1909.

NEW ZEALAND.

THE GOLDFIELDS OF NEW ZEALAND

(REPORT ON).

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

INDEX.

INDEX — *continued.*

LIST OF ILLUSTRATIONS.

In the Gorge of the River Taramakau, Kumara Goldfield, New Zealand.
[*Photo. by Charles Evenden.*

Face p. 3.]

REPORT.

Mr. FRANK REED, M.I.M.M., Inspecting Engineer, to the UNDER-SECRETARY FOR MINES.

SIR,— Mines Department, Wellington, 16th April, 1909.

I have the honour to present the annual reports of inspection of mines, together with reports of Wardens and other officers, accompanied by statistical information in regard to the goldfields and metalliferous mines of the Dominion, for the year ended the 31st December, 1908.

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, 1908, to the 31st March, 1909.

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.
VI. State Aid to Mining.
VII. Schools of Mines.
Annexures.—Reports of—
  (*a.*) Inspectors of Mines.
  (*b.*) Wardens.
  (*c.*) Directors of Schools of Mines.
  (*d.*) Water-race Managers.
  (*e.*) Mining Statistics.
  (*f.*) Examinations under " The Mining Act, 1908," and 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, 1908 :—

Classification.	1907.	1908.	Increase or Decrease.	Total from the 1st January, 1853, to the 31st December, 1908.
	£	£	£	£
Gold	2,027,490	2,004,925	22,565†	73,533,903
Silver	169,484	175,337	5,853*	1,266,088
Copper-ore	595	275	320†	19,098
Scheelite	15,486	6,055	9,431†	32,944
Manganese-ore	26	...	26†	61,857
Antimony-ore	2,118	73	2,045†	54,789
Other minerals	14,967	10,124	4,843†	210,981
Kauri-gum	579,888	372,789	207,090†	14,395,703
Totals	**2,810,054**	**2,569,587**	**240,467†**	**89,575,363**

* 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	3,264	2,820	2,601	**8,685**
Antimony	4	...	4	**8**
Copper	12	60	6	**78**
Iron	...	17	...	**17**
Platinum	...	...	11	**11**
Scheelite	...	...	47	**47**
Marl	...	...	2	**2**
Tin	...	...	2	**2**
Phosphate	...	...	30	**30**
Totals	**3,280**	**2,897**	**2,703**	**8,880**

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	3	1	1	1	1	1	2	2	2	3	...	...	9	8
West Coast	...	...	1	3	...	...	...	...	1	...	...	1	2	4
Southern	...	...	...	...	...	...	...	...	3	1	1	2	4	3
Totals	**3**	**1**	**2**	**4**	**1**	**1**	**2**	**2**	**6**	**4**	**1**	**3**	**15**	**15**

Being at the rate of 1·69 fatalities per 1,000 persons employed.

IV. GOLD-MINING.

The past year has been an uneventful one with the gold-mining industry. There continues to be a slight falling-off in the bullion-production* from the gold-mines of this Dominion, which decline for 1908 amounted in value to £16,712. This decline in bullion-production appears to be general throughout all the gold-producing States of Australasia, and may reasonably be attributed to the gradual exhaustion of the high-grade ore from the upper levels of the quartz-mines and the rich and easily accessible alluvial deposits. There is also a certain amount of apathy by the public to mining enterprise, which has the effect of discouraging prospecting. The profitable character of gold-mining speculations in this Dominion may be gauged by the fact that during 1908 the sum of £561,833 was distributed in dividends by registered quartz-mining companies, representing in value the high proportion of 38 per cent. of the bullion-production.

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

——	Production of Bullion, 1908.* (All mines.)	Dividends paid, 1908. (By registered companies only.)	Percentage of Production paid in Dividends.	Number of Persons ordinarily employed.
	£	£	Per Cent.	
Quartz-mining	1,477,012	561,833	38·04	4,118
Dredge mining	373,818	75,820†	21·25†	1,013
Alluvial mining ...	329,432	11,073	Unknown	3,554
Totals, 1908 ...	**2,180,262**	**668,726**	Unknown	**8,685**
Totals, 1907 ...	2,196,974	731,951	Unknown	9,138

* In addition to the gold produced from the gold-mines, silver to the value of £175,337 was also obtained from them, hence the word "bullion" is used in preference to "gold."

† The bullion-production is from 123 dredges, but the dividends given are only from 43 of these, the property of registered companies. The profits of privately owned dredges and mines are unobtainable, which renders this statement incomplete.

(1.) QUARTZ-MINING.

There has to be recorded a decline of £67,560 in the value of the production from the auriferous-quartz mines, and £67,033 in the dividends paid by them during the past year. This decline, however, is entirely confined to the Thames, Reefton, and Coromandel districts; the more recently discovered goldfields at Waihi, Karangahake, and Big River having largely increased their gold-production and alue of dividends paid.

With the proposed reconstruction of the treatment plants at the Reefton mines, and the deep-level developments on that and the Thames goldfields, there is reason to believe that the present slight decline in production from the quartz-mines of the Dominion will be arrested.

The following is a statement showing the tons of ore treated, the value of bullion produced, and the amount of dividends paid in each of the inspection districts during the years 1907 and 1908 :—

Inspection District.	Tons of Ore treated.		Value of Bullion.		Dividends paid. (By registered companies only).	
	1908.	1907.	1908.	1907.	1908.	1907.
			£	£	£	£
Northern	546,905	520,061	1,302,665	1,375,035	545,233	589,691
West Coast	95,156	98,027	160,156	160,533	16,600	39,175
Southern	12,246	8,190	14,191	9,004	...	...
Totals	**654,307**	626,278	**1,477,012**	1,544,572	**56,833**	628,866

The following is a statement of the production, working-cost, dividends declared, and number of persons employed at the principal quartz-mines during 1908 :—

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.
					1908.	Total to End of December, 1908.	
Northern District—		£	£ s. d.	£ s. d.	£	£	
Waihi Gold-mining Company (Ltd.)†	393,214*	896,743‡	2 5 7	0 16 7·12	446,316	3,139,560	1,500
Grand Junction Gold-mining Company (Ltd.)	48,477*	73,123	1 10 2	§	...	...	364
Waiotahi Gold-mining Company (Ltd.)	3,497*	14,717	4 4 2	2 5 0	6,000	397,800	44
Talisman Consolidated (Ltd.) ...	46,417	218,975	4 14 4	1 15 9	86,250	251,250	300
Komata Reefs (Ltd.)	28,170*	44,260	1 4 4	§	6,667	33,333	170
New Zealand Crown Mines (Ltd.)	14,921*	25,260	1 13 10	§	...	70,000	131
May Queen (Ltd.)	429*	3,261	7 10 2	§	...	...	38
West Coast District—							
Keep-it-Dark Quartz-mining Company (Ltd.)	13,170	14,059	1 1 4	0 18 8·75	1,000	158,667	60
Progress Mines of New Zealand (Ltd.)	48,500	58,297	1 4 0	1 1 9·42	...	295,625	300
Consolidated Goldfields of New Zealand (Ltd.)	15,347	29,854	1 18 11	0 18 9	...	...	95
New Big River Gold-mining Company (Ltd.)	4,851	31,241	6 8 9½	1 16 10·52	15,600	629,667	40
Blackwater Mines (Ltd.) ...	9,169	17,647	1 18 5¾	0 17 0	...	...	180
Southern District—							
Barewood Gold-mining Company (Ltd.)	4,793	7,230	1 10 10¾	1 1 4¾	...	2,800	21
Other quartz-mines throughout New Zealand	23,352	42,345	...	§	...	...	875
Totals, 1908	**654,307**	**1,477,012**	...	...	**561,833**	...	**4,118**

* Short tons of 2,000 lb. dry weight.

† The total value of the output of this company at the end of the year was £7,186,856. The dividends here given are free of income-tax.

‡ In the annual report of the directors of this company for 1908 the value of the bullion production is stated to be £930,511, being an average value of £2 7s. 5d. per short ton. The ore reserves at the end of 1908 are estimated to be 1,329,872 short tons, as compared with 1,299,979 tons at the end of 1907.

§ Unknown.

Northern Inspection District.

Waihi Goldfield.—Waihi Gold-mining Company (Limited): An annual gold-production of £896,743, of which about one-half has been returned in dividends, constitutes the 1908 record from this mine, the prosperity of which is shown in the foregoing statement.

The most important developments during 1908 include the intersection by the south crosscut from No. 5 shaft, No. 9 level (1,000 ft.), of the Royal vein, in width 16 ft.: this vein was driven upon for 546 ft. At the same level the Empire vein was also intersected and driven into for 15 ft. without disclosing the north wall; further developments on this level will be awaited with interest.

On the No. 8 (850 ft.) level the following is a list of the veins opened, together with the length driven upon them:—

Name of Vein.	Feet driven.	Name of Vein.	Feet driven.
Royal	2,111	Edward	736
Rex	428	Martha	1,464
Empire	1,510	Regina	596
Alexandra	459		
Unnamed	104	Total	7,408

The aggregate thickness of these veins is about 264 ft., of which the bulk is payable. The complex vein-system here exposed is characterized by immense ore-bodies of varying width, branching generally from the Martha or parent vein, and carrying strong shoots of sulphide ore which appear to have been formed subsequently in fractures or fissures in the original quartz bodies by solutions which have deposited sulphides of higher grade than the original quartz filling.

At the reduction-works the total average number of stamps running during the year, exclusive of Sundays and holidays, was 315·187 out of an installation of 330. The total average duty per stamp per day was 4·167 tons of 2,000 lb., being an increase of 0·373 tons per stamp per day when compared with the previous year. Ten tube mills were employed, together with thirty-two tall agitator-tanks; and foundations for an additional ten tanks are being prepared. A new steel head gear has been erected at No. 4 shaft. At No. 6 shaft there has been installed what is probably the finest hoisting plant in Australasia, consisting of a pair of high-pressure direct-acting horizontal non-condensing engines, having cylinders 30 in. in diameter, with 6 ft. stroke, working at a steam-pressure of 70 lb. per square inch, the indicated horse-power developed being 1,100; partial expansion of the steam is obtained by automatic trip gear operated by governors; Cornish equilibrium double-beat valves are employed; a Langs lay plough-steel rope 1·25 in. in diameter is wound on coupled drums of 12·5 ft. diameter. The maximum load hitherto hoisted per hour in automatic tipping-skips by this engine is 129 tons (of 2,240 lb.) from a depth of 850 ft. The plant is similar to those most recently installed at the great British collieries, and may be regarded as quite the latest in winding machinery. As an auxiliary to the powerful single-acting Cornish pump employed at this mine, it is proposed to install an electrically driven three-throw ram pump of 13 in. diameter and 1,500-gallons-per-minute capacity; the electric power will be generated by two units of (Crossley) producer-gas engines, each of 400-horse power, this type of engine having given satisfaction at the company's treatment plant, where it has been installed nearly two years.

Waihi Grand Junction Gold-mining Company (Limited): During 1908 there has been an increase in the value of the gold-production by this company, but a decline of 3s. 8d. in the average value per ton of quartz treated. The future of this company is dependent on the result of the development with depth of the Waihi vein-system. That the Martha vein in the Waihi Mine increases in width in an easterly direction with depth as it approaches the Grand Junction boundary is illustrated by the published plans of the Waihi Company. It is shown that at the level of the collar of the Waihi Company's No. 1 shaft (being zero from which that company's levels are measured) the Martha vein in great width is 17 chains distant from the Junction boundary; but at 854 ft. lower level the distance between the strong Martha vein and the boundary had been reduced to about 5 chains. The datum of the levels of the two properties do not correspond, that of the Junction being 60 ft. lower. During the early part of 1909 the Empire vein was intersected by a crosscut from the No. 5 (944 ft.) level, which proved the vein to exceed 60 ft. in width; this discovery has considerably improved the prospects of this company.

During 1908 the principal developments at this mine have been carried out at No. 4 (794 ft.), where 788 ft. has been driven upon the Martha vein, exposing an average width of about 8 ft., and upon the No. 4 vein, where 624 ft. of driving has proved the vein to average about 6·5 ft.

The main No. 1 winding-shaft, recently equipped with a handsome steel head gear, is down 976 ft. The extensive and modern electrical installation and treatment plant at this mine have already in former reports been referred to.

Karangahake Goldfield.—Talisman Consolidated (Limited): A considerable increase both in tonnage treated, bullion recovered, and dividends declared has to be recorded, notwithstanding that since August, 1908, by the stoppage of the pumps on the adjoining New Zealand Crown Mines, work below the No. 12* level at the Talisman Mine was suspended owing to the influx of water until the end of May, 1909. To overcome the water difficulty it has been decided to increase the pumping-power by placing electrically driven Cornish pumps in the Woodstock shaft, which it is then proposed to deepen, and from thence develop the northern section of the mine. It is also proposed to install during the ensuing year the Waihi system of treatment—viz., tube mills, air agitating-tanks, and vacuum filters. The efficiency of this treatment is indorsed by its adoption upon many of the most important goldfields in the world. Probably in no other mining country are the metallurgical plants for the recovery of electrum from cyanide-solutions more advanced than in this Dominion, and this is undoubtedly due to the research work constantly being advanced at Waihi by Messrs. H. P. Barry and F. C. Brown and their respective staffs.

Operations at the New Zealand Crown Mines, adjoining the Talisman, have also been retarded by the influx of water, to overcome which it is proposed to install electrically driven duplex pumps

* No. 12 level at the Talisman Mine is 25 ft. above sea-level, and about 1,675 ft. below the apex of the vein.

capable of dealing with 1,100 gallons per minute, from a depth of 1,000 ft. Pending the erection of this plant, mining operations have been suspended.

Thames Goldfield.—The known rich bonanza ore having been entirely exhausted at the Waiotahi Mine, underground operations have been chiefly confined to stoping ore of lower grade. A considerable amount of prospecting has been carried out during the year on the Mariner vein at No. 6 level (500 ft.) and the No. 4 level in the direction of the main reef. No practical scheme has yet been agreed upon by the companies that would be benefited by deep-level developments from the Queen of Beauty pumping-shaft, now sunk to the 1,020 ft. level by the May Queen Company, assisted by a Government subsidy. This company has obtained favourable prospects at the No. 5 level (627 ft.) and No. 6 level (720 ft.) of the May Queen Mine, and at the No. 9 level (800 ft.) a crosscut driven 400 ft. from the pumping-shaft intersected the May Queen footwall leader, showing good prospects. This constitutes the deepest prospecting on the Thames Goldfield, and it is regarded locally as favourable evidence of the continuity of the payable veins at depth.

On the Coromandel Goldfield, mining is moribund.

West Coast Inspection District.

Inangahua Goldfield.—There has been a considerable falling-off in the annual production of the Reefton district during the past year, but from the Big River and Blackwater divisions of the goldfield an increase has to be recorded. The future of the West Coast quartz-mining fields is dependent upon the deeper levels of active or abandoned properties, and on the discovery of fresh veins on areas hitherto unprospected. The prospects of sinking deeper the present working mines are considered favourable, and this is being undertaken, the ore-values not having very appreciably declined with the attainment of depth, nor is there any probability of the ore becoming refractory. The result of operations at the Welcome and Golden Fleece Mines, however, indicates that all over the field a level will be reached, probably not many hundred feet below the present deepest workings, where the ore-bodies will be found too small to be profitable; but this limit can only be determined by trial in each particular case. The areas hitherto unprospected embrace an extensive belt of phyllite and greywacke formation extending both north and south of the Inangahua Goldfield, an area but little prospected owing to difficulty of access and the rugged and heavily timbered nature of the country. Accompanying this report are plans of the Reefton section of the Inangahua Goldfield showing the vein-system and principal workings, which have been specially prepared for the Mines Department by Mr. Jules Schadick, C.E., licensed surveyor. These plans contain information never previously published, and they will no doubt be of considerable assistance to those interested in the Reefton mines.

The Keep-it-Dark Quartz-mining Company (Limited): This well-known old mine, which has been held and worked continuously since 1873 by the present company, is situated about half a mile to the south of the Wealth of Nations Mine, and the vein operated upon at both mines is similar in size and general features. The deepest level opened—viz., that at 1,100 ft.—is 245 ft. below sea-level. The ore-bodies vary in width between 2 ft. and 12 ft. Water-power is employed to work the mill and reduction plant. During the past year there has been a slight decline in the gold-production and dividends paid from this property. Development has been carried out on the No. 5 and No. 7 levels.

The Progress Mines of New Zealand (Limited) are situated about four miles from Reefton. The vein, which is worked by shafts respectively 836 ft. and 1,436 ft. deep, strikes approximately east-and-west, and comprises three large quartz-bodies varying in width between 4 ft. and 20 ft. During the year 1908, developments have been carried out upon levels Nos. 10 and 11; and a diamond drill has been used for prospecting. On the upper levels, between No. 6 and No. 12, stoping has been carried out, but ore of lower grade than formerly has been obtained. A furnace is being erected for the treatment of concentrates.

Consolidated Goldfields of New Zealand (Limited):—Golden Fleece Mine: The vein on this property lies parallel to and about a mile to the east of the Wealth of Nations and Keep-it-Dark line of vein, which although practically vertical near the surface is dipping to the westward in the lower levels. During the year, owing to developments at the No. 15 level not fulfilling expectations, this mine was let on tribute. Wealth of Nations Mine: On this property there are two parallel and nearly vertical veins, situated about 150 ft. apart. The development of these two veins by means of shaft-sinking has disclosed a good deal of faulting. Only the larger eastern vein, the width of whose blocks averages about 6 ft. to 8 ft., is at present being worked, while crosscuts are being driven with a view to proving the western vein at greater depth. The main shaft is 1,700 ft. deep, being the deepest shaft in the Dominion. It is proposed to continue this shaft to the 11th level. During the past year developments have been chiefly concentrated at the 7th, 8th, and 9th levels, the quartz milled being obtained from stopes over the Nos. 7 and 8 levels. The reduction plant has been remodelled, and the Waihi system of treatment by tube mills, tall agitator-tanks, and the vacuum-filter process is being installed; water-power will be employed to operate this plant.

The New Big River Gold-mining Company (Limited): This mine lies about twenty miles to the south of Reefton, and is one of the youngest mines in the district. During the year operations have been attended with satisfactory results. The vein recently intersected on the No. 9 (1,372 ft.) level varies in thickness up to 12 ft., and it is payable throughout the 160 ft. driven upon it. The main shaft is 1,200 ft. in depth, and it is proposed to deepen it 200 ft. to another level.

