bennett, James, Kumara.
Blue, G. P., Alexandra.
Brand, Peter, Waikaka.
Brennan, Philip, Palmerston S.
Bremner, A. P., Lower Shotover.
Brice, Wm. H., Cromwell.
Bringans, D., Alexandra.
Brown, T. G., Ahaura.
Bunting, James, Murchison.
Busbridge, P., Gore.
Butler, Ewen, Roxburgh.
Butler, M. J., Kanieri.
Cameron, Saml., Alexandra.
Clarke, Ed., Port Chalmers.
Compton, Albert, Dobson.
Cormack, W., Greymouth.
Cornish, J. T., Miller's Flat.
Coutts, Henry, Miller's Flat.
Cowan, Alexander, Stillwater.
Cowan, James, Nelson Creek.
*Crookston, W. L., Three-channel Flat.
Crowley, J. B., Edendale.
*Cumming, J. C., Beaumont.
Cunningham, Geo., Kanieri.
Curtis, Chas., Stillwater.
Cutten, W. H., Dunedin.
Deniston, R. A., Cromwell.
Dewar, John, Alexandra.
Donaldson, J. G. A., Greenstone.
Edmonds, A. R., Nelson Creek.
Faithful, Wm., Greymouth.
Gibb, Wm., Croydon Siding.
Gibson, A., Island Block.
Goodger, G. W., Waenga.
Graham, J. M., Gore.
Grogan, Wm. A., Miller's Flat.
Hansen, Wm., Alexandra.
Hay, James, Dunedin.
Hedley, A., Cromwell.
Herbert, J., Beaumont.
Hewitt, James, Clyde.
Hogg, Thos., Cromwell.
Hoskins, Thos., Maori Point.
Hoy, Samuel, Alexandra.
Inwood, W. J., Rocklands Beach.
Johnston, E. A., Alexandra.
Johnstone, Alexander, Cromwell.
Keen, Thos., Clyde.
Kennedy, Angus, Alexandra.
Kitto, Ed. T., Miller's Flat.
Kitto, Francis, Lowburn.
Kitto, Jno. F., Miller's Flat.
Kitto, W. H., Cromwell.
Kloogh, N. P., Lowburn Ferry.
Lawson, Ed., Dunedin.
Ledingham, J., Bannockburn.
Lee, George, Collingwood.
*Lidicoat, R. H., Fern Flat.
Louden, Alexander, Clyde.
Luke, S. J., Alexandra.
Magnus, A., Roxburgh.
Magnus, Olaf, Box 130A, Christchurch.
Mailer, John, Stillwater.
Maitland, A. E., Miller's Flat.
Maxwell, John, Dunedin.
McClure, F. C., Rongahere.
McConnell, J., Cromwell.
McCormack, D., Kanieri.
McDonald, E. A., Waitiri.
McDonald, J., Sofala.
McDonald, Jno., Cromwell.
McGeorge, J., Dunedin.
McGeorge, Alexander, Dunedin.
McGregor, D., Kanieri.
McGregor, G. R., Alexandra.
McIntosh, D. J., Lowburn Ferry.
McLay, Geo., Cromwell.
McLean, D., Waitiri.
McMath, D. C., Ross.
McMath, Thos., Alexandra.
McVicar, Peter, Roxburgh.
Mills, Ed., Murchison.
Mitchell, D. A., Dunedin.
Morel, C. G., Inangahua Junction.
Morris, G. S., Cromwell.
Murray, D., Clyde.
Murray, Madget, Cromwell.
Neilson, S., Miller's Flat.
Nicholson, W. E., Alexandra.
O'Leary, D., Waiau.
Olsen, Chas., Roxburgh.
Parsons, J. D., jun., Clyde.
Percy, John, Clyde.
Perkins, A. C., Dunedin.
Pettigrew, Geo., Nelson Creek.
Poulter, G. W., Alexandra.
Pringle, John, Miller's Flat.
Ray, J. C., Totara Flat.
Reeder, Philip, Bald Hill Flat.
Rennie, Andrew, Roxburgh.
Ross, Alexander, Cromwell.
Ross, Robert, Alexandra.
Richmond, J., Gibbston.
Ritchie, J. S., Waitiri.
Sanders, H. P., Clyde.
Sanders, John, Cromwell.
Sanders, Thos., Alexandra.
Schaumann, H., Alexandra.
Scott, M. G., Alexandra.
Scott, Robert, Capleston.
Shore, T. M., Queenstown.
Shore, Wm., Gore.
Simonsen, Chas., Alexandra.
Skilton, A. G., Old Diggings.
Sligo, N. K., Ahaura.
Smeaton, S. H., Inangahua Junction.
Smith, Alfred, Inangahua Junction.
Steel, Archibald, Kawarau Gorge.
Steel, Thos., Dunedin.
Templeton, Ivie, Rongahere.
*Thompson, J., Alexandra.
Thompson, T., Miller's Flat.
Toohey, J. M., Alexandra.
Tough, John, Miller's Flat.
Troy, G. C., Cromwell.
Turnbull, W. D., Canvastown.
Tyson, John, Rongahere.
Von Haast, J. H., Clyde.
Wallace, John A., Miller's Flat.
Watt, John, Cromwell.
Weaver, Chas., Alexandra.
Williamson, R., Millar's Flat.
Williamson, Walter, Miller's Flat.
Wilson, S. W., Waikaka Valley.
Wood, R. M., Cromwell.
Woodhouse, W. S., Roxburgh.
Young, Andrew, jun., Roxburgh.