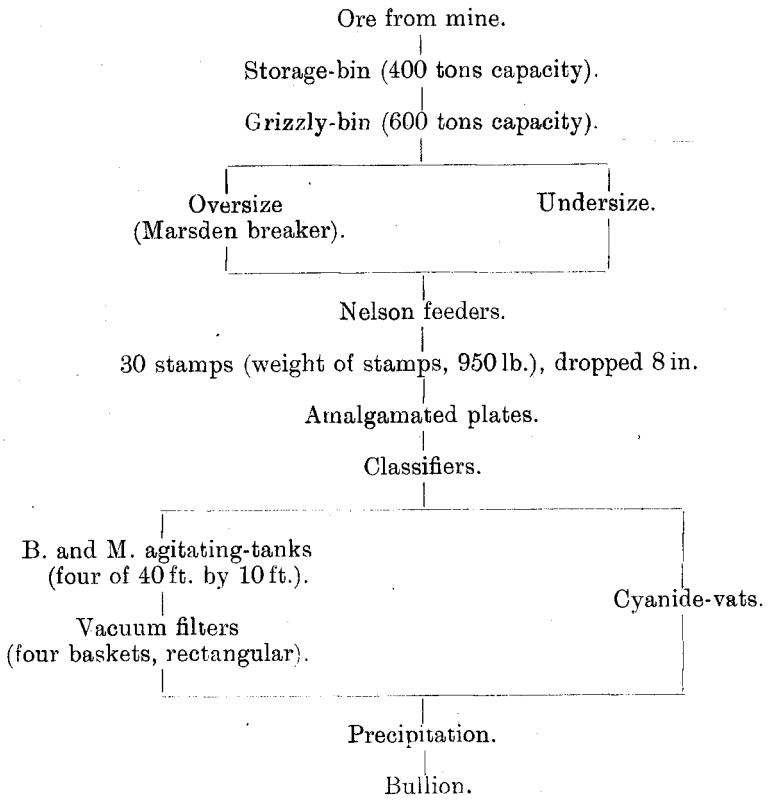
On the Lyell Goldfield there has been a revival of operations at the once well-known New Alpine Mine. The main shaft has been sunk 112 ft., and from it the new 14th level has been driven 226 ft. During the year 1,150 tons of ore were treated for a return of £866.

The Blackwater Mine, one of the Consolidated Goldfields group, is situated in the Upper Blackwater district on the hills to the eastward of the Greymouth–Reefton Railway, a few miles to the south of the Big River Mine. During the year this mine commenced operations. Considerable geological similarity exists between the Blackwater and Reefton Goldfields, both as regards geological age, vein-

characteristics, and direction of strike. The reef being operated upon at Blackwater occurs as a lenticular fissure-vein of somewhat laminated quartz in highly inclined beds of phyllite, alternating with sandstone, all probably of Carboniferous age. The lenses of quartz vary considerably in dimensions, the maximum width observed by he writer during an inspection of the mine in September, 1908, being about 7 ft. The strike of the vein is north-north-east and south-south-west, dipping at a high angle to the west, the direction of strike being well maintained throughout the whole length operated upon viz., 2,100 ft. The gold-contents, which are frequently visible to the unaided eye, appear to occur in the small seams or laminations in the quartz parallel with the walls. The ore is free-milling and unrefractory. The mine is worked from a vertical winding-shaft in depth 457 ft., also from a connecting adit 430 ft. in length, driven out from the No. 2 or "Joker" level (310 ft.) to the slope of a hill facing the reduction-works. The workings above the No. 2 level (307 ft.) are drained from the Joker adit; below that the smal quantity of water encountered is baled from the winding-shaft. The hoisting plant consists of a pair of non-condensing engines with cylinders 14 in. in diameter, having 28 in. stroke, the steam-pressure being 120 lb. These engines operate two coupled drums of 5 ft. 6 in. diameter, either of which can be run independently if desired. A considerable amount of development was carried out underground preparatory to the installation of the treatment plant. At the end of 1908 the following levels had been driven :—

	Depth from Surface.	Distance driven by Levels in the Vein.	
	Ft.	N.N.E.	S.S.W.
No. 1 level	150	388	157
No. 2 or Joker level	307	2,090	500
No. 3 level	432	731	300

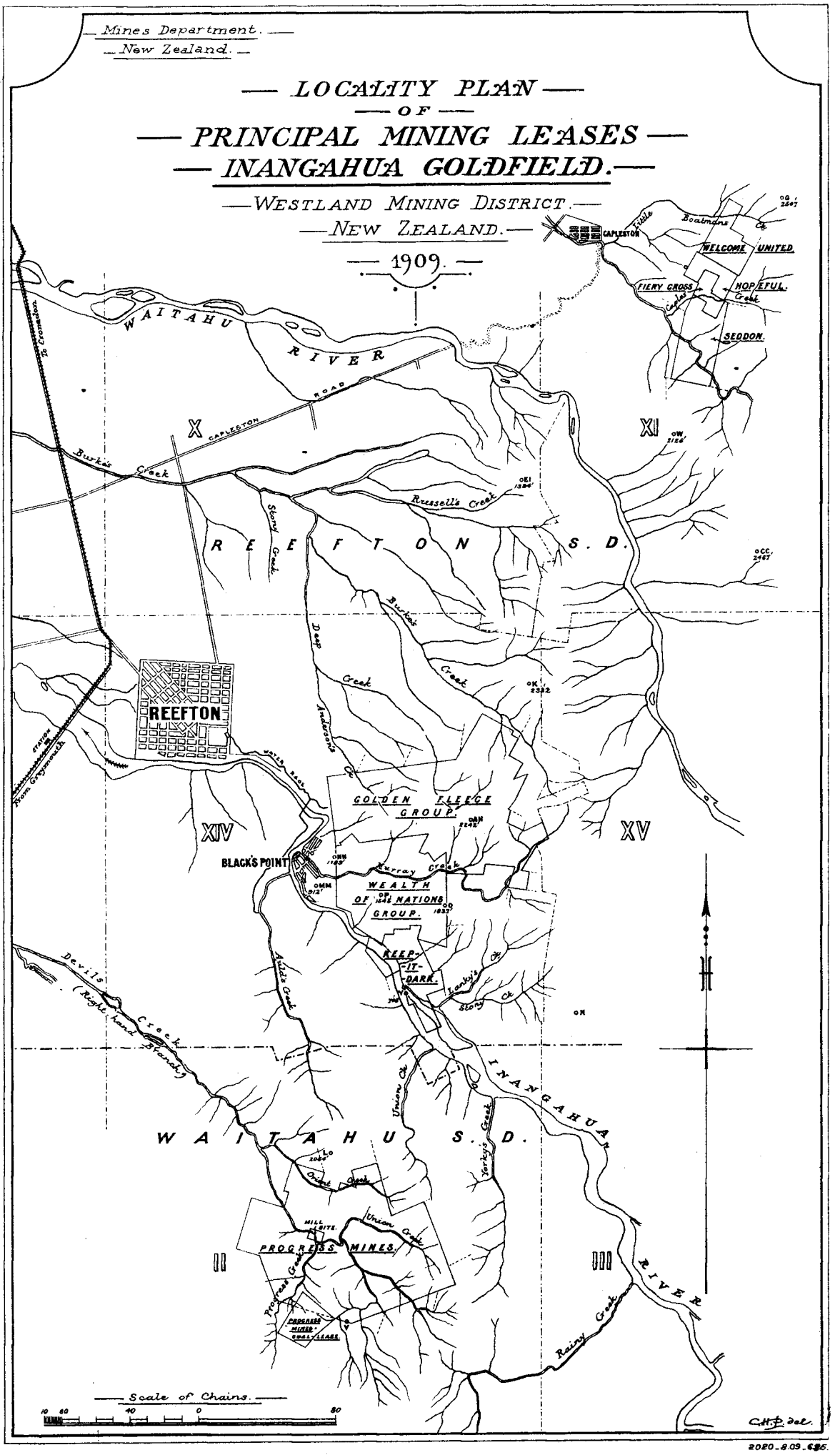
The reef has been proved for a continuous length of 2,090 ft. in the No. 2 and upper levels. The reduction-works are an excellent and up-to-date installation, founded on the most modern practice in this Dominion and elsewhere. The favourable configuration of the country, together with an ample water-supply, has been taken advantage of to the fullest extent. The ore is conveyed by horse tramway from the No. 2 (Joker) level adit to storage-bins situated at a considerable altitude above the grizzly-bins, these bins being connected by a self-acting inclined haulage-plane, upon which self-dumping skips of 5 tons capacity are employed. The mill consists of a 30-head installation, with stamps of 950 lb., which are dropped about 8 in., ninety beats per minute; the mortars discharge the pulp through woven steel-wire screens into launders, connecting the mill with the amalgamated copper plates, situated some distance away to avoid vibration. The whole of the motive power for the reduction-works is obtained by the utilisation of water-power from Snowy Creek, at an elevation of 120 ft. above the Pelton wheels, from which the power is conveyed to the various machines by rope gear. The following treatment-chart will illustrate the order of treatment of the ore when the works are quite completed :—



For the five months' work during 1908 £17,647 has been obtained as the result of treating 9,169 tons (of 2,240 lb.) by battery amalgamation and cyanidation.

Southern Inspection District.

Barewood Goldfield.—By the Proclamation, dated 18th March, 1909, bringing the whole of the Barewood Run, containing about 31,570 acres in the Taieri County, under "The Mining Act, 1908," this field will now receive that attention from prospectors which for many years has not been possible, owing to the fact that it formed part of a sheep-run situated on the Otago University Reserve, which was closed to mining, excepting only a small area of 2,719 acres comprising the Barewood Mining Reserve, upon which quartz-mining has been carried out in a more or less desultory manner for many


Mines Department.
New Zealand.
LOCALITY PLAN
OF
PRINCIPAL MINING LEASES
INANGAHUA GOLDFIELD.
WESTLAND MINING DISTRICT.
NEW ZEALAND.
1909.
WAITAHU RIVER
ROAD
CAPLESTON
Burke's Creek
Russell's Creek
Stony Creek
REEFTON S.D.
Deep Creek
Burke's Creek
Anderson's Creek
REEFTON
GOLDEN FLEECE GROUP.
BLACK'S POINT
Murray Creek
WEALTH OF NATIONS GROUP.
KEEP-IT-DARK
Devil's (Right hand) Branch
Creek
Union Creek
INANGAHUA
WAITAHU S.D.
Orbit Creek
Yorkjo's Creek
MILL SITE.
PROGRESS MINES.
Progress Creek
PROGRESS MINES GOLD LEASE.
RIVER
Rainy Creek
Scale of Chains.
10 60 40 0 80
C.H.P. del.
WELCOME
UNITED
FIERY CROSS
HOPEFUL
SEDDON.
Boatmans Creek
Little
OG 2607
OEI 1384
OCC 2467
OK 2332
OBN 1189
OMM 912
OBN 2492
OO 1832
OW 2158
OK
XIV
XV
X
XI
II
III

2020—8.09.—635.

— Mines Department. —
— NEW ZEALAND. —

— PLAN —
— OF THE —
— WELCOME GROUP OF MINES. —
INANGAHUA GOLDFIELD.
— NEW ZEALAND. —

SHOWING PRINCIPAL MINING LEASES & WORKINGS.

— 1909. —

Compiled from Official Plans
by Julius Schadick. Licd Surveyor & C.E.

— Scale of Chains. —

10 5 0 10 20

C.H. PIERARD. DELT.

By Authority. John Mackay, Government Printer.

2,700-5/09-262

Mines Department
NEW ZEALAND.

PLAN
OF THE
PROGRESS GROUP OF MINES.—
INANGAHUA GOLDFIELD.
NEW ZEALAND.

SHOWING PRINCIPAL MINING LEASES & WORKINGS.

1909.

Compiled from Official Plans
by Julius Schadick, Licd Surveyor & C.E.

L
2064'

NEW AERIAL TRAM-LINE. Length 6756 ft.
Greatest height 600 ft.
Termini 1100 ft.

OLD AERIAL TRAM-LINE.

Orient Creek

Devils Creek

BATTERY LEVEL 466'

SHAFT A
No 1
No 2
No 3 367'
No 4 430'
No 5 615'
No 6 816'
No 7 516'

SHAFT B
1630
No 10
No 11
No 8 1016
No 9 1116'
No 1 TUNNEL
1165 LEVEL
1165 LEVEL

MILL SITE
a r p
4 : 1 : 10

GLOBE

Union Creek ROAD

PROGRESS MINES

a r p
729 : 1 : 23

ROAD

BIG RIVER — KILLERTON

Progress Creek

Devils Creek

PROGRESS MINES
COAL-LEASE.
a r p
48 : 0 : 00

Scale of Chains.
10 5 0 10

C H PIEPARD DEL.

By Authority: John Mackay, Government Printer.

2760.5/09.365

— Mines Department. —
— NEW ZEALAND. —

— PLAN — — OF — — THE CONSOLIDATED — — & — — KEEP-IT-DARK MINES. —

INANGAHUA GOLDFIELD.

— NEW ZEALAND. —

SHOWING PRINCIPAL MINING LEASES & WORKINGS.

— 1909. —

Compiled from Official Plans
by Julius Schadick Licd Surveyor & C.E.

— Scale of Chains —

10 5 0 10 20

CONSOLIDATED GOLDFIELDS OF N.Z.

GOLDEN FLEECE GROUP

a 623 r 3 p 12

Anderson's Creek

TUNNEL

LOW LEVEL TUNNEL 773' above Sea Level & 1258' below Shaft

Golden Fleece

Track to

686 above Sea Level

BLACKS POINT

NN 1139

Road to Coal Mines

MURRAY CREEK

MM 911'6

Road from REEFTON

INANGAHUA

SHAFT 2026' above Sea Level 1797 S.F deep

TUNNEL LEVEL 1172' from Dr to Shaft

AH 2242'

CONSOLIDATED GOLDFIELDS OF N.Z.

WEALTH OF NATIONS GROUP

Note. Levels 6–10 below deep shaft.

Note. Levels 1–5 below incline shaft.

a 316 r 3 p 11

SHAFT 1187' above Sea Level 1136' deep.

INCLINE SHAFT. 765' above Sea Level. 800' deep.

O 1837

MONKEY SHAFT. 432 ft deep 763 ft above Sea Level. 229 ft below " "

MAIN SHAFT. 1103 ft deep 729 above Sea Level 374 below " "

HERCULES SHAFT. 781 ft above Sea Level 735 ft deep

KEEP-IT-DARK

a 118 r 0 p 00

Y 1108

SOUTH KEEP IT DARK SHAFT. 734 ft above Sea Level 512 ft deep

Lanky's Creek

Murray Creek

RIVER

By Authority John Mackay Government Printer

4700. 8/09. P&E

years. The Barewood Gold-mining Company (Limited), by systematic operations, having demonstrated that the reefs may be worked profitably, and that further prospecting and developments are quite justified. Upon the original mining reserve of 2,719 acres, an area of 450 acres is held in fifteen gold-mining leases, which extend for a distance of about four miles along the main lines of reef. At the present time mining operations are only carried out by two companies—viz., the Barewood Gold-mining Company (Limited) and the Welcome Quartz-mining Company, which latter company was only engaged upon prospecting operations at the time of my inspection.

The mine of the Barewood Company, which is contained within an area of 120 acres leased by the company, is situated at an altitude of about 1,075 ft. above sea-level, and mining operations have been carried out to a depth of 290 ft. from the surface by means of a vertical three-compartment winding-shaft, to which crosscuts connect four levels, viz.—

No. 1 level, depth 130 ft., driven upon 88 ft. S.E., and 429 ft. N.W.
No. 2 ,, ,, 188 ft., ,, 132 ft. ,, ,, 282 ft. ,,
No. 3 ,, ,, 240 ft., ,, 68 ft. ,, ,, 200 ft. ,,
No. 4 ,, ,, 290 ft., ,, 227 ft. ,, ,, 154 ft. ,,

The depth of the winding-shaft is 300 ft., which it is proposed to sink to 400 ft. during the present year. An examination of the deepest workings furnished satisfactory evidence as to the maintenance of the vein in width and ore-values as depth has been attained. The average strike of the main line of reef, which has been found to maintain its course to a greater length than is usual with the quartz reefs of this Dominion, is north-west and south-east, inclining to the north-north-east at an angle of from 53° to 60°. The maximum width of the vein at present exposed is 12 ft.: this appears in the No. 4 or deepest level, but an average width of about 7 ft. is exposed in the mine. The treatment plant embraces Askem ore-breaker, Challenge automatic feeders, a 10-head mill and Wilfley table, all being driven from a Tangye suction-gas engine. The ore is free-milling, and the tailings are considered not worth cyanidation. Hitherto the drainage of the mine has been accomplished by baling, but it is proposed to put down electrically driven three-throw ram pumps during the year. The returns from the mine during 1908 were satisfactory: as the result of treating 4,793 tons of ore by battery amalgamation and concentration, bullion to the value of £7,230 was obtained, being an average of £1 10s. 10·7d. per ton, against a cost of £1 1s. 4·8d. per ton. The total production from the mine since 1895 has been £44,930 11s. 6d. from 22,825 tons (of 2,240 lb.). The capital called up only amounts to £2,000, a considerable amount of the development and plant having been paid for from the production of the mine.

The Ventilation and Hygienic State of the Mines.

A considerable amount of attention has been drawn to this Dominion by reason of the inclusion of the disease known as miners' phthisis in the Workmen's Compensation Act as a disease for contracting which an operative must be compensated. As a result of this Ordinance the mine-owners declined to take the risk, and stipulated that each worker should be medically examined before being allowed to resume operations; and, the workers generally declining to undergo such examination, a settlement was only arrived at by the State Insurance Office accepting the risk at a low rate. The hygienic condition of the mines of this Dominion is quite equal to that in any other country, owing to the moderate temperature, plentiful water-supply, and compulsory sanitary arrangements. In several of the mines where machine drills or coal-cutters are used dust is not prevalent, owing to the dampness of the strata. A reliable gauge as to the general health of the miners is the average annual output of mineral per person employed underground; and this for the year 1908 amounted to 641 tons of coal per collier employed underground, and 159 tons of quartz per person employed at quartz-mines, which output is exceeded in no country. As the result of a medical inquiry into miners' disease at Bendigo, Victoria, Dr. Kelman, who reported thereon, stated that the chief cause of the ravages of consumption undoubtedly is the spreading of the infection by workers suffering from the disease in an active state. In that stage the tubercle bacilli are present in very large numbers, and are extremely virile. The same conditions lead in mines to the spread of consumption as produce the like result in habitations on the surface.

For the purpose of ascertaining the temperature and degree of humidity in the deepest mines of this Dominion, readings from the dry- and wet-bulb thermometer have recently been taken in the Inangahua mines by Inspector A. Whitley, and by Inspector M. Paul and the writer in those at Waihi, with the following satisfactory results:—

Name of Mine.	Depth of Place tested, from Surface. Ft.	Locality tested.	Thermometer-readings in Degrees Fahr. Dry Bulb.	Wet Bulb.
Progress	1,426	No. 11 level	67·5	66·0
Wealth of Nations ..	1,736	No. 10 ,,	70.0	69.0
Keep-it-Dark	1,074	No. 7 ,,	65·0	63·5
New Big River	1,375	No. 9 ,,	61·0	58·0
Waihi	850	No. 8* ,,	81·5	78·0
,, ...	850	No. 8† ,,	77·0	..
Waihi Grand Junction ..	794	No. 4‡ ,,	84·0	81·0
,, ..	794	No. 4§ ,,	86·0	85·0

In connection with the Waihi tests, it is only fair to state that they were taken in the very warmest places that could be found in the mines; nevertheless, the results are entirely satisfactory. The sanitation of the mines is provided for by regulation under "The Mining Act, 1908."

* Temperature taken at the east face of the Empire vein, 580 ft. from No. 4 shaft crosscut,
† Temperature taken at the extreme face of the east level on the Martha vein,
‡ Temperature taken at stope 1,100 ft. in from shaft.
§ Temperature taken at east face Martha vein,

Electrically Driven Pumps.

Several of the most important mines throughout the Dominion are putting down electrically driven pumps, or have already done so, and as the application of this power for such a purpose is an innovation in this country the following table has been prepared by the writer for the purpose of illustrating the type of pump generally favoured :—

Name of Mine.	Type of Pump.	Estimated Height to be pumped.	Estimated Capacity in Gallons per Minute.
Waihi Grand Junction	Sulzer vertical 3-stage turbine	250 ft.	666.
Waihi Gold-mining Company ...	Three-throw ram ...	600 ft.	1,500.
Barewood Gold-mining Company...	Three-throw ram ...	600 ft.	
New Zealand Crown Mines ...	Duplex ram (2 units)	1,000 ft. (2 stages)	1,135.
Talisman Consolidated ...	Cornish	...	
Ross Goldfields (Limited) (alluvial)	Multi-stage Worthington turbine (4 units)	400 ft.	3,500.

(2.) Dredge Mining.

During the past year, as will be seen from the following statement, the average yield per working dredge was £3,039, being a decline of £239 on that obtained during the previous year; a decline of £45,816 has to be recorded in the value of gold-production by dredges, and the number of working dredges has decreased by five.

The following statement shows the number of dredges, the gold produced by them, and the number of persons employed during 1907 and 1908 :—

Inspection District.	Number of Dredges.				Number of Persons ordinarily employed.	Yield during 1908.	Average Yield per Dredge, 1908.
	1907.		1908.				
	Idle.	At work.	Idle.	At work.			
						£	£
West Coast	2	25	4	23	196	75,670	3,290
Southern	35	103	13	100	817	298,148	2,981
Totals	**37**	**128**	**17**	**123**	**1,013**	**373,818**	**3,039**

The dividends paid by forty-one of these dredges, the property of registered companies, amounted to £75,050 during the year; the profits of privately owned dredges is unobtainable.

The following is a statement regarding the most productive dredges during the year :—

Name of Dredge.	Production during 1908 of all Dredges.	Dividends paid by Forty-three Dredges owned by Registered Companies.	
		During 1908.	To 31st December, 1908.
West Coast District—	£	£	£
No Town Creek	7,174	3,000	23,400
Pactolus (2 dredges)	14,391	8,125	56,250
Southern District—			
Alexandra Eureka	5,012	2,400	18,450
Golden Treasure	5,847	2,445	23,439
Koputai	6,952	2,538	4,813
Manuherikia	5,145	2,100	30,600
Masterton	9,206	5,500	25,000
Mystery Flat	9,873	6,614	20,119
Otago (3 dredges)	5,621	1,250	16,000
Paterson's Freehold	7,669	3,600	13,200
Rise and Shine	14,414	5,700	15,600
Rising Sun	8,567	3,600	8,000
Waikaia	8,113	4,550	10,500
Waikaka Syndicate	5,735	1,400	13,300
Waikaka United (2 dredges)	11,767	7,000	33,600
Waikaka Queen	4,345	1,590	4,628
Other working dredges (both districts) ...	243,987	14,408	377,007
Totals	**373,818**	**75,820**	**693,906**

In Otago, the principal gold-dredging field in Australasia, many of the claims on the River Molyneux and upon the Waipori and Waikaka fields are gradually becoming worked out; but upon the upper Clutha and elsewhere considerable areas remain to be worked.

The era of the dredge of small dimensions and low power is past, but there yet remains several years of prosperity for those large dredges of greater power capable of working increased quantities of low-grade gravel.

In Otago and Southland eight dredges are now operated by hydraulic power, and two by electricity. The most consistently remunerative dredging-field is still that at Waikaia, and some excellent returns have been obtained from the Waikaia, Koputai, Mystery Flat, and Masterton dredges. The first-named established a record for land dredging in New Zealand, during one week in April, 1908, by securing 248 oz. of gold. The Hartley and Riley dredge, in the Clutha Gorge, in less than three weeks during the same year obtained from a small patch 450 oz. of gold.

On the West Coast no new dredges have been built during the year, but those at work have done very well, especially the Pactolus and No Town Creek dredges.

The diminution of the dredging returns during 1908 may to a certain extent be attributed to the flooded state of the rivers during the autumn and early winter, when, owing to the height of the water, the dredges were precluded from working in the river-gorges for a considerable period.

The following is a statement comparing the production of, dividends paid by, and number of men employed upon all the gold-dredges in Victoria and New South Wales, with those in New Zealand the property of registered companies during 1908 :—

	Number of Dredges.	Value of Bullion.		Dividends.		Men employed.	
		Total.	Per Dredge.	Total.	Per Dredge.	Total.	Per Dredge.
		£	£	£	£		
Victoria (all dredges)	47	220,632*	4,694	59,249	1,260	641	13·6
New South Wales (all dredges) ...	26	155,770	5,980	†	†	†	†
New Zealand (dredges the property of registered companies only)	41	353,104	8,612	75,050	1,830	369	9

* Estimated at £4 per ounce. † Not known.

(3.) Alluvial Mining.

The past season has been particularly favourable for this branch of gold-mining, for the same reason that it has been unfavourable to gold-dredging—viz., a plentiful supply of water. A very heavy snowfall took place over the whole of Central Otago at the beginning of July, and a plentiful rainfall on the West Coast, providing ample water for sluicing, with the result that there has to be recorded an increase of £101,009 in the value of the production of the alluvial gold mined during 1908.

On the West Coast no new claims have commenced operations during the year, but the Ross Goldfield (Limited) have their electrical pumping installation and main shaft well under way, and should during the current year unwater the old Ross United workings, which have remained submerged since the inundation during 1887. Mr. William Wylie, who at that time had control of the mine, has been appointed certificated manager of the new company, and the development of this rich goldfield is awaited with great interest.

The following alluvial claims still contribute to the West Coast gold-production: viz., the Mont d'Or, Parapara Hydraulic Sluicing Company, Walker Maruia; and the Buller, Addison's, and Charleston old diggings are still productive.

In Southland operations at the well-known Bluespur and Gabriel's Gully Mine on the deep-level cement have proved quite satisfactory. During the year 223,460 cubic yards of cement had been treated for a return of £4,175, at a cost of £3,684, being at the rate of 3·95d. per cubic yard mined and treated. At Island Block a payable run of wash about 90 ft. in depth has been proved by the Keystone placer drill on the Golden Run Claim. At Round Hill sluicing and elevating operations are being carried out as hitherto. Near Waikaia work of a pioneer character and of considerable magnitude is being carried out by the Muddy Terrace Sluicing Company (Limited), formed for the purpose of sluicing and elevating the auriferous wash found distributed over the Muddy Terraces and the flats included in the company's claims. A water-race from Dome Creek to the claims, 16¼ miles in length, having a carrying-capacity of about 45 heads of water (45 cub. ft. per second) has been constructed. Portions of the ground have formerly been profitably worked by ground-sluicing up to the highest level accessible from an old race situated at a considerably lower level and with a very much smaller water-supply than the newly constructed race. This company, which is capitalised at £20,000, has been assisted by a Government loan under Part X of "The Mining Act, 1908."

At Naseby, in Central Otago, where mining has been on the wane for several years, a considerable amount of local interest has been taken in the possibilities of the existence of deep leads, and the Mount Ida Deep Lead Company (Limited) has been formed for the purpose of testing the deep ground by means of a Keystone placer drill loaned from and subsidised by the Government. This drill has been specially imported from America, and is of a type that has given satisfaction in cases where other drills have failed to pierce beds of gravel.

Current-pumps for Mining and Irrigation.

Renewed attention has been recently devoted by Messrs. F. W. Payne, H. Morgan, and Milne, Otago engineers, to the possibilities of economically utilising as a motive power the swift current of the River Clutha, which in volume of water discharged and velocity of current is exceeded by few rivers in the world, and by none in Australasia.*

As a result of such investigations, a current-wheel of greater efficiency and power has been evolved upon scientific lines, which, for operating pumps to raise water for mining or irrigation purposes and for the generation of electric power, promises to surpass all other methods that may be practicable in the valley of the Clutha, both in economical installation and in low working-cost.† This great river is eminently favourable for the successful application of current-driven machinery, the velocity of the stream ordinarily varying between five and eight miles per hour, which has been found to embrace the range within which such machines produce the most satisfactory results. The great depth and width of the stream, the absence of floating timber, and, in the upper portion of the river, of navigation also, also constitute favourable factors.

The advantages of an economical motive power within the valley of the Clutha for irrigation and mining purposes cannot well be overestimated; the configuration of the country is favourable to the reticulation of large areas of fertile land from current-pumps upon the river, and water for alluvial gold-mining may also be raised to considerable elevations in localities where a water-supply from any other source is practically unobtainable. And as a result of investigations I am satisfied that the recently evolved current-pump is capable of fulfilling these requirements within range of its operations.

At the present time there are two installations of current-pumps on the Clutha—viz., that designed and constructed by Mr. F. W. Payne at Alexandra, and that of Messrs. H. Morgan and Milne at Roxburgh—and these were examined and subjected to careful tests carried out by Messrs. Morgan, Payne, and myself, with the accompanying results.

The current-wheel pumping plant recently installed by the Alexandra Lead Gold-dredging Company (Limited) on the River Clutha, at Alexandra, by Mr. F. W. Payne (see drawings and photograph) is the pioneer current-pump of Australasia, and is probably the largest and most powerful unit of this class of machine ever constructed. The special features of this machine, designed for the purpose of obtaining greater efficiency than former types, are—

(*a.*) The curvature of the blades (of a somewhat similar form to Poncelet's undershot wheel), which form, it is claimed, offers increased resistance to the current, and both enters and leaves the water with less commotion than the straight floats of former types of wheel.

(*b.*) A movable shutter at the up-stream end of the wheel is operated by a hand-winch, and acts as a brake by restraining the current from the wheel when required.

(*c.*) The magnitude of the wheel—viz., 19·77 ft. diameter—and the depth of the floats or blades submerged. In no former machine of which there is any record has the diameter of the wheel exceeded 16·4 ft. (*Vide* "Spon's Dictionary of Engineering.")

(*d.*) The reduced number of blades or floats.

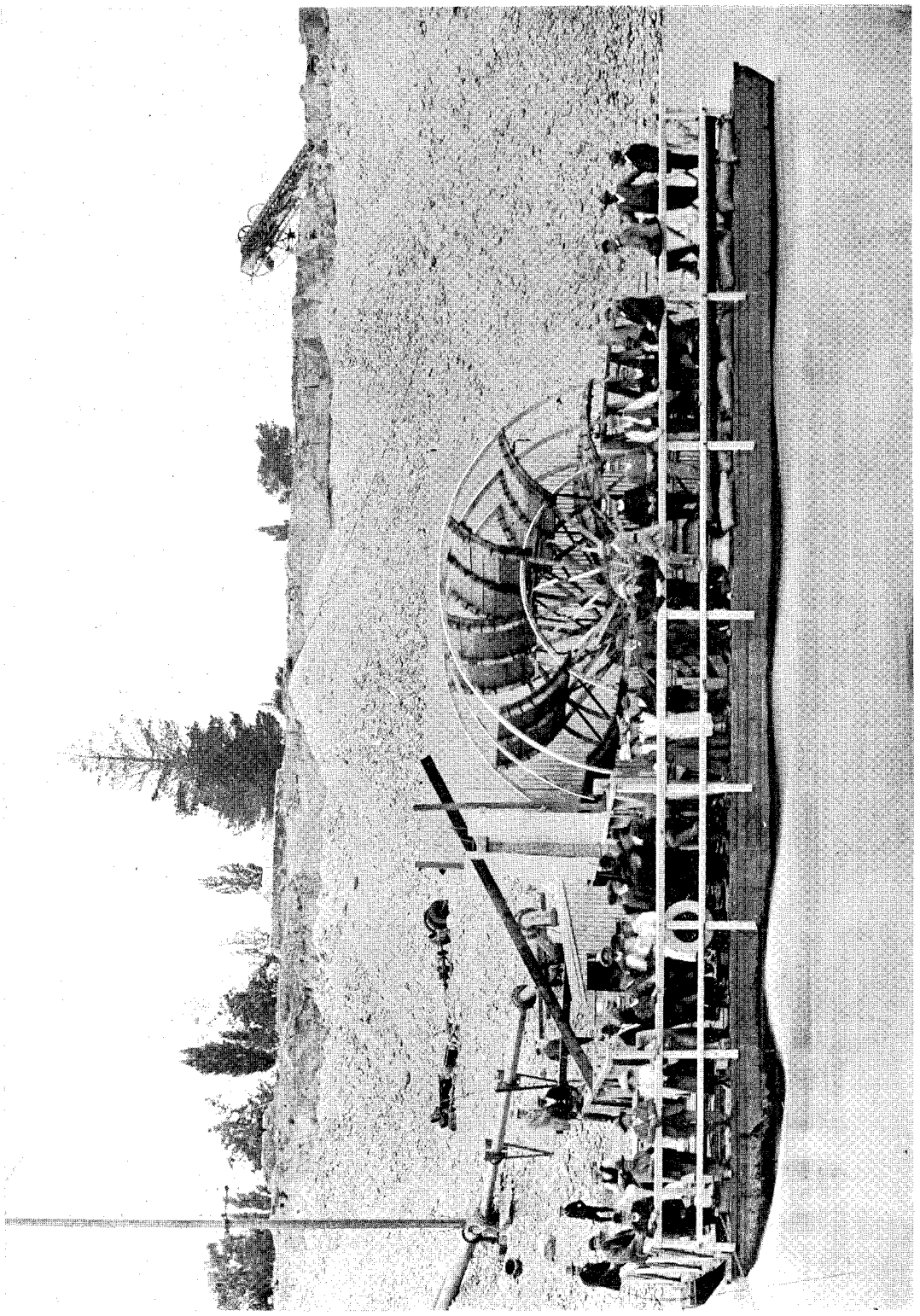
The current-wheel operates between two parallel pontoons, the stream flowing between them. This machine was installed for the purpose of raising water, which it efficiently does, to an elevation of 51 ft. 6 in. above the river-level for sluicing the auriferous gravel, river-banks, and terraces. The following is a summary of the results of a series of careful tests of this machine, together with the principal dimensions:—

Velocity of stream (8/1/09), 5·7 miles per hour.
Theoretical horse-power of stream, 69·4.
Brake horse-power of current-wheel, 35.
Horse-power in water discharged by a centrifugal pump, 14·6.
Efficiency of current-wheel, 50·4 per cent.
Efficiency of centrifugal pump, 41·7 per cent.
Combined efficiency of complete plant from river-current to discharge-weir, 21·04 per cent.
Diameter of current-wheel, 19 ft. 9½ in.
Length of current-wheel (or float), 20 ft. 0½ in.
Area of float (or blade) submerged, 67·735 sq. ft.
Depth of float (or blade) submerged, 3·38 ft.
Revolutions of wheel per minute at above velocity of stream, 3·96.
Number of blades in wheel, 12.
Length of pontoons, 55 ft.
Height of water discharged above river-level, 51·5 ft.
Quantity of water discharged, 2·5 cub. ft. per second, or 1,347,840 gallons per day.

Based upon the results of the foregoing experiments, and the fact that the power increases as the cube of the velocity of the stream, the following table has been prepared, with a view to illustrating

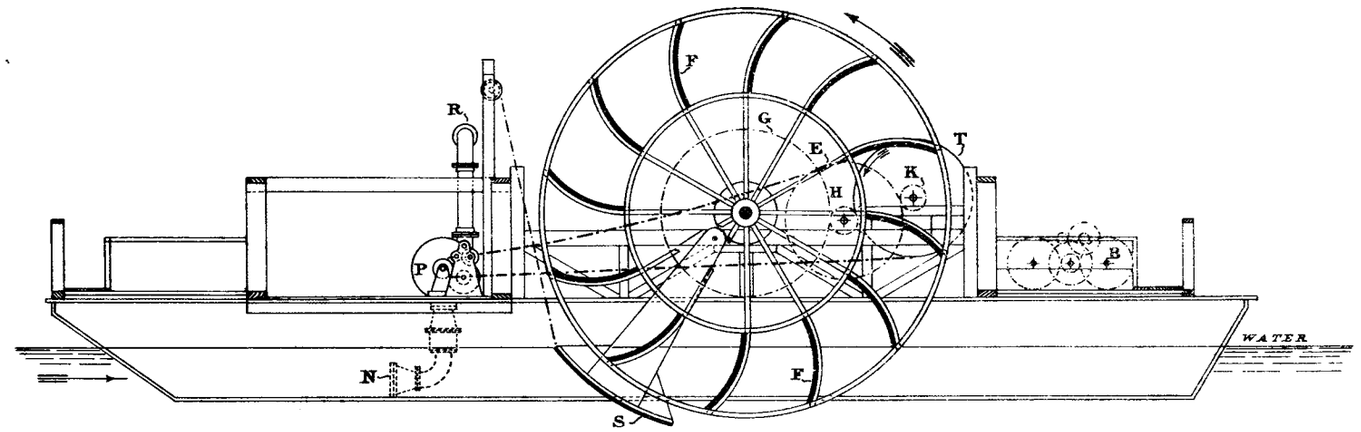
* The Clutha drains an area of upwards of 8,000 square miles, and discharges into the sea 1,000,000 cubic feet of water per minute ("MacDonald's Geography of New Zealand").