Dredgemasters' Certificates, after Examination, issued under the Mining Acts, 1898, 1901, 1902, and 1905.

Anderson, Andrew, Alexandra South.
Anderson, Bertram, Maori Point.
Anderson, G. B., Roxburgh.
Baird, William G., Clyde.
Bardsley, John James, Cromwell.
Bishop, Hugh Arthur, Collingwood.
Blair, G., Abbotsford.
Borthwick, Robert, Alexandra.
Bourke, John, Clyde.
Brent, C. D., Cromwell.
Briggans, Thomas, Alexandra.
Briggans, William, Alexandra.
Broderick, T., Lyell.
Bruce, J. A., Kawarau Gorge.
Burley, J. P., Westport.
Burnside, Walter, Alexandra.
Burton, A. P., Miller's Flat.
Callaghan, E., Three-channel Flat.
Carnegy, A., Three-channel Flat.
Carter, W. W., Sandy Point.
Chapman, Robert, Maori Point.
Clark, D., Callaghan's Creek.
Clarke, R. S. B., Alexandra S.
Coup, George, Albertown.
Cox, R. D., Alexandra.
Craig, D. A., Shag Point.
Croawell, James, Three-channel Flat.
Curno, C. B., Alexandra.
Dalton, J. R., Three-channel Flat.
Donaldson, John, Lawrence.
Downie, Henry, Totara Flat.
Eaton, Edgar W., Alexandra.
Elder, D. D., Roxburgh.
Faithful, Alfred, Bannockburn.
Farmer, Nathan C., Miller's Flat.
Farquharson, Geo., Alexandra.
Fisher, Hurtle, Miller's Flat.
Filippi, S. de, Westport.
Forno, D., Inangahua Junction.
Fraser, W. J., Roxburgh.
French, T. E. K., Three-channel Flat.
Gibson, William H., Cromwell.

* Deceased since issue of certificate.

Dredgemasters Certificates, after Examination, issued under the Mining Acts, 1898, 1901, 1902, and 1905—contd.