† The cost of construction of the principal races, including their storage-dams, varies generally in Otago and Southland between £500 and £2,000 per cubic foot of water delivered per second; but in some places, including the gorge and valleys of the Clutha below Cromwell to Roxburgh, water from races is practically unobtainable. The cost of installation of one-unit current-wheel plant, complete on a steel pontoon, would be about £1,800, and this would deliver at an altitude of 150 ft. above the river (as based upon my recent tests) from 1·20 to 2·85 cubic feet of water per second, varying with the velocity of the current. The relative average initial cost in Otago of Government races and dams per cubic foot of water delivered therefrom per second is £1,250, and by the current-pumping plant to an altitude of 150 ft. the cost would approximately be £900.

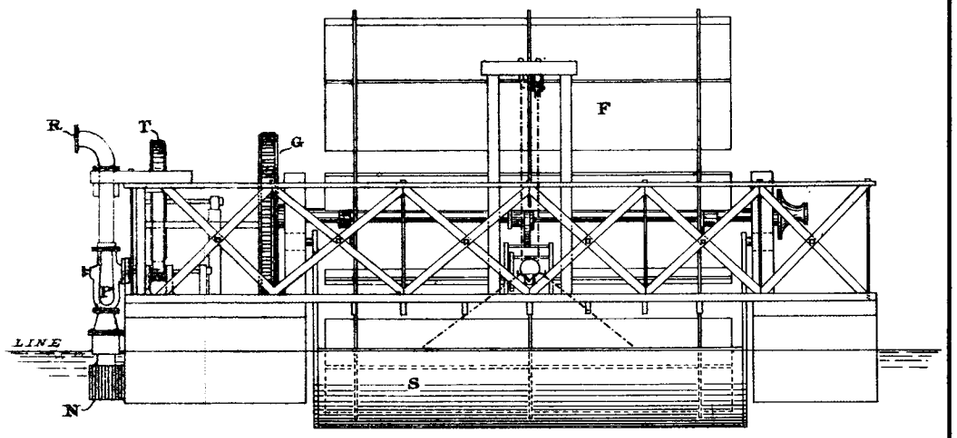


PAYNE'S PATENT CURRENT PUMPING-PLANT, ON THE RIVER CLUTHA, AT ALEXANDRA, N.Z.

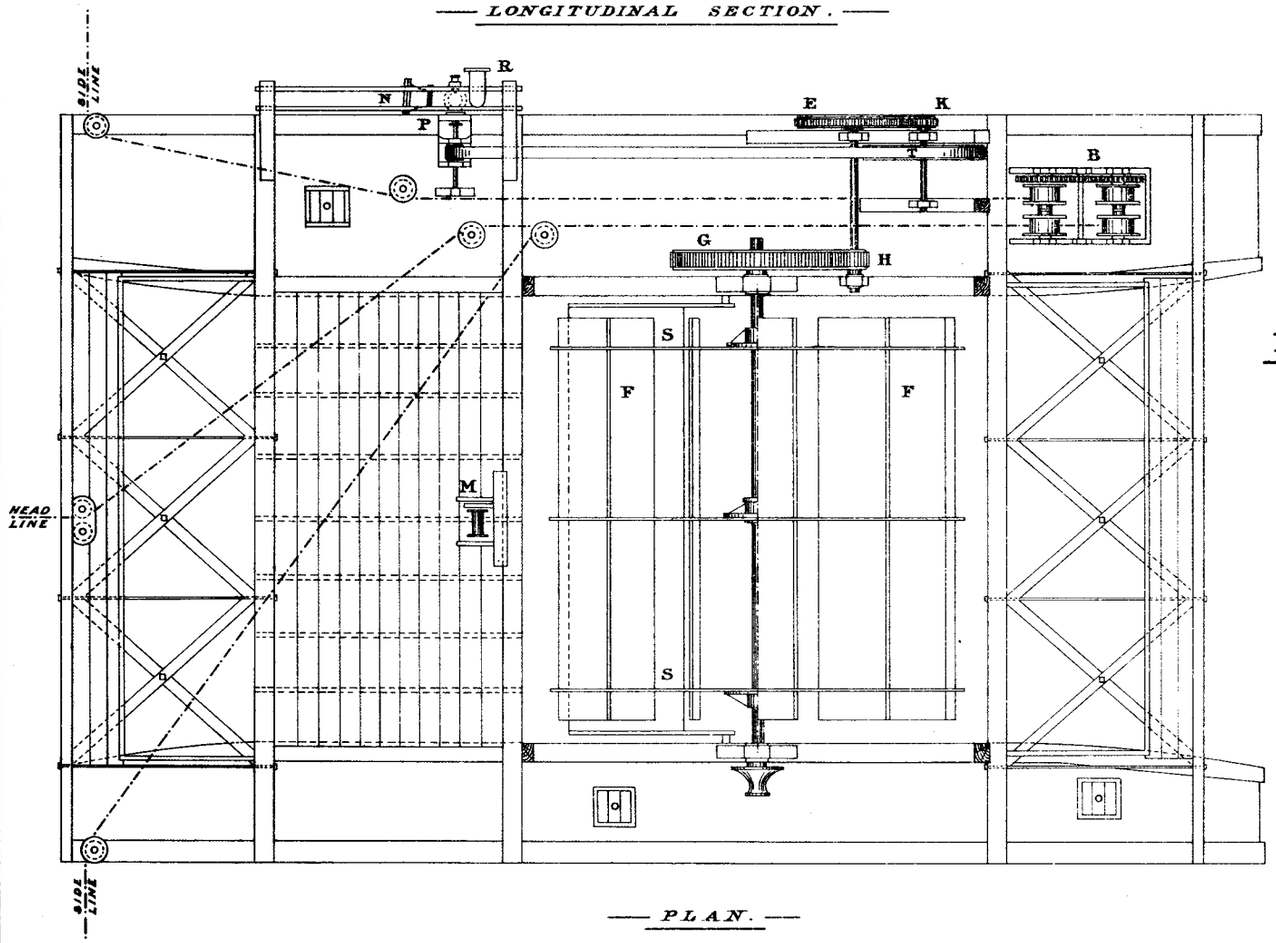
Face p. 12.]



— LONGITUDINAL SECTION. —



— END ELEVATION. —



— PLAN. —

RIVER — CURRENT PUMPING PLANT.

— PAYNE'S PATENT. —

— REFERENCE. —

F. *Float or blade of wheel.*

G.H.E.K. *Multiplying gear.*

T. *Pulley driving centrifugal pump.*

P. *Centrifugal pump.*

R. *Hanging pipes & ball or swivel joints.*

S. *Shutter controlling machine.*

M. *Hand winch operating shutter.*

B. *Mooring winches.*

N. *Suction pipe.*

To illustrate Report by the Inspecting Engineer of Mines. N. Z.

— 1909. —

3450.2/09-77.

the capabilities of one unit only of the aforementioned current-pump at various velocities of the stream and at various heads or elevations above it. These results may be doubled or trebled by the installation of two or three current-wheels (units) on one pontoon, as may be required :—

Height pumped in Feet.	Velocity, 6 Miles per Hour. (B.h.p. developed, 40·97.)	Velocity, 7 Miles per Hour. (B.h.p. developed, 64·9.)	Velocity, 8 Miles per Hour. (B.h.p. developed, 97·00.)
	Water discharged, in Cubic Feet, per Second.		
50	3·60	5·71	8·53
100	1·80	2·85	4·26
150	1·20	1·90	2·85

In these calculations a pump giving 50 per cent. efficiency of the power of the current-wheel has been substituted for the inefficient centrifugal pump of the tests quoted, the brake horse-power produced being that registered by a rope dynamometer.

The patent current turbine pumping-machine of Messrs. H. Morgan and Milne is designed on entirely original lines, a turbine replacing the paddle-wheel of former types.

A working model of this machine has been installed by the inventors on the Clutha River near Roxburgh. This turbine has six curved blades to divert the current at right angles to the flow, the blade being deflected at an angle of 22°. A conical boss on the up-stream side deflects that water on to the blades which would otherwise strike the axis of the turbine. The wheel revolves at a high speed, and is much more compact than the paddle-wheel type. A three-throw plunger, or ram, pump is installed on the pontoon, and is operated by the turbine, which is raised or lowered in the stream by a hand-winch on the pontoon.

Owing to the extremely variable velocity of the current rendering the gauging of the same in this case only approximate, and the fact that the pump was not connected with the river-banks by pipes, I am unable to furnish data regarding efficiency ; but the machine, although only a model (the turbine being but 3 ft. in diameter), developed 2 brake horse-power with a current-velocity only slightly exceeding five miles per hour, which is extremely creditable for the first attempt at an entirely original type of current motor. The first cost of this class of current-pump would be less than that of the original paddle-wheel type, and the three-throw plunger pump should have higher efficiency than a centrifugal pump.

V. MINERALS OTHER THAN GOLD.

Copper.

There exists a general stagnation and lack of energy in the prospecting and development of the copper-deposits throughout the Dominion, the total export of this metal during 1908 only amounting to £275. At Whangaroa the claims are still being prospected in a desultory manner ; the old Maharahara Mine near Woodville has again been abandoned ; the Maoriland Copper Company suspended operations at Aniseed Valley, Nelson, after the result of the trial smelting operations had proved unsatisfactory ; at Mount Radiant, near Karamea, the copper leases still remain unworked. A report has been recently published that copper-lodes had been found near Kaipara Harbour ; but the prospects of such a discovery in the Tertiary rocks which cover that district are extremely remote. A quarter of a century ago the occasional discovery of fragments of native copper on the beaches of that harbour was reported upon by Sir James Hector, F.R.S. ; but such floating fragments do not constitute a copper-mine, although they probably approach as near thereto as anything that will ever be found in the Tertiary rocks of Kaipara.

Iron.

Operations on the Parapara iron lease comprise the construction of roads and open cuttings. The Inspector of Mines for the district reports that no systematic development-work to determine the extent and value of the ironstone-deposits has yet been undertaken. During the past thirty years the potentialities of these deposits have been the theme of much reporting, and it is about time that some practical development was undertaken.

Scheelite.

A decline of £9,431 has occurred in the annual export of this mineral, notwithstanding the activity that appears to have been recently displayed in opening scheelite-mines. This decline is difficult to explain, considering the high price of £120 per ton prevailing for scheelite, and that it is one of the easiest minerals to mine and to save. Scheelite generally occurs associated with auriferous quartz and is remarkably heavy : about 6 cub. ft. weigh a ton, whereas about 13·5 cub. ft. of quartz is necessary to make the same weight. During the year 41 tons of scheelite concentrates were produced and exported by Messrs. Donaldson Bros. from Macrae's, and 30 tons, value £1,980, by Messrs. Reid, of Glenorchy.

Antimony.

Practically nothing has been done in connection with antimony-mining during the past year. The low price ruling no doubt accounted for the small amount of work done at the Alexandra antimony lease. On the West Coast this branch of mining has been moribund.

VI. STATE AID TO MINING.

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, 1909 :—

Name of Local Body.	Expenditure for the Year ending 31st March, 1909.	Liabilities on Authorities on 31st March, 1909.
	£ s. d.	£ s. d.
Whangarei County	100 0 0	...
Coromandel County	4,976 9 7	857 0 0
Thames County	3,838 5 0	...
Thames Borough	100 0 0	...
Ohinemuri County	5,230 7 1	922 2 11
Piako County	...	25 0 0
Pelorus Road Board	...	...
Takaka County	1,039 13 4	...
Collingwood County	3,536 0 0	...
Waimea County	85 0 0	...
Buller County	5,735 0 0	700 0 0
Inangahua County	1,662 4 10	15 8 0
Grey County	2,550 0 0	...
Brunner Borough	292 15 6	...
Westland County	2,437 10 0	162 10 0
Ross Borough	110 0 0	...
Waihemo County	...	...
Tuapeka County	100 0 0	...
Vincent County	445 14 6	...
Lake County	968 0 0	...
Southland County	240 0 0	...
Wallace County	...	...
Stewart Island County	150 0 0	...
Roads Department	12,522 3 7	...
Compensation for injuries, &c.	315 1 0	...
Contingencies	940 1 10	...
Totals	47,374 6 3	2,682 0 11

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, 1909 :—

Name of County, &c.	Expenditure for Year ending 31st March, 1909.	Liabilities on Authorities on 31st March, 1909.
	£ s. d.	£ s. d.
Coromandel	756 7 0	...
Ohinemuri	196 17 0	45 15 0
Buller	229 5 0	63 15 0
Inangahua	566 15 0	10 0 0
Grey	346 14 3	...
Westland	524 14 6	79 5 6
Ross Borough Council	28 4 0	...
Lake	129 9 7	...
Tuapeka	...	37 10 0
Prospecting associations	1,106 7 8	67 12 8
Totals	3,884 14 0	303 18 2

VII. SCHOOLS OF MINES.

The schools of mines, which have now been established twenty-four 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. During the year every school was presented by the Mines Department with a small circulating library of standard mining literature.

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
1908–1909 ...	2,738 11 1	328 9 3	100	642 9 4	3,809 9 8
Totals ...	21,177 13 6	2,016 5 0	1,246	16,918 4 4	41,358 2 10

The schools-of-mines examinations were held in December, 1908, and ninety-one 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, 1909. One student, Mr. C. Milne, of the Waihi School, 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.

ANNEXURE A.

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

Sir,— Inspector of Mines' Office, Thames, 31st March, 1909.

I have the honour to present my report on the gold-mining industry in the Thames District for the year ended the 31st December, 1908.

Waiotahi Mine (George Warne, mine-manager).—During the past year work in this mine has chiefly been confined to stoping out the blocks of ground opened up during the previous year. A considerable amount of prospecting was done on the Mariner's reef in the eastern portion of the mine at No. 6 level. A winze was sunk for a depth of 80 ft. on the foot-wall dropper at this level, and blocks were stoped out on the foot-wall dropper and the Cure reef at Nos. 5 and 6 levels. At No. 4 level a crosscut was put in from the Mary Ann shaft to connect with the workings on the main reef, with the object of intersecting any leaders in the hanging-wall of the main reef; also as a direct route to the Mary Ann shaft. This crosscut is being continued in a south-easterly direction beyond the foot-wall of the main reef to further prospect the mine. Three rises were put up on the main reef from this level, one of which reached a height of 120 ft. The company treated 3,497 tons of quartz and 140 lb. of specimen stone for a yield of 5,421 oz. of melted gold, valued at £14,716 14s. 3d. Forty-four men were employed.

Kuranui-Caledonian Mine (G. W. Horn, mine-manager).—The company have directed much attention to prospecting the various leaders met with while extending the No. 1 level crosscut. At No. 4 level the crosscut was extended 296 ft., making a total length of 1,016 ft. The two reefs—Kelly's and Duke's—were cut in the crosscut and driven on for some distance, but nothing of an encouraging nature was revealed. Whitley's and other leaders were driven on, from which good stone was secured, but generally speaking the work has been unprofitable. During the thirty years that this mine has been almost continuously worked, to a limited depth reefs have from time to time been discovered and explored, but they now appear to be exhausted. It is therefore apparent that the restoration of former enterprise and prosperity on the one hand, or gradual decadence, is entirely dependent on the results that will accrue from healthy deep-level development. Twenty-two tons and a half of ore yielded gold to the value of £308 17s. 3d. The mine was inspected from time to time and found to be in good order, but the ventilation was dull. Ten men were employed.

Old Alburnia Mine (H. Kendall, mine-manager).—The company holding this property, having practically exhausted the ore-bodies in the surface levels, have turned their attention to deep-level development, and have done creditable work. A large area of virgin ground was explored by driving from the Moanataiari tunnel. A crosscut was driven to within a few feet of the boundary, when the Sons of Freedom property was cut and driven on until a point was reached immediately under the old workings. A rise was then started and put up 410 ft., when a break in the country rock emitted a quantity of water, proving very troublesome for a time. There yet remains 140 ft. to be risen before a connection is made with the old workings. The completion of this work will improve the ventilation, besides giving 550 ft. of backs on the lode. Work has been necessarily slow and somewhat expensive. It should, however, be satisfactory to the company that they are prospecting in a practical manner. The country can now be tested to a depth of 1,007 ft. below the collar of the shaft. During the year a party of tributers working in the surface levels mined a parcel of ore, 36 tons and 124 lb. of picked stone, for a return of £830 5s. 2d. Ten wages-men and nineteen tributers were employed.

Kuranui Mine (E. Turnbull, mine-manager).—Operations have consisted of driving, rising, sinking, and stoping. The work was entirely of a prospecting character, but nothing of importance was discovered. The future of this mine is completely bound up with deep-level development. Six men were employed during the year, and the mine was in good order when inspected. During the year the company treated 51 tons of ore for a yield of 31 oz. 19 dwt., valued at £63 4s. 6d.

New Moanataiari Mine (William Baker, superintendent).—Early in the year four men were employed prospecting on the Cambria lode from the main rise between the Nos. 3 and 4 levels. This work was small in extent and nothing payable was discovered. The company, lacking sufficient capital to continue operations, applied for protection, which was granted. In the interim the May Queen Company purchased the property. Eighteen tons of ore was treated for a return of £31 8s. 9d.

Victoria Mine (Charles Williams, mine-manager).—Operations have been carried on in Nos. 1 and 2 levels, where a block of ore was worked out on the No. 2 reef. Below No. 2 level and on the No. 2 reef considerable prospecting and development-work was done. Two winzes were sunk to a depth of 60 ft. to prove the ore-values. At Nos. 3 and 4 levels similar work was undertaken, resulting in encouraging prospects. Eight men were employed. The mine was inspected several times during the year, and found to be in good order. A hundred and fifty tons of ore and 123 lb. of specimen stone were treated for a yield of 476 oz. 8 dwt., valued at £1,327 18s. 3d.

Saxon Mine (Thomas Moyle, mine-manager).—At the beginning of the year a little work was done in the Nos. 1 and 2 levels on the Cardigan lode, from which 22½ tons of ore was obtained and treated for a return of £105 1s. 6d. The company are anxious to test the value of the ore-bodies at a greater

depth, and applied for authority to drive a crosscut from the Queen of Beauty shaft; but, the time being inopportune, their request could not be acceded to. Seven men were employed during the few months worked.

Thames Mine (James Thomas, mine-manager).—Very little work has been done for the year under review. When the mine was visited in September last five men were working in one of the adit levels, where a 4 in. leader was being worked in a winze. Some good stone was secured in this place some time ago, but the subsequent work proved unprofitable, and operations were suspended.

May Queen Mine (W. Baker, mine-manager).—The company have directed most of their attention to the Nos. 5 and 6 levels at the May Queen shaft. At the No. 5 level (627 ft.), in the foot-wall of No. 4 lode, a small leader has been stoped on and a winze sunk on it to connect with the No. 6 level (720 ft.), thus giving good ventilation and better facilities for working the leader from that level. The leader averaged from 4 in. to 2 in. wide, and most of the gold for the year has been won from it. A winze was sunk on the hanging-wall leader of the No. 4 lode at No. 6 level to a depth of 100 ft., where a connection was made with a crosscut from the Queen of Beauty (Thames-Hauraki) shaft, No. 9 level (800 ft.). This connection has materially improved the ventilation in both places, and will facilitate the prospecting of the leader at the two levels named. At the No. 9 level (800 ft.), Queen of Beauty section, a crosscut was driven 410 ft., when the May Queen foot-wall leader, mentioned above, was intersected, and a connection made with the winze. The leader is being driven on east and west. South of the shaft one of the Queen of Beauty lodes has been driven on for a length of 400 ft. In the last 100 ft. good prospects were met with. An average of thirty-eight men were employed during the year, and 429 tons and 410 lb. of picked stone were treated for a return of £3,261 7s. 6d. The mine was inspected during the year, and everything was found to be in a satisfactory state.

New Una Mine (James Thomas, mine-manager).—In the early part of the year a little work was done on the Duke reef at the low level, but the ore proving to be unpayable prospecting was commenced in the higher-level section. The mine has been under protection for the greater part of the year.

Occidental Mine (W. McConnell, mine-manager).—With a view of cutting a reef worked in the lower level, the company commenced driving in the No. 3 level, but the air became foul and work had to be abandoned here for a time. A lower level was cleaned up, and a connection effected with the No. 3 level, when the ventilation greatly improved. This work will enable prospecting to be resumed at that level and also at the lower levels, where several large lodes are known to exist. Three men were employed.

Lord Nelson (James Middleton, mine-manager).—Several rich parcels of ore were mined and treated during the year, but no important works were undertaken.

Reliance.—Very little work has been done on this claim.

Claremont.—There is nothing fresh to record; the owner has felt the effects of the general depression, and his returns are considerably lower than they have been for years past.

Golden Drop.—Prospecting has been carried out on several small lodes traversing the claim, and, although favourable prospects were occasionally revealed, nothing of a payable character was found.

Ballarat.—A large amount of prospecting-work has been carried out, but so far no success has been met with.

New Dart (George Comer, mine-manager).—Early in the year three men were employed in the low level, but no encouraging prospects were encountered and the company discontinued. Since then the mine has been under protection. The winding plant was dismantled and removed to another part of the field. Tributers have been working on the surface lode outcrops, meeting with variable results.

Magnet Mine (J. W. O'Sullivan, mine-manager).—Work for the year has chiefly been of a prospecting and development character. Two levels were driven north and south on the lode, and several rises made to test the value and extent of the ore-body. The ore is heavily mineralised, and carries a little value, especially in the mineralised veins. At present some difficulty is being experienced with the ventilation of the mine, as a great height must be attained before a connection is made with the old workings. These workings gave good returns in the past, and the reef which was then worked is now being driven on in the low level. The mine was examined several times during the year. Four men were employed.

Day Dawn and Norfolk Mines (W. T. McCormick, mine-manager).—The company confined much of their attention to the undeveloped portion of the property. Stoping on the hanging-wall portion of the Sunbeam lode proved the ore to be low-grade. From the No. 1 west level a crosscut was driven for a distance of 180 ft. south, where the lode was met with. Near the point of intersection a rise was commenced, and at a height of 70 ft. a connection was made with a winze sunk 90 ft. below the upper-level floor. This greatly improved the ventilation and will give better facilities for handling the ore. From the rise intermediate levels were driven north-east and south-west along the course of the lode, which proved that the lode is much broken and faulted, the lode being from 5 ft. to 10 ft. wide, with irregular values. About 100 fathoms of the lode was stoped out for a return of £1,200. The ore-bodies as a whole proved to be low-grade, better values being met with in the form of pipes. The in-by section of the battery-level tunnel, which had been in disuse for some time, has been cleaned up and repaired for a distance of about 2,000 ft. northwards of the Sunbeam workings. The level has been driven a further distance of 100 ft. on the City of Dunedin lode, which is 6 ft. wide at that point. The Charter Section: From the lode in the upper level ore of good values was won, but the condition of the drives and passes was such that a large expenditure would be necessary to keep them open; consequently, it was decided to work the remaining ore from the lower level, and for that purpose a drive will be constructed from the City of Dunedin reef and the ore-body tested. Eight hundred and twenty-seven tons of ore was treated for a return of £1,200. Ten men were employed. The mine was examined during the year and found to be in good order.

Southern Queen.—Work has been carried on in the No. 2 level on the Atlantic reef, which is well defined. A rise was made connecting Nos. 1 and 2 levels, which greatly improved the ventilation. Six men were employed.

West Coast Mine.—Very little work has been done on this claim.

Trafalgar.—The main level crosscut has been extended some distance without anything of importance being disclosed.

Progress Syndicate.—This syndicate has reopened some old drives in the locality of Karaka Creek, and commenced prospecting both in the mine and on the surface, meeting with unsatisfactory results. Subsequently operations were suspended. Two men were employed.

Weymouth Claim.—During the past year a new adit level was started with a view to cutting a new lode said to exist on the property. As the work proceeded nothing of importance was revealed, and very little has been done since.

New Sylvia (F. Stone, mine-manager).—Operations have been confined to the low level, which has been driven a total distance of 1,706 ft., and a reef 6 ft. wide intersected. The ore is heavily mineralised, and is said to carry good values. This lode has been driven on north and south 93 ft. and 53 ft. respectively, and retains its width for the whole distance. There is a large block of ore available for stoping between the low level and the floor of the old workings, 180 ft. overhead. The length of the block has not been ascertained. The ore is a sulphide, and will require special treatment. The mine was inspected during the year, and everything found to be satisfactory. Nine men were employed.

Watchman (G. A. Hill, mine-manager).—There are several well-defined ore-bodies running through this property which have been driven on and tested, but found to be disappointing. The Windfall reef is the largest of these ore-bodies, and most attention is confined to it. One hundred feet was driven on the line of reef in an easterly direction. The reef is very wide, with ribs of payable ore running through it, but generally speaking it is poor. A little work has been done on the No. 1 and Silver Crown lodes, but the results met with were not encouraging. Five men were employed.

Halcyon Mine.—Two men were employed in an old drive on a reef, and were meeting with good prospects. A low level was driven to enable the lode to be worked more economically, and it was estimated that about 250 ft. of driving would intersect the lode. This will give better means of ingress and egress, besides improving the ventilation.

Bonanza Mine.—The claim is situated near the Shellback Creek, adjoining the Waitangi Company's ground. Operations for the year have chiefly been of a prospecting character. A drive was driven a total distance of 700 ft. through good altered andesite rock, but no reefs were met with. Several small quartz stringers were cut through, but they were of little value. Late in the year the company applied for protection, which was granted. There has been some talk of the Bonanza Company amalgamating with the Waitangi Company, the intention being to drive a low level from the shores of the Thames Gulf—a very commendable proposition if carried into effect, because the ore-bodies would be proved at a greater depth than has hitherto been attempted. The total amount of driving estimated to make a connection with the Waitangi workings is 2,000 ft. This would provide ample means of ventilation, and also allow the prospecting of any lodes discovered.

Otanui Mascotte.—Operations are being conducted at a depth of 104 ft. The owner is driving under the old workings on the Eureka reef, from which gold was obtained a few years back. A crosscut has already been driven a distance of 380 ft., and some 200 ft. yet remains to be driven before the reef is reached.

Dixon's Consolidated.—The property situated in Tinker's Gully was formerly a part of the Norfolk Gold-mining Company's ground. The present owners, after cleaning and repairing the old drive and repairing a rise for the establishment of ventilation, commenced driving a level with the hope of cutting one or more of the reefs outcropping on the property. So far nothing of importance has been met with. Four men were employed during the year.

Temple Bar.—A considerable amount of prospecting has been done on the reef at the low level, and a connection made with the higher level by a rise, which has greatly improved the ventilation. The ore, however, is low-grade, and late in the year the company closed down owing to the lack of sufficient capital.

Scandinavian Mine (W. Goldsworthy, mine-manager).—A fair amount of work of a prospecting character has been done on Lowrie's reef at a lower level than was attempted during previous years, and a connection effected with the old mine-workings. The reef has been driven on north and south for a distance of 200 ft., the width of the lode varying from 5 ft. to 12 ft. The ore looks promising, but so far nothing payable has been disclosed. The mine was examined during the year, and found to be in good order.

Waitangi Consolidated (W. J. Adams, mine-manager).—At the low level the main reef was driven on for some distance; a rise is now being made to connect with the No. 2 (upper) level. In the drive and rise some fine telluride ore was met with, and picked stone showing free gold was also noticed and secured. The mine was examined during the year, and everything found to be satisfactory; the ventilation, which is induced by means of a water-blast and a line of pipes, was fair.

Mahara Royal.—This property was abandoned during the year, and the winding plant removed to another part of the district.

Waiomo.

Monowai Mine (William Cook, mine-manager).—This claim was formerly held by Mr. H. H. Adams, and, prior to the Ferguson Syndicate acquiring an option over it, was under protection. After carrying out a certain amount of systematic prospecting and testing samples of ore from a well-defined reef from which the old company secured valuable ore in the surface levels, the syndicate purchased

the property and is now preparing to work the mine on up-to-date lines. The syndicate has just completed the erection of an ore-smelting plant at Waiomo, and it is claimed by them that the process adopted will be successful in the treatment of refractory ores. A small parcel has already been sent to the smelter, and the result will be awaited with interest, as it will determine in a measure the suitability of treatment. Twenty-nine men were employed.

Mount Zeehan.—A little prospecting-work has been carried out, and several contracts for driving let. The results have not been encouraging. Eight men were employed.

Sheridan Mine, Tapu.—Practically no work has been done on the claim for the year, it being held by one man, who devotes but little time to it. Other mines have been worked in this part of the district in past years, but they have been abandoned.

Kapowai Mine, Gumtown (Richard Tierney, mine-manager).—The Kapowai lode is a large formation intersected by numerous quartz veins and clay seams. At the lowest level on which the lode has been operated it is well defined and carries fair values. To intersect the lode at a greater depth a level has been started below the level above mentioned, and already driven a distance of 500 ft., leaving only 120 ft. to be driven to reach the reef-formation. It is the manager's intention to continue the low level until the lode is cut, when it is hoped that payable ore will be mined. The company treated 588 tons for a return value of £1,322 9s. 4d. Eight men were employed.

Kirikiri Mine (D. Loughlin, mine-manager).—During the year the Horseshoe reef was intersected by a crosscut in the low level and driven on for about 350 ft. It appears to be the intention of the company to continue to drive on the lode until a point is reached immediately under the old work, where good results were once obtained. Then a connection may be made by a rise through the lode. There are other lodes on the property which may also be prospected at an early date. One fatal accident occurred at this mine through a fall of ore from the back of the level near the working-face. The occurrence was quite accidental.

Last Shot Mine, Omahu (S. G. Baker, mine-manager).—A shaft was sunk to a depth of 60 ft., and disclosed encouraging prospects. A winding plant was then erected, and preparations made for resuming the work of sinking the shaft. A winze was sunk on the lode, but it only proved that the lode had pinched out. This unfortunate discovery led to the closing-down of the mine towards the end of the year. A hundred and fifty tons of ore was treated for a return value of £340 8s. 7d. Ten men were employed.

Miner's Right Claim, Puriri.—Prospecting has been confined to the lode-outcrops, from which 25 tons of ore was mined and treated for a return value of £131 17s. 10d.

Auckland Mine.—There is nothing to report from this mine, as little or no work has been done during the year.

Champion Mine.—Since resuming operations much work has been accomplished. The No. 1 level was driven through broken country for 900 ft., when the Champion lode was cut. This lode is ill defined, partaking more of the nature of a pipe-vein formation of loose gravelly quartz. A rise has been made on the lode formation from No. 1 level to the surface, thus ventilating the section. A low level (No. 2 level) is now being driven to cut the lode at 100 ft. below the No. 1 level. This mine was inspected from time to time and found to be in good order. During the prosecution of mine-development the company erected a stamp-mill which will be driven by a gas-engine, and has also constructed two water-races. It was found that several adjustments were necessary in the machinery. These alterations have now been made, and it is anticipated that no further delay will be occasioned by similar interruptions. During the year, 400 tons of ore was treated for a return of £159. Twenty men were employed.

Champion North Mine.—The mine has just been opened and surface prospecting started, which has resulted in the location of lode-outcrops. A level was then driven for a distance of about 120 ft. to intersect the lode, which is a fine compact body of quartz. I believe it to be the intention of the company to drive a second level at a greater depth to test the lode more thoroughly. Six men were employed.

Taihoa Mine (H. Sheehan, manager).—A considerable amount of surface prospecting was done on the line of reef south of the old mine-workings, and a little loose gold obtained. A new low level was then started and driven a distance of 500 ft., cutting several reefs, but their values were very poor. In the old mine-workings a little work was done below the No. 2 level without meeting with any success. Five men were employed for the greater part of the year.

Golden Belt Mine.—The ore-bodies in the main section of the mine in the upper levels have been exhausted, and much prospecting has been done on a large ore-body outcropping on what is known as the Bluffs. Several veins have been sampled with fair results. There is a large deposit of loose ore scattered over the surface, and shafts have been sunk to test its quality, which is said to be fair. An adit level has been driven to work the deposit, and a ground tram-line laid down to connect the drive with the battery. During the year the company treated 1,405 tons of quartz for a return value of £1,044. Twenty men were employed; and the mine was in good order.

Brilliant Block (J. O'Shea, manager).—The chief operations for the year were prospecting and driving on the cap of several reefs located on the claim. Four men were employed.

Tairua Conqueror (George Birnie, manager).—A prospecting crosscut was driven a distance of 60 ft., when a reef was intersected. The reef was cut again at a lower level. A crosscut was put in a distance of 250 ft., when work was discontinued for the purpose of negotiating with the Monarch Company for extending the drive with joint aid.

Waimangu Claim.—The reefs were tested and found to be carrying low-grade ore, and the company abandoned the claim.

Tairua Broken Hills (W. T. McGregor, manager).—A great amount of prospecting and development-work has been carried on, particularly at the battery level on the No. 1 reef. Above and below

this level blocks of ore were stoped out, in all 7,000 tons, which was treated for a return value of £8,693. At the battery level another block is being opened up on the same reef. This level was driven through the No. 1 reef for a distance of about 700 ft., and several small ore-bodies cut through which will be driven on to test their values. On the Nos. 3 and 4 reefs prospecting has been done. It is the company's intention to vigorously prospect the Blucher reef in the coming year. Sixty men were employed.

Golden Hills Mine (J. Rickard, manager).—No. 1 reef was intersected in Nos. 2 and 3 levels and the reef driven on for some length. The reef at this stage was found to be from 5 ft. to 6 ft. wide, and the ore-values were very encouraging. A rise was then made to connect the two levels. There is a large block of ore between the Nos. 2 and 3 levels which looks very promising. From the south-west side of the property a level is being driven with the double object of prospecting the claim and reaching a very fine kauri bush, from which timber will be got for mining purposes. Eighteen men were employed.

Tairua Triumph (B. Barker, manager).—Three reefs have been located on the claim, and a great amount of driving was done on them. The reefs vary in width from 12 in. to 12 ft., and samples taken from them gave satisfactory results.

Uzailla (J. Patterson, manager).—Several reef-outcrops have been located and worked. A low level has been driven on the most promising reef to test its values. Five men were employed.

Tairua Dawn (D. Ryan, manager).—The company commenced operations at their mine in August last, and started a low level which, it is expected, will cut a large reef. At the close of the year, 220 ft. had been driven. Six men were employed.

Tairua Leeds (Mr. Cartwright, manager).—The company has only recently acquired this claim, on which several large reefs—locally known as Big reefs—are outcropping. An adit level is being driven to intersect one of the large lodes, and good progress is being made.

Ready Bullion (*Quartz Claim*).—No. 1 level has been driven a distance of 250 ft., when a lode was met and a winze sunk to a depth of 20 ft. No. 2 level has been driven 100 ft., and when the lode is cut there will be about 100 ft. of backs between Nos. 1 and 2 levels. Four men were employed.

Ready Bullion (*Sluicing Claim*).—The ground is covered with large boulders of quartz and quartz gravels, derived, no doubt, from the crumbling of the caps of the large reefs outcropping on the mountain-side higher up. Great difficulty has been experienced in the way of getting an adequate supply of water in the summer months. This drawback is due to the claim being situated at the head of a small stream, and also to the small catchment-area. Consequently this has much retarded mining operations. Two men were employed.

Phoenix Mine.—A shaft was sunk to a depth of 80 ft., when by means of a short crosscut the main reef was cut into and driven on its course for 100 ft. in each direction. Later a drive was started with the object of cutting the reef to prove its width : at the time of my visit nearly 100 ft. of reef-formation, with its ribs of country rock and quartz alternating, was showing. A small gas-producer plant has been erected to work the mine-pump and the winding machinery. The mine was in good order at the time of my visit. Eleven men were employed.

Luck at Last Claim.—Very little work has been done on the claim during the past twelve months. I understand that the owner is endeavouring to raise sufficient capital to test the property thoroughly. Two men were employed.

Dreadnought Claim.—The mine is situated about a mile north-west of the Phoenix property. As the claim has only recently been worked, it is still in the initial stage of development. An adit level has just been started. Two men were employed.

Minerals other than Gold.

Copper.

Ferguson's Syndicate (Thomas Herbert, manager).—I visited Knight's section of the syndicate's property, where a drive had been driven for a distance of 360 ft., resulting in nothing of a satisfactory nature being discovered, and at a point about 25 ft. from the end of the drive a winze was sunk to a depth of 112 ft., from which point a drive has been commenced. The drive and winze are in good order, both being well timbered, but the ventilation was poor. Instructions have been issued that no more work is to be done in the winze until the ventilation is improved. Another section has also been prospected with indifferent results. Four men were employed.