Gillooly, T., Roxburgh.
Gillstrom, Carl A., Berlin's.
Graham, Thomas Arthur, Gore.
Gunion, R. A., Alexandra.
Gunn, W. E., Beaumont.
Guy, Donald, Cobden.
Guyton, James, Dunedin.
Hanning, C. J., Clyde.
Hansen, H. C., Three channel Flat.
Harden, J., Stafford.
Harliwick, Matthew, Roxburgh.
Hewetson, Sydney, Nelson Creek.
Hogg, J., Nevis.
Holden, Charles, jun., Cromwell.
Holden, John, Cromwell.
Hepburn, D. O., Alexandra.
Hughes, John L., Miller's Flat.
Johnston, John, Maori Gully.
Johnston, Louis, Beaumont.
Jones, David Rowland, Island Block.
Jones, T. R., Miller's Flat.
Junker, Frank J., Berlin's.
Kane, William, Clyde.
Kane, William, Cromwell.
Kean, F. F., Waikaka.
Kellett, C. H., Dunedin.
Kennedy, A., Ophir.
Kitto, John, Clyde.
Linney, William, Island Block.
Livingstone, D., Alexandra.
Lloyd, Arthur, Inangahua Junction.
Lloyd, Hubert, Lyell.
MacDonald, C. J., Cromwell.
MacGinnis, J. A., Cromwell.
MacGinnis, M. P., Alexandra.
MacLaren, John, Alexandra.
Marklund, C. O., Lowburn Ferry.
Mathews, James Halbert, Miller's Flat.
Matthews, A. A., Three-channel Flat.
Mayne, W. C., Nelson Creek.
McDonald, C. J., Waitere.
McDonald, G., Alexandra.
McCallum, W. S., Alexandra.
McGregor, Dougald S., Alexandra.
McKenzie, John, Roxburgh.
McKinnon, John, Alexandra.
McLean, John, Roxburgh.
Melvin, J. R., Roxburgh.
Merchant, Isaiah, Clyde.
Milne, John A., Roxburgh.
Moffitt, R. W., Miller's Flat.
Mollison, William, Stillwater.
Monerieff, Henry, Miller's Flat.
Monson, C. H., Miller's Flat.
Morel, A. E., Nobles.
Morel, L. H., Inangahua Junction.
Morgan, Harold, Roxburgh.
Morgan, John, Alexandra.
Morris, V., Cromwell.
Mouat, W. G., Greymouth.
Munro, C. T., Waitiri.
Munro, Hugh, Alexandra South.
Munro, R. F., Ross.
Murray, H. B., Cromwell.
Murray, Robert John, Canvastown.
Nelson, Edgar, Brunnerton.
Nelson, George L., Brunnerton.
Newick, Albion Edgar Charles, Bannockburn.
Nicholson, Charles S. G., Mataura.
Noble, William, Alexandra.
Olsen, Hans, Alexandra.
Omond, Thomas, Nevis.
Orkney, H. E., Cromwell.
Orr, H. T., Cromwell.
Orr, William W., Cromwell.
Parker, P. R., Roxburgh.
Paterson, J. B., Miller's Flat.
Patterson, J., Clyde.
Plumb, E. H., Maori Point.
Poppelwell, William, Alexandra.
Rait, Hume, Albertown.
Ray, J. F., Bannockburn.
Ray, Robert Marshall, Bannockburn.
Reiderer, Edward, Cromwell.
Ritchie, William John, Cromwell.
Roberts, G., Three-channel Flat.
Robertson, D. J., Alexandra.
Robertson, W. R., Alexandra.
Rooney, J. B., Roxburgh.
Rumble, Chas., Ngahere.
Rumble, Joseph, Miller's Flat.
Sanders, W. J., Ahaura.
Sawle, J., Cromwell.
Sawyer, J. F., Alexandra.
Sherwood, T. W., Greymouth.
Simpson, Edward Robert, Cromwell.
Steele, W. H., Miller's Flat.
Taylor, Alexr., Alexandra.
Taylor, J. T., Dunedin.
Theyers, C., Alexandra.
Theyers, J. W., Alexandra.
Vickerman, E. M., Cromwell.
Wasserbrenner, M., Alexandra.
Wathen, James, Miller's Flat.
Watson, E. H., Collingwood.
Weaver, P., Alexandra.
Weir, W., Nevis.
Wescombe, Alfred L., Island Block.
Westcott, P. A., Miller's Flat.
Williams, Frederick, Alexandra.
Wilson, George, Marsden.
Wilson, Stephen L., Inangahua Junction.
Wood, W. W., Cromwell.
Woodhouse, F., Bannockburn.
Woodhouse, G. G., Waitiri.
Wylde, G. R., Inangahua Junction.

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