Hare-Ratjen Mine.—No work has been done on the claim for some time past. Mr. Hare stated that the property was under offer to a company in Australia.

Northern Copper Company's Mine.—A shaft has been sunk to test the lodes known to exist in the claim. A dispute arose between the company and the Natives with regard to a right of way, with the result that the company, failing at a settlement, was forced to cease operations, as it was rendered impossible to bring machinery and mining requisites on to the ground.

Antimony.

Lanigan's Mines (*Limited*), (L. H. Gordon, manager).—Mining has been done in adit levels driven on a large well-defined lode about 5 ft. wide and carrying fair values in antimony-ores. From time to time parcels of ore have been shipped to Australia for treatment. The results being satisfactory, the company was induced to erect a small smelting plant, which has, unfortunately, proved an utter failure. The company is prospecting energetically several sections of the property, and deserves to meet with success.

I have, &c.,

Boyd Bennie.

Inspector of Mines.

Mr. MATTHEW PAUL, Inspector of Mines, Waihi, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Inspector of Mines' Office, Waihi, 27th March, 1909.

I have the honour to present my report on the gold-mining industry in the Hauraki Mining District, together with statistics, for the year ended 31st December, 1908.

Waihi Gold-mining Company (Limited).

The following is a concise report, bearing principally on the mining operations carried out on the Nos. 8 and 9 levels, where the most important development-works have been conducted during the year.

No. 9 Level (1,000 ft.).—North crosscut from No. 5 shaft was driven to a point vertically under No. 4 shaft and extended north from this point a distance of 239 ft. At 86 ft. from No. 5 shaft the north section of the Royal lode was intersected, and followed north for 137 ft., the lode giving very little water. The crosscut is now being extended in a direct line to No. 6 shaft. At 224 ft. from No. 5 shaft the Empire lode was driven into 15 ft. without disclosing north wall of lode. A large volume of water is coming from this lode.

South crosscut from No. 5 shaft has been extended a total of 124 ft.; and at 103 ft. in, the Royal lode was intersected 16 ft. wide.

Royal Lode: A total length of 546 ft. has been driven on this lode, 256 ft. east and 290 ft. west of No. 5 shaft south crosscut. Moran Pass was connected with No. 8 level, providing better ventilation and also travelling-way between Nos. 8 and 9 levels.

No. 8 Level.—South-east crosscut from No. 5 shaft: This was advanced 151 ft. during the year, making a total of 1,451 ft. At the end of the crosscut a total of 350 ft. was bored horizontally with the diamond drill. Several stringers of quartz of no value were passed through, and boring was discontinued on account of puggy ground being met.

Royal Lode: The total length opened up on this lode is 2,111 ft. East of North Section junction the level was extended in good-quality ore from 772 ft. to 873 ft. West of same the level was extended from 653 ft. to 1,138 ft. From Edward junction to 160 ft. west the lode varies from 3 ft. to 15 ft. in width of good-quality ore.

Rex Lode: On course of lode the level was extended from 20 ft. to 65 ft. south of Royal junction. A total distance of 428 ft. was driven west of No. 5 shaft south-east crosscut, the lode being 5 ft. in width.

Empire Lode: The total length opened up on this lode is 1,510 ft., 471 ft. having been driven during the period under review. The total distance now west of No. 4 shaft crosscut is 1,005 ft., and east of same 505 ft. The western end junctioned at 1,005 ft. with the Edward lode.

Alexandra Lode: East of 753 ft. crosscut on Empire lode: This has been opened up a total length of 459 ft., averaging 6·4 ft. in width.

Reef at 226 ft. in No. 4 shaft crosscut: The level was driven westward on course of lode from 50 ft. to 104 ft., at which point the lode almost disappears. The average width is 2 ft. Eastward the level was extended from 14 ft. to 89 ft., the average width of lode being 8 in.

Edward Lode: The total length opened up on this lode is 736 ft. of which 536 ft. has been driven during the year. This lode has widened out to very large dimensions, the ore being of first-class quality.

Martha Lode: On the North section a total length of 1,464 ft. has been opened up, and stopping operations are now in progress. South section: Stoping is proceeding between No. 4 shaft north-west crosscut and No. 6 shaft crosscut. Regina section: The level was extended 80 ft. west, making a total of 596 ft. The level has been widened, and stoping is in progress.

No. 7 Level.—Royal Lode: At the west end a distance of 236 ft. was opened up during the year, making a total of 2,011 ft.

A new steel pit-head frame has been erected at No. 4 shaft. Hauling from No. 6 shaft with automatic tipping-skips was commenced during the year and has proved very satisfactory.

Shafts.—No sinking has been done in any of the shafts during the year. The depths at the close of the year are as follows: No. 1 shaft, 708 ft.; No. 2 shaft, 935 ft.; No. 3 shaft, 348 ft.; No. 4 shaft, 853 ft.; No. 5 shaft, 1,020 ft.; No. 6 shaft, 856 ft.

About 300,000 tons of filling-material has been obtained from the various filling-cuttings and deadwork crosscuts for filling up the depleted stopes underground. Nine shafts, varying in depth from 600 ft. to 700 ft., are in use for conveying this filling into the mine. The total footage driven, risen, and sunk during the year was 17,320 ft., and the total tonnage of ore crushed amounted to 393,214 tons (dry weight) of 2,000 lb. per ton. The ore was obtained in the following proportions from the various reefs worked during the year: Martha, 206,431 tons; Royal, 42,302 tons; Welcome, 43,017 tons; Empire, 42,198 tons; Edward, 37,069 tons; No. 2, 9,603 tons; Albert, 7,530 tons; Reef I, 2,665 tons; Victoria, 1,065 tons; Princess, 855 tons; Regina, 318 tons; Rex, 161 tons: total, 393,214 tons.

Reduction-works.—The tonnages crushed at the three mills, together with the totals crushed during 1907, were respectively as follows:—

	1907.	1908.
Waihi Mill (90 stamps and average of 3·18 tube mills running full time)	117,409	116,570
Victoria Mill (200 stamps and average of 6·62 tube mills running full time)	211,062	249,293
Union Mill (40 stamps)	28,503	27,351
Totals	356,974	393,214

being an increase of 36,240 tons. The total average number of stamps running during the year, exclusive of Sundays and the period at Christmas during which the mills were stopped, was 315·187 out of 330 stamps. The total average duty per stamp per diem was 4·167 tons, representing an increase of 0·373 ton per stamp per diem compared with the previous year.

Waihi Mill: Elevator-wheels Nos. 1 and 2, being too small, have been replaced in a new position with wheels of larger capacity. Adjustable nozzles have been fitted to the three main Pelton wheels in the mill, the pipe-line being removed further back from the stamps, leaving more room for the pulp-chutes, which now have to be laid to a steeper grade to carry the coarser sand. A light tramway has also been laid along the full length of the mill, making the handling of mortar-boxes, shoes, dies, &c., more convenient. Five new steel vats 25 ft. diameter by 6 ft. deep have been put in, as some of the old wooden percolating-vats were getting into bad order. A connection has been made to the main-mill shafting to drive the fourth tube mill, which was erected as a spare one, so that all four mills can be used when power is available. In the engine-room an electric generator has been erected for driving the motor in the new melthouse, which is now completed. The demand for steam having increased, the Lancashire boiler formerly driving the tube-mill plant at Victoria Mill has been removed and re-erected at Waihi Mill.

Victoria Mill: Three new elevator-wheels of ample capacity and improved construction have been erected alongside the two main wheels, which had caused trouble and delay through being overloaded. The old wheels will be kept as a stand-by. The old buddle plant, being of no further use, has been pulled down. The precipitator-room has been enlarged, fifteen new precipitators having been put in and brought into use. A direct connection has been made between the Government Railway and the boiler plant, facilitating the handling of coal. The vacuum slimes plant for removing the gold-bearing solutions from the pulp is completed, the filter-press plant now being stopped. The thirty-two tall agitator-tanks are in use, and foundations for ten more are being prepared. Producer-gas and tube-mills plant: The full number of ten tube mills have been erected, eight of which it is proposed to run full time. A 200-horse-power Crossley gas-engine drives these, together with the vanner plant and three elevator-wheels. Concentrates treatment plant: The 200-horse-power gas-engine for running this plant has been erected and brought into use.

Union Mill: The foundations for one tube mill have been prepared and are ready for the mill, which is being made at Victoria workshops. A new elevator-wheel of larger capacity is being made, and will be erected shortly. A 25-horse-power Leffel turbine has been erected to develop power from surplus water in the low-pressure system.

The mines and mills were regularly visited during the year, and every precaution appears to be taken by the management to prevent accidents, as is proved by the fact that there were no accidents of a fatal nature in the mine. At Victoria Mill, however, a man was killed through being caught in the elevator-wheel whilst repairing it. An average number of fifteen hundred men were employed during the year.

Waihi Grand Junction Gold Company (Limited).

The operations carried out for the past year are as follows:—

No. 4 Level.—South-east crosscut: This was extended a distance of 1,008 ft., making a total of 1,082 ft. from the shaft. At 210 ft. in, the No. 4 reef was cut, and has been driven on 211 ft. east and 436 ft. west. The average width of lode is 10 ft., of which 4 ft. is payable ore. At 985 ft. the first branch of No. 6 lode was intersected, and the second and third branches at 1,023 ft. and 1,037 ft. respectively. The first branch was driven on 50 ft. east and 37 ft. west, and there is a run of ore for about 65 ft. of this distance. No work has been done on the second branch. The third branch is being driven on east and west. Going east the lode is 7 ft. 6 in. wide of payable ore, and west the ore is 8 ft. 4 in. in width. This reef will be thoroughly explored during the coming year.

Martha Lode: The drive east was extended 269 ft., making a total of 788 ft. From 586 ft. to 673 ft. a new and important run of ore was encountered, the average width being 6 ft. 6 in.

The total footage driven, risen, and sunk during the year was 3,158 ft. Stoping has proceeded on the Martha and No. 2 lodes at Nos. 2, 3, and 4 levels, and on the No. 4 lode at No. 4 level. The production of ore for the year was 48,937 tons, obtained from the following lodes: Martha lode, 25,627 tons; No. 2 lode, 20,246 tons; No. 4 lode, 2,644 tons; No. 6 lode, 420 tons: total, 48,937 tons.

At the No. 1 shaft the wooden head-gear has been replaced by a 90 ft. steel lattice-work head-gear.

A new electrically driven haulage motor is being used at the surface for handling mullock, and has proved so successful that it is intended to extend the use of these motors to the underground working for hauling quartz.

The No. 1 shaft was sunk 146 ft. during the year, making a total of 976 ft. from the surface, or 32 ft. below No. 5 level. Two chambers have been cut at No. 5 level. An electrically driven Sulzer turbine pump was used in sinking operations to pump water to the reservoir supplying the Cornish pump, which lifted it to the surface.

A kerosene drill-heating furnace has been fitted up at the blacksmiths' shop, and is doing excellent work.

Battery.—The chief additions to the plant during the year consist of the installation of a 16 ft. by 4 ft. tube mill, a new tailings-wheel, and two classifying-boxes to handle the output of this mill and the 19 ft. by 4 ft. 8 in. mill formerly used for grinding concentrates. Six more of the 13 ft. by 55 ft. air agitator-tanks have been erected, making a total of eight of this size of tank in use. Four tanks, 7 ft. 6 in. by 37 ft. were put in for treating concentrates, and are now being used for slimes. Additional concentrating-tables have been installed, and important alterations have been made to the vacuum filters.

The assay office has been fitted up with a complete set of electrically driven sample-preparing machines, and also a benzine furnace.

Waihi West Section.—The shaft was put in good order and a " whip-pole " hoist, operated with a horse, was fixed up. A crosscut was driven from the shaft at 30 ft. below No. 1 level, and the reef was cut 10 ft. in. Driving east and west on the reef disclosed good ore, and this is being stoped and sent to the Grand Junction Company's Battery to be treated.

The present process consists of a system of fine grinding, by which the valuable mineral products of the ore can be ground very much finer than the quartz portion. Crushing and grinding is done in cyanide-solution; the finely ground pulp is agitated in air agitation-tanks, and is then filtered by the vacuum filters, all the recoverable bullion being obtained by the one process. A six-months' experience of this process has demonstrated its extreme simplicity and its suitability for the ore, as the extraction has been substantially increased.

Two fatal accidents occurred during the year, one at the mine, caused by a fall down a pass, and the other in the air-compressing room, the sufferer being caught in the crank-shaft of the air-compressor.

Waihi Extended Gold-mining Company.

The shaft was sunk a further distance of 160 ft. below No. 4 level, and a chamber cut out for the No. 5 level at a total depth of 956 ft. from the surface. Crosscutting to intersect the No. 1 or Martha lode is in progress, and the development of the No. 2 lode at this level will be proceeded with.

No. 4 Level.—The No. 2 lode has been driven on up to the western boundary.

An intermediate level has been opened up between Nos. 3 and 4 levels for a length of 140 ft., disclosing payable ore for the greater part of this distance.

The company are installing an air-compressor and rock-drilling plant, part of which is on the ground, to facilitate the opening-up of the lower levels. It is expected that the plant will be running in the course of a few months.

Waihi Consolidated (Limited).

No work has been done on this property for the past twelve months. The syndicate has so far failed to float the property in London.

Waihi Gladstone (Limited).

Practically no work has been done during the year. It is the intention of the company to procure a Government drill immediately one is available to prospect the property.

Waihi-Paeroa Gold-extraction Company (Limited).

New machinery has been installed, and considerable work done in this dredging claim during the year. The mode of treatment is regrinding the sands and treating with cyanide. The average number of men employed during the year was thirty.

Waihi Beach (Limited).

Owing to a sudden inrush of water comparatively little development-work has been carried out at this mine. To cope with this water a new 90-horse-power boiler was installed, and a vertical sinking-pump obtained which will be installed when it arrives in March next. Pumping operations will then be resumed, and the work of intersecting the main reef will be pushed forward without delay.

Waitekohe Syndicate (Eliza).

Very little work has been done during the year. A Government subsidy of £150 at the rate of pound for pound was granted in December to assist in driving 230 ft. in the present tunnel, for the purpose of intersecting the surface formation in which gold was seen.

OWHAROA.

Rising Sun Mine.

During the year a gas-engine was erected, and the reef was well prospected from the bottom of the winze, with encouraging results. It is now intended to drive an adit from the road level, which will give considerable backs and greatly facilitate the handling of the ore.

WAITEKAURI.

New Waitekauri.

The work during the year has been principally confined to stoping between the Horn and Queen levels. Two hundred and ninety-five tons was treated for a return of bullion valued at £625 0s. 2d. An average of seven men have been employed.

Maoriland.

The operations at this mine during the year have been principally confined to prospecting, but nothing payable has so far been discovered. The work in progress consists of driving a crosscut to intersect the Young New Zealand reef. Subsidies amounting in all to £350 have been granted by the Mines Department to assist this company. Two men have been employed.

Golden Cross.

The principal work carried out during the year has been the retimbering of the main crosscut, repairing the level on the hanging-wall lode, and stoping. A trial parcel of 246 tons was treated at the Waitekauri battery for a return of £450. The average width of the reef is 3 ft. Eight men were employed during the year.

Durbar Mine.

A considerable amount of work has been done in the upper levels, and, although by assay the ore proved to contain payable values, when sent to the mill for treatment the result proved disappointing. The mine is now under protection. An average of two men were employed during the year, and 83 tons of ore was treated for a return of £135 3s. 7d.

New Zealand Jubilee Mine.

The work done in this mine has been entirely of a prospecting nature, and consisted of 150 ft. of driving and 90 ft. of rising. Fifty tons of ore have been broken out ready for treatment, the average value by assay being £6 per ton. An average of three men have been employed during the year.

Scotia Claim.

This claim consists of 25 acres, and is owned by Grace Bros. A reef which was located in prospecting has been driven upon for 100 ft., and a winze sunk 30 ft., the lode averaging 3 ft. in width. Three chains of ground-tram and an aerial tramway 800 ft. long have been constructed, which greatly facilitate the handling of the ore. Forty-seven and a half tons of ore was treated for a return of £88 6s. 11d.; and an average of four men were employed during the year.

OHINEMURI COUNTY.

Talisman Consolidated (Limited).

Considerable development was carried out in the Nos. 11 and 12 levels during the year. On No. 11 level it is proposed to continue the south drive, and the crosscut already started east and west to be pushed forward vigorously. At No. 12 level the south drive was advanced 350 ft., and is nearing the point where it should intersect the Dubbo ore-shoot, which it is proposed to thoroughly develop.

No. 13 Level.—The south drive was extended 260 ft. through high-grade ore. Owing to the New Zealand Crown Mines stopping their pumps, this level became flooded in August, and has remained so pending the erection of additional pumping plant capable of dealing with the increased amount of water. It is expected that the plant will be available in the latter part of January, when the unwatering of the level will begin.

A Riedler compressor with a capacity of 3,100 cub. ft. of free air per minute has been erected during the year, also four Babcock and Wilcox boilers and a 100-kilowatt generator, to supply power to the mine.

It is proposed to install during the coming year at the Woodstock shaft a Cornish pump of sufficient capacity to handle all the water that may reasonably be expected. It is proposed also to sink this shaft considerably deeper, and from it develop the northern section of the mine.

Tube mills, air-agitators, and vacuum filters are to be added to the treatment plant during the ensuing year.

Three fatal accidents occurred in this mine during the year, two men being killed by a blasting accident, and another by falling down the shaft. No blame was attachable to the management in either instance.

New Zealand Crown Mines (Limited).

The main shaft has not been sunk during the year, owing to the stream of water cut in the No. 5 level keeping the pumps working to very nearly their full capacity.

No. 5 Level.—South of the main incline shaft this level was extended 199 ft., making a total of 2,293 ft. In the winze sunk from this level there is no decrease in the quantity of water flowing, and the water continues to give off sulphuretted-hydrogen gas. The south-east crosscut was extended 428 ft., making a total distance of 566 ft., and a reef believed to be the New reef was intersected and driven on 69 ft.

No. 4 Level.—South of the main incline shaft the level was extended 199½ ft., making a total distance from the shaft of 2,348 ft.

Workings on New Reef.—Waitawheta level south of the south-east crosscut: The level was advanced 301 ft., making its total length from the crosscut 1,048 ft. In Nos. 1, 2, 3, and 4 levels the drives were all advanced during the year.

Two electrically driven duplex pumps have been procured, and will be installed at the main shaft. The power will be transmitted from a station close to the reduction-works, and during a considerable portion of the year water-power will be utilised to generate electricity, and when water is unobtainable the engine and boilers which are being supplied will be employed. The plant will be capable of pumping, in two stages, 1,135 gallons per minute from a depth of 1,000 ft. Pending the erection of the pumping plant, operations at the mine have been suspended.

During the year a man died from the effects of blood-poisoning caused by a rusty nail running into his leg whilst removing slabs in the workings.

Dominion Mine.

This company commenced operations, chiefly of a prospecting character, in the early part of the year. Several outcrops of reefs were discovered on the surface by trenching, and assayed well. In order to test these reefs at a greater depth, a low level was driven a distance of 348 ft. It is expected to intersect the reefs at about 750 ft. in. An average of four men were employed.

Shotover Mine.

This property is situated about a mile from the Township of Karangahake, and adjoins the Talisman, Comstock, and Dominion properties. Development-work was started in June, and an average of five men have been employed since. A low level was put in with the object of locating the reef from which good prospects had been obtained on the surface by the previous owners. The level is now in 490 ft., and about 200 ft. more will need to be driven. At 330 ft. in, a rise of 80 ft. was put through to the surface for ventilation purposes.

Silver Hill Mine.

This claim adjoins the eastern boundary of the Talisman Mine. A good deal of prospecting-work has been carried on during the year, and several reefs located, some of which give high assay values. An average of ten men were employed. The mine is at present under protection.

Comstock United.

The work in this mine has been chiefly confined to the continuation of the drive on the main reef, which is about 14 ft. in width, encased in an improving class of country as the drive advances towards the belt of country from which the Talisman is procuring highly payable ore. Better results are expected.

Work in the main crosscut has been greatly retarded owing to a big flow of water coming from the face, which seems to indicate the near presence of a large body of ore.

The average number of men employed during the year was five.

Karangahake Mine.

Work for some time has been confined to the Taukani section. A low level has been driven a distance of 550 ft., and two reefs intersected, No. 1 being 12 ft. in width, and No. 2 10 ft. No. 1 reef assayed from 16s. to £1 per ton. No assays have been taken of No. 2 reef, but fair prospects of gold can be obtained by panning. It is intended to continue the crosscut a further distance of 240 ft., and when this is done the various reefs will be vigorously prospected. Twelve men have been employed during the year.

KOMATA.

Komata Reefs (Limited).

The development-work during the year consisted of 1,213 ft. of driving, rising, and sinking.

No. 5 Level.—The drive was extended northwards on the No. 2 reef 186 ft., making a total of 478 ft. north of the shaft. The reef proved to be 4½ ft. in width, of an average value of £3 per ton.

No. 6 Level.—North on the No. 2 reef the drive was advanced 262 ft. from the shaft. From 70 ft. to 250 ft. the reef was 3 ft. in width, and the value £1 7s. per ton.

No. 8 Level.—The drive on the No. 2 reef was advanced 167 ft., making a total distance of 645 ft. north. The reef is fair-sized, but low-grade.

The total production of ore was 28,120 tons, of an average value of £1 14s. 1d. per ton. The battery crushed and treated 28,170 tons of ore, which yielded bullion valued at £44,305 14s. 2d.

Two tall tanks for agitating slimes, and a new amalgamating-room, were added during the year.

TE AROHA.

Murphy's Find Syndicate.

This claim is situated just outside the boundaries of the Te Aroha Domain, and consists of 100 acres. It is being worked by a syndicate. A crosscut has been started and is now in a distance of 160 ft. to intersect a reef, a portion of which was found in a landslip in 1880 by a Native and the late Mr. Adam Porter. Some very rich specimen stone was discovered, but the continuation of the lode has never been located. It is for this purpose the present crosscut is being driven, and it will need to be put in at least 400 ft. to thoroughly prove the ground.

Hardy's Mines (Limited).

No. 5 level has been driven 800 ft., making a total of 850 ft., at which point the Hero reef was intersected and a rise of 20 ft. put up with the view to connect with No. 4 level for ventilation. An average of ten men have been employed.

Waiorongomai Mines.

The work done during the year has consisted of prospecting at various points on this property. At about 1,100 ft. above sea-level the Bonanza lode 3 ft. wide was met with in crosscutting, giving good values. Seven men are employed.

Bendigo Mine.

This claim is situated on the eastern side of Te Aroha Mountain, in the Waiorongomai Creek. Mining operations are principally confined to the Silver King reef, which is 8 ft. in width. The foot-wall portion assays £3 19s. 1d. per ton, and the manager considers the prospe ts are encouraging.

Coromandel.

Four-in-Hand.

This mine is owned by Holgate and Allison. Work has been confined to sinking a winze below the intermediate level and stoping a block on a small leader south of this winze. Good picked stone was obtained, and it is the intention of the owners during the present year to resume work at the lower level.

Royal Oak.

Th operations in this mine have been more of a prospecting character, but recently the directors decided to explore the reef east of what is known as the "hard bar." The prospects met with are encou aging, and good picked stone has been obtained. Fifteen men were employed, and 4½ tons of ore and 420 lb. of picked stone were treated for a return of 374 oz. 10 dwt., valued at £979 10s.

Tokatea Mine.

An average of five men have been constantly employed prospecting on small leaders, but the results up to the present have not proved satisfactory.

Monte Christo Mine.

The Day Dawn reef was intersected in the low level during the year, but no gold was seen. Rising is now in progress to prove how far the gold met with in the upper levels comes down. Four men have been employed.

Kapanga Mine.

The work at this company's mine during the past year has been confined to pumping operations and tributing. The existing company is a reconstruction of the old Kapanga Gold-mining Company, and it is proposed to free the mine of water and resume work at a depth on gold-bearing lodes known to exist there, and which were being operated on when the English company ceased to develop same.

South Kapanga.

A considerable amount of work has been done during the year in this mine—320 ft. of rising and driving at the low level, and also a large amount of surface prospecting. Although the mine is situated in a good locality, nothing of value has been discovered.

Success Mine.

This mine is owned by Messrs. R. Chase Morris and Co., Wellington, and some rich gold has been obtained in small leaders. The prospects at the time of my recent visit were favourable. Five tons of ore and 5 lb. of picked stone were treated for 75 oz. 14 dwt., valued at £205 0s. 9d. Two men were employed.

Hauraki Freehold.

During the early part of the year the unwatering and drainage of the mine was taken in hand by a small party of men who had the mine on tribute, but the tribute was subsequently surrendered. Twelve loads of ore was crushed for a return of 12 oz. 4 dwt., valued at £29 4s. The mine has again been let on tribute, and operations are confined to the surface portion of the Hauraki North section, with payable results.

Old Hauraki.

A considerable amount of work has been done in this mine during the year, consisting of cleaning up and repairing levels from 400 ft. upwards, with a view to developing the different lodes worked with good results in those levels. At different points picked stone has been met with, but not in sufficient quantities to reimburse the shareholders. Sixteen men were employed, and 229 tons of ore was treated for 265 oz., valued at £788 5s. 6d.

Golden Pah.

Five men have been employed by this company during the year, but operations have been confined to the surface portion. Seven tons of ore and 6 lb. picked stone were treated for 17 oz. 6 dwt. of gold, valued at £52 11s.

Tangiaro.

This claim is situated on the foreshore of Coromandel Harbour, at Preece's Point. Fair prospects were met with on the surface, and a shaft was sunk to a depth of 60 ft. and a suction-gas engine was erected to drive a pump, but although a considerable amount of driving was done nothing of importance was met with. Work is now confined to the surface portion, driving on the Golden Shore reef. An average of six men have been employed.

Coromandel Mines (Limited).

In July last operations were started on this claim, situated at Pukewhau Tiki, and three levels have been opened up. The lode varies from 1 ft. to 3 ft. in width, and is composed of highly mineralised ore. Five men were employed.

Prospecting.

A total of forty men have been engaged prospecting, receiving Government aid, at Tokatea, Waikoromiko, Cabbage Bay, Paperoa, Kennedy's Bay, Manaia, Tiki, Mercury Bay, and Kuaotunu, and, although a large number of reefs have been given a good trial, the results have been most unsatisfactory, and with one exception the quartz did not contain sufficient gold to warrant the expense of sending to the battery for treatment.

KUAOTUNU.

Mountain King.

This company commenced operations in March by sinking a winze to prove the value of the lode in the bottom of No. 1 level. This proved satisfactory, but owing to the heavy influx of water it was decided to drive a low level. At 650 ft. the reef was intersected, and the prospects are encouraging, gold being freely seen.

Handsworth.

This claim is owned by Woodcock and Wilson, the area being 8 acres. The leaders which contain the best ore vary in thickness from ½ in. to 2 in., and rich pockets of specimen stone are frequently met with. Four tons of ore and 89 lb. of picked stone yielded 166 oz. 2 dwt. gold, valued at £402 15s. 9d.

Otama.

This claim is owned by John Vernon, who has with assistance from the Mines Department done a good deal of crosscutting and driving on different leaders on the property. Although a little gold has been seen, none of the ore has been treated.

Moewai.

This mine is situated about eight miles from Mercury Bay. In the early part of the year a 10-head stamp-battery and two berdans were erected, driven by a suction-gas engine. One hundred and seven tons was treated for a return of 72 oz. 15 dwt., valued at £155 0s. 4d.

GREAT BARRIER.

Barrier Reefs.

On this property a prospecting-drive has been driven 782 ft., 340 ft. of which was done during the past year, also 60 ft. of rising and 65 ft. of sinking a grass shaft for ventilation purposes. Several reefs varying in width from 18 in. to 11 ft. have been intersected, and all of them contain gold and silver, but not in payable quantities.

Ngatiawa Mine.

Six men have been employed at this mine driving upon the reef at the low level. No ore has been treated during the year.

Sunbeam Mine.

No work has been done on this propery during the year.

I have, &c.,
MATTHEW PAUL.
Inspector of Mines.

Messrs. A. H. RICHARDS and A. WHITLEY, Inspectors of Mines, West Coast District, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Inspector of Mines' Office, Reefton, 31st March, 1909.

We have the honour to report as follows on the gold-mines in the Marlborough, Nelson, and Westland districts, for the year ended 31st December, 1908 :—

QUARTZ-MINING.

BLENHEIM.

Wairau Valley Gold-mining Company (Limited).—The payable ore in the upper sections of the mine having been practically exhausted, operations are being directed to developing the reef at a lower level. For this purpose a contract has been let for driving a crosscut, which will give 250 ft. of backs on the reef. During the year 120 tons of quartz was treated for a yield of 58 oz. gold, valued at £225 3s. 9d. An average of five men have been employed.

Mount Patriarch.—A few men are engaged prospecting in this locality, but no work of an extensive nature has yet been undertaken.

COLLINGWOOD.

Taitapu Gold Estates.—Development-work at the Sandhill section having resulted unsatisfactorily, the company ceased gold-mining operations in the early part of the year. Work on the property is now being directed with the view of ascertaining the extent of the coal-area by diamond drilling.

Golden Blocks.—During the year the principal development-work undertaken was the sinking of a winze below No. 3 level. Considerable difficulty was experienced in carrying on this work, owing to the increasing flow of water as depth was attained. At 40 ft. sinking was discontinued, and drives projected north and south on the reef-track. The company's efforts in this direction have so far not proved successful. Stoping operations on No. 2 intermediate and Nos. 2 and 3 levels have been pro-

ceeding steadily. One thousand seven hundred and fifty-seven tons of ore was mined and milled, yielding 1,516 oz. gold, valued at £5,482. An average of twenty-four men were employed.

MOTUEKA.

Dominion Gold-mine, Mount Arthur.—R. E. Clouston and party have taken up the old Gridiron Company's ground, and are prospecting a reef-outcrop, which where exposed gives good prospects. Four men are employed. Other leases have been taken up in this locality, on which reefs are known to exist, but no work is being done to prove them.

WESTPORT.

Red Queen, Mokihinui.—This mine is being worked on tribute by George Avery and party (three men). Operations are confined to stoping a block on the Red Queen reef. During the year 100 tons of quartz was crushed for a yield of 97 oz. 18 dwt. 2 gr. gold, valued at £384 6s. 1d.

Britannia.—The old level in the Early Bird section was extended 130 ft., and a block of stone 4 ft. in width intersected, which by battery treatment gave a return of 6½ dwt. per ton. This block of stone does not appear to live over the level. Two hundred and forty-one tons of quartz was treated, yielding 75 oz. 19 dwt. gold, valued at £294 14s. 10d. An average of three men were employed.

LYELL.

New Alpine Gold-mining Company.—The main shaft has been sunk 112 ft., a chamber formed, and the new level (No. 14) driven 226 ft. Total drivings for the year aggregate 327 ft., rising 25 ft., and sinking 211 ft. One thousand one hundred and fifty tons of ore stoped and milled yielded 225 oz. 11 dwt. 3 gr. gold, valued at £865 16s. 10d. Improvements and additions to plant comprise the installation of a new winch and water-hoist at the mine, and two Wilfley concentrating-tables at the battery. The company proposes thoroughly opening up the lode from the new level, when, if results prove satisfactory, further improvements to the battery are contemplated in the direction of erecting tailings-elevator, plant for treatment of concentrates, and new water-race. An average of twenty-five men were employed.

BOATMAN'S.

Welcome.—G. Pettigrew and party were granted a subsidy of £75 towards driving 300 ft. of tunnel to prospect for the continuation of the old Welcome line of reef. Their efforts in this direction have so far proved unsuccessful.

Golden Arch.—This mine, formerly the Buller United, was taken over during the year by the Golden Arch Gold-mining Company, who have erected a 10-head stamp-mill and cyanide plant. Work in the mine is directed principally to stoping a block over the low level, while driving this level south on the reef is also proceeding. From the different works in hand it is expected to secure sufficient ore to maintain regular crushings.

Just-in-Time.—This old mine has recently been taken up by Coughlan and party, who are at present conducting prospecting operations from the surface levels.

Caledonian United Gold-mining Company.—During the year this subsidised shaft has been sunk to a depth of 250 ft. The work has been difficult and costly, owing to the heavy inflow of water. The contract price for the last 70 ft. sunk was £8 per foot, the company having to provide timber at a cost of £1 2s. per foot. To cope with the water, a 3 in. Tangye pump, with the necessary steam-power to work it, was installed by the contractor. It is intended to sink a further 45 ft. before opening out to drive for the reef.

Reefton Prospecting Association.—A subsidy at the rate of £1 for £1 up to £100 was granted to the association. Two men have been engaged in prospecting the country in the vicinity of Boatman's and Raglan's Creeks. Several reefs have been discovered, but they have so far proved barren.

REEFTON.

Progress Mine.—Development-work has been directed chiefly to Nos. 10 and 11 levels, and a large body of ore has been disclosed on the latter over the Left-hand drive, the full extent of which has not yet been determined. The total driving and crosscutting amounts to 1,665 ft., and sinking and rising to 254 ft., while prospecting by means of diamond drilling was carried out to the extent of 2,448 ft. Stoping has been carried out generally from Nos. 6, 7, 8, 9, 10, 11, and also from below No. 11 level, but the grade of the stone has unfortunately shown a considerable decrease as compared with that of previous years—so much so that during a part of the year it was considered advisable to run only forty stamps. The battery crushed 48,500 tons, yielding by amalgamation 11,837 oz. bullion, valued at £48,754 18s. 7d. Thirty-four thousand four hundred and twenty-six tons of sands were treated at the cyanide-works, yielding 3,649 oz. 16 dwt. bullion, valued at £9,544 4s. 11d. The concentrates produced during the first half of the year were shipped to the smelter, realizing £2,947 18s. 6d., but have latterly been stacked for treatment at the company's smelter, now in course of erection. A Merton Mechanical Furnace is being installed for treating concentrates and pyritic slimes, and if the process works out satisfactorily on a large scale, it should benefit this district greatly, as other companies producing refractory concentrates could dispose of them to the Progress Mine, and save the expense of shipping to foreign smelters. During the coming year it is intended to vigorously conduct prospecting operations from No. 11 level, with the purpose of locating the continuation of the ore-body. The temperature of the mine-workings at No. 11 level, 1,426 ft. from brace, taken at 3.30 p.m. by wet- and dry-bulb thermometer gave—dry-bulb reading, 67·5°; wet ditto, 66°: in the shade at surface—dry-bulb, 71°; wet ditto, 62°. An average of three hundred men are employed.

Wealth of Nations.—The chief points at which development-work was carried out during the year are as follows: No. 8 foot-wall crosscut was extended to the small foot-wall reef, and the reef driven upon a total distance of 132 ft.; a rise was put through from No. 9 to No. 8 level, and a connection made between these levels on this reef. No. 10 main drive was extended 200 ft. south, but practically no stoping-ground was opened up, the stone encountered being of narrow dimensions and low in value. This level will be further extended to explore the country to the south. The foot-wall crosscut at this level has been driven 152 ft. and the foot-wall reef intersected. No. 9 main drive was extended and a short block of stone located. At No. 7 level a considerable amount of prospecting-work has been done in the hanging-wall country with the object of trying to locate the Energetic body of stone, but without success. In all 1,233 ft. of development was carried out during the year. The quartz required for the battery was produced principally from the stopes over Nos. 7 and 8 levels, while a small quantity came from No. 9. During the period under review 13,479 tons of quartz was crushed, which yielded by amalgamation 4,287 oz. 10 dwt. gold, valued at £17,725 1s. At the cyanide-works 11,920 tons was treated for a return of bullion valued at £8,357 0s. 3d. Development-work for the coming year will include sinking the main shaft for another level (No. 11). At the battery extensive alterations in the direction of remodelling the treatment plant have been in hand, a tube mill (16 ft. by 4 ft.), five B. and M. tall tanks, and a vacuum basket filter plant are being installed. When completed it is expected the tonnage will be doubled. To obtain power for the increased machinery the head-race has been regraded and the tail-race brought in at a lower level, thereby giving an additional 60 ft. head at the main Pelton. The temperature of the mine at No. 10 level, 1,736 ft. from brace, taken at 3 p.m., gave—dry-bulb reading, 70°; wet ditto, 69°: in the shade at surface—dry-bulb, 71°; wet ditto, 59°. An average of seventy-five men were employed.

Golden Fleece.—In the early part of the year operations were carried on by the company, who, owing to the small size of the reef and the low-grade stone coming to hand, suspended milling operations and directed their attention to developing No. 15 level, to which point an incline shaft had been sunk from No. 14 level. As No. 15 did not open up well it was decided to let the property on tribute, and Messrs. J. Oates, N. Lawn, and party started work in August: since then they have crushed 1,386 tons of quartz for a return of bullion valued at £2,464 1s. An average of twenty men are employed.

Keep-it-Dark.—Development-work during the year consisted of 1,339 ft. of driving, rising, and crosscutting. An intermediate level driven from 55 ft. below No. 5 north intersected a large body of stone, which in a length of 70 ft. of driving has maintained an average width of 8 ft. 6 in. This block of stone has also been cut in No. 7 level, while driving is also in progress to locate it at No. 6 level. A crosscut is being driven from No. 7 level towards a blind shaft in the old workings, where it is expected some payable blocks of stone will be met at a depth of 130 ft. lower than any previous workings in this section of the mine. Stoping has been carried on from Nos. 5, 6, and 7 levels. In stoping the 180 ft. block over No. 7 the results attained were not satisfactory, considering the prospects met with while driving the level. Timbering and all requirements for the safety of the workmen have been attended to. Development-work proposed for 1909 will comprise driving the crosscut from No. 7 level and making a connection with the old workings, also sinking on the 180 ft. block of stone below the same level. The temperature at No. 7 level 1,074 ft. from the brace taken at 10 a.m. gave—dry-bulb reading, 65°; wet ditto, 63·5°: in the shade at surface—dry-bulb, 65°; wet ditto, 57°. An average of sixty men were employed. A total of 13,170 tons of ore was mined and milled during the year, yielding by amalgamation and cyanide 3,775 oz. 15 dwt. bullion, valued at £14,058 13s. 4d.

Golden Point.—Two men were employed stoping and sinking on a 3 ft. reef. A hundred tons of ore broken out and treated gave a return of 16 oz. 5 dwt. gold, valued at £61.

New Ulster (late Phœnix).—This property was taken over by the present owners in February, and the principal work undertaken has been the extension of No. 2 level south on the reef a distance of 516 ft. This level is to be further extended 70 ft. to connect with a winze sunk from the surface 147 ft. When completed good ventilation will be secured, also improved working-facilities. While driving this level several blocks of stone showing payable prospects, but of limited extent, were passed through. The mine-workings are maintained in good order. At the battery a small cyanide plant has been installed. A hundred and forty-six tons of ore was treated, which yielded 98 oz. 17 dwt. gold, valued at £370 6s. 10d. An average of nine men were employed.

Devil's Creek.—Charles Clifford was granted a subsidy of £13 to prospect the right-hand branch of this creek. Nothing of importance was discovered.

New Big River.—Operations during the year have been attended with very satisfactory results. Since the intersection of the lode at No. 9 level (1,375 ft.) it has been driven upon a total distance of 160 ft., whilst 40 ft. of driving has been done on the reef-track in a southerly direction. The lode varied from 1 ft. to 12 ft. in width along the level, and was highly payable throughout. A rise was put up and connected with the eastern winze from No. 8 level, thereby securing good ventilation for the whole of No. 9 level workings. A winze is being sunk from the level and has attained a depth of 70 ft.: a good body of stone continued down for 60 ft., below that the reef has been broken: all the stone in this winze has exhibited good values. The stopes over this level have been worked to an average height of 63 ft., leaving approximately 90 ft. yet to work before reaching No. 8 level. In the eastern winze from the south drive a large reef-formation is being prospected. This formation carries boulders of stone and may lead to something permanent being found. At No. 8 level a good deal of prospecting-work in the way of crosscutting and driving has been done, but so far nothing of value has resulted. No. 7 level is being repaired preparatory to undertaking prospecting-work in the old stopes between Nos. 8 and 7 levels. Prospecting operations from a winze 42 ft. below No. 1 or engine level resulted in the discovery of a block of stone which is apparently a continuation of what was formerly known as Cosgrove's Block reef. This reef has been opened up for 30 ft. in length, and varies in width from 3 ft. to 10 ft. An intermediate level (136 ft. below No. 1) is being repaired, and will be driven to intersect

the reef should it live down. From the several works in progress 4,851 tons of ore was produced, which yielded 7,135 oz. 2 dwt. gold, valued at £28,926 17s. 6d., or an average value of £5 19s. 3d. per ton. At the cyanide plant 1,700 tons of tailings was treated for a return of bullion valued at £1,708 6s. 6d., or £1 0s. 1d. per ton. The concentrates saved amounted to 28 tons 14 cwt. 3 qr., and gave a return of £606 2s. Extensive alterations and repairs were effected to the winding plant. At the battery a second Wilfley concentrator was installed. During the coming year it is intended to sink the shaft a further 200 ft. for another level. The temperature of the workings at No. 9 level. 1,375 ft. from brace, taken at 3 p.m. gave—dry-bulb reading, 61°; wet ditto, 58°: in the shade at surface—dry-bulb reading, 61°. An average of forty men were employed.

St. George Extended Syndicate.—This syndicate has taken up the old St. George and Matthias claims in the Big River district. Since commencing operations a considerable amount of driving and surface prospecting has been carried out. Several reef-formations have been located which show prospects sufficiently encouraging to warrant further development. An average of four men were employed.

Big River South Syndicate.—Operations were commenced on a surface outcrop of stone. Two winzes were sunk, the stone cutting out at 50 ft. The most northerly winze was continued to a depth of 102 ft., when a crosscut was driven to the hanging-wall, revealing 12 ft. of reef-formation carrying bands of gold-bearing stone. At this stage a large flow of water was tapped, and work was suspended. The south winze was sunk 50 ft., and a crosscut driven into the hanging-wall 27 ft. without cutting anything of value. An average of five men were employed.

Kirwan and Heslop.—This party has been prospecting in the Big River district. Reefs were found, but none carrying payable values. A subsidy of £26 was granted towards this work.

Blackwater.

The Blackwater Mines (Limited).—During the year a large amount of development-work has been carried out, the total footages amounting to 2,444 ft. of driving and crosscutting and 914 ft. of sinking and rising. At No. 1 level the chamber was formed and the crosscut extended 176 ft. to the reef, which was driven upon 388 ft. north and 157 ft. south. The No. 2 (Joker) level was driven 558 ft. north on a continuous run of stone of an average width of 28 in. A lay-by 100 ft. in length was formed at the end of this drive to facilitate the handling of full and empty trucks. At a point 170 ft. south of the crosscut a rise was put through to No. 1 level, which will ultimately be continued to connect with No. 5 prospecting-winze. A rise was put up at 605 ft. south of the crosscut, which will be carried to a height of 203 ft. and connection made with No. 6 prospecting-winze. At 160 ft. north of crosscut a rise was put up and connected with the bottom of the deep prospecting-winze. In No. 3 level the south drive was extended 285 ft., and at 85 ft. from the crosscut a connection was made with the Joker level by a rise. The north drive at this level has been advanced 731 ft. from the crosscut, practically the whole of the way on stone. At 163 ft. and 345 ft. north rises were put through to the Joker level. Through communication to the surface has been effected and good ventilation secured. All workings are securely timbered and proper attention is paid to filling the stopes. At the battery crushing operations commenced in August, and up to the end of the year 9,169 tons of ore was treated for a return of 4,247 oz. 18 dwt. bullion, valued at £16,552 5s. 4d. The coarser sands were cyanided, and yielded bullion valued at £1,094 19s. 2d. A plant is in course of erection for treating slimes. The water-race has given very little trouble, but during prolonged spells of dry weather the creek falls very rapidly, and a small race is being cut which will provide a little additional power. A sawmill has been erected in close proximity to the shaft, and both at the mine and battery a large amount of building has been done to provide accommodation for the workers. An average of 180 men were employed.

Blackwater Miners' Association.—A subsidy of £100 was granted to assist in prospecting the country in the Blackwater and Snowy River districts. Three parties, each comprising two men, are engaged in the work. No discovery of importance has yet been reported.

Fry's Prospecting Area.—In addition to surface prospecting, 90 ft. of driving and crosscutting has been done, which failed to locate anything payable.

Prohibition Claim.—A Westport syndicate is conducting prospecting-work on this claim under Mr. Sidney Fry's supervision. Although £1,000 has been spent in driving and sinking, nothing of a payable nature has been discovered. A contract has been let to drive a low-level tunnel from Coorang Creek for the purpose of intersecting the Snowy and Birthday lines of reefs. An average of four men were employed.

Paparoa.

Taffy.—Curtis and party, owners of this claim, have been engaged in trenching and driving on a large reef-formation with payable results. Three hundred and twenty tons of ore was treated for a return of 110 oz. 19 dwt. of gold, valued at £442 17s. 6d. At the battery a new Pelton wheel is being installed, and the water-race replaced by one at a higher level. An average of four men were employed.

Minerva.—At this mine the surface plant and water-race is being repaired with the view of renewing prospecting operations from the shaft.

Upper Moonlight.—A subsidy of £100 at the rate of £1 for £1 was granted to R. Mitchell towards the cost of extending his prospecting-tunnel. Forty-five feet has been driven.

Westland.

Wilberforce Reefs.—The only work of importance in progress on this field is being carried out on Baucke and Fiddes's claim, where a tunnel is being driven on the reef from the north side of Grave Creek. This tunnel when extended 500 ft. will give 250 ft. of backs on the reef, and determine the existence or otherwise of payable values to that depth. Four men are employed.

Caliari and party (two men) have by surface trenching exposed a reef showing from 12 in. to 18 in. of stone with fair prospects.

Ross.—Osmers and party, who are mining a small vein by means of opencut, have had regular and remunerative returns. During the year 185 tons of quartz was crushed for a yield of 230 oz. 8 dwt. gold, valued at £931 8s. 2d. Five men were employed.

Mount Greenland.—With the exception of a little prospecting conducted by Mr. John Petrie, no work has been done in this district during the year.

General Remarks.

The returns furnished for the year by the owners of quartz-mines throughout the whole inspection district, when compared with the returns for 1907, show an increase in the number of miners employed of 138, while there is a decrease in bullion-values amounting to £376 18s. 11d., and in dividends paid of £12,575. The falling-off in the latter may reasonably be attributed to the low-grade ores at present being worked by dividend-producing mines of former years, notably the Progress and Keep-it-Dark. Pleasing features of the year's operations are the satisfactory results attending the opening-up of the deep levels at the New Big River Mine, and the entry of the Blackwater Mine into the list of gold-producers.

HYDRAULIC AND ALLUVIAL MINING.

Marlborough.

Top Valley.—Porter and party (three men) find steady and lucrative employment in sluicing the high terrace-gravels below the junction of Arm Chair and Top Valley Creeks.

Mahakipawa and Wakamarina.—Mining in these districts is now confined to small parties, who, when water is available for sluicing, contrive to make a living-wage.

Takaka.

The Takaka Hydraulic Sluicing Company.—This company ceased operations in the early part of the year, and disposed of their plant and mining privileges to Mr. Charles Campbell, who has commenced work on his own behalf. Four men are employed.

Collingwood.

Parapara Hydraulic Sluicing and Elevating Company.—The work of elevating the auriferous gravels from that section of the property known as West's Freehold is being attended with very satisfactory results. The yield of gold for the year, 1,118 oz. 14 dwt., shows an increase on the return for 1907 of 131 oz. A good supply of water is available. Ten men are employed.

Quartz Ranges.—Owing to total failure of gold, operations on this claim have been suspended.

Murchison.

The Walker Maruia Gold-sluicing Company.—Sluicing operations are being conducted under the management of Mr. M. Dwan. The introduction of an improved hydraulic winch for handling large boulders has enabled the company to profitably work this exceptionally heavy ground. The yield of gold for the year, 270 oz. 12 dwt., shows an increase on the previous year's return of 173 oz. 11 dwt. An average of six men are employed.

Hunter's Claim.—Owing to shortage of water this claim has only worked intermittently during the year.

Horse Terrace.—An average of six men are employed under the management of R. N. Richardson, sluicing from free level with moderate success.

Six-mile Sluicing Claim.—Mr. T. V. McNamara has obtained a lease of this claim, and finds employment for three men.

Buller River.

Newton Flat Claim.—Messrs. Beilby, Kane, and Clerk, owners of this claim, are working on the usual lines with fair results. A good supply of water is available under a head of 230 ft.

Preeble and Fairhall.—This party is engaged in constructing a low-level tail-race, which, when completed, will enable them to work the deep ground lying in from the river. A further subsidy of £50 was granted towards this work.

Conradsen's Claim.—Water for sluicing purposes is being brought on to this claim from Dee Creek, and, when available, remunerative returns are expected.

Ryan and Alborn.—This party have completed the construction of one and a half miles of head-race and two storage-dams. A regular supply of water for sluicing is now available.

Westport.

Bradshaw's Terrace.—Lowther and Butterworth, whose sluicing operations extend over a number of years, continue to find steady and profitable employment.

Jamieson's Claim.—This party works intermittently at driving out and crushing auriferous cement.

Giles Creek.—A few parties are carrying on sluicing operations with varying results.

Addison's.

Carmody and party (eight men).—Owing to loss of fall, sluicing operations on this claim are suspended, and work directed to extending the main drainage-tunnel and re-erecting elevating plant.

McCann and party.—An extension of the low-level tail-race has enabled this party to develop the western section of their claim with encouraging results. Four men are employed.

Neil and party.—This party having completed an extension of 400 ft. on the main drainage-tunnel, and re-erected their elevating plant, an area of ground is available for sluicing which should provide lucrative employment for several years. Five men are employed.

Milligan and party (six men).—Work is confined to crushing a deposit of cemented sand, with payable results. The battery and mining plant are maintained in good order.

Senior and party (five men).—Sluicing and elevating on the usual lines is the method adopted by this party for treating the auriferous sands.

Addison's Long Tunnel.—During the year the tail-race tunnel has been extended and the elevating plant removed and re-erected. A new face is now being opened up, from which payable returns are expected. Four men are employed.

Charleston.

Powell's Elevating Claim.—The work of elevating the auriferous beach-sands is being attended with a fair amount of success. A plentiful supply of water under a good pressure is available, thereby enabling low-grade sands to be profitably treated which would not otherwise pay.

Shetland Beach.—A number of beach-combers continue to work the auriferous black sands on this beach, apparently with satisfactory results.

Lavery and Butterworth.—This elevating claim provides steady and lucrative employment for two men.

Grey Valley.

Upper Blackwater.—Owing to inefficient water-supply, sluicing operations have not been attended with very satisfactory results.

Duffers' Creek.—D. Baybutt employs two men ground-sluicing. A water-right for an additional five heads was granted during the year, which, when brought on to the ground, will enable the work to be carried out on more extensive lines.

Orwell Creek.—J. McAuley is operating on the elevated gravels of Napoleon Hill with very favourable results.

Nelson Creek.—Although dredging is the principal form of the industry in this locality, several parties are making a living-wage ground-sluicing, while the high terraces in the vicinity of Welshman's and the adjacent creeks, which are supposed to have shed the gold so profitably worked in past years, are being prospected by tunnelling. Three subsidised parties are engaged in this work, and should they be successful in locating a payable lead a large area will await development.

Moonlight Creek.—The Shetland Consolidated Sluicing Company are conducting operations on the high terrace between Moonlight Creek and Garden Gully, but the results so far cannot be considered satisfactory. Several small parties continue to find employment in this locality.

Montgomery Terrace Sluicing Company.—This company has met with a series of misfortunes during the year. Continuous slips on the water-race and a breakage in the storage-dam have greatly hindered sluicing operations.

Healey's Gully Sluicing Company.—Work during the year has been directed to repairing the head-race, driving tunnels, and erecting fluming preparatory to resuming sluicing on the claim. Nine men are employed.

Bell Hill Syndicate.—This syndicate continue to conduct sluicing operations with moderate success. Eight men are employed.

Saunders and party, Maori Gully.—This claim has worked continuously during the year. Owing to the hard and uneven nature of the sandstone bottom, a lot of time is occupied in bringing up the deep tail-race to the working-face. The actual sluicing-time for the year did not average quite 150 hours per month, for a return of approximately 9 dwt. per hour. The breastwork of the dam in the New River has been raised 4 ft., considerably increasing its holding capacity. Gold won for the year amounted to 663 oz. 11 dwt. 4 gr., valued at £2,624 15s. 11d. An average of six men were employed.

Try Again Terrace.—A subsidy of £200 was granted to Sweetman and party to assist in driving a prospecting-tunnel 1,100 ft. This work has been completed without success: the wash in places carried gold, but not in payable quantities.

Griffith and party (two men) were granted a subsidy of £20 towards extending their prospecting-tunnel. The results attained are not very encouraging.

Barrytown.

In this district hydraulic elevation of the auriferous sands, with subsequent treatment over tables lined with miners' plush, is being attended with very satisfactory results. The Barrytown Flat and Mawhera claims, working on these methods, employ an average of about thirty men.

Hokitika.

This centre of alluvial mining still maintains lucrative employment for a large number of private parties. In several of the claims work is confined to driving out the richest portions of the auriferous drifts, and it is the general opinion that, were an efficient water-supply available for hydraulic sluicing, a large area of ground would pay handsomely, which cannot be profitably worked under existing conditions.

Hokitika Prospecting League.—The parties sent out by the league were not successful in discovering anything of a payable nature, and therefore operations have been suspended indefinitely.

Dominion Gold and Ironsand Company.—This company erected a small experimental plant for treating auriferous ironsand by electro-magnetic extraction after concentration. The results attained have not proved satisfactory.

Gentle Annie Terrace.—Irving and Acaster's subsidised tunnel has been driven 200 ft. A run of wash showing good prospects has been intersected, and hopes are entertained that, as developments extend, a payable auriferous area will be opened up.

Greeks' Creek.—A number of miners continue to make a living-wage in this locality.

Back Creek.—Maloney and party, O'Neil and party, and Dehm and party are driving crosscuts under the supervision of the Rimu Miners' Association. Assistance at the rate of 1s. 6d. per foot is granted. The length of the tunnels vary from 1,000 ft. to 1,800 ft. Ten parties comprising thirty men find steady and profitable employment. Hydraulic sluicing is adopted where water is available and the ground is suitable; where these conditions do not exist the richest portions of the ground are driven out.

Chows' Terrace. The Rimu Miners' Association's subsidised tunnel has been driven 2,396 ft., principally through firm sandstone country. A short distance yet remains to be driven to bring it under the shaft, from which good prospects were obtained. When completed, this tunnel will drain a large auriferous area.

Kanieri.—Hutchison and party (two men) are hydraulic sluicing and elevating with payable results. The enterprise shown by this party, and the success attending their efforts, has been the means of causing several parties to apply for mining privileges in this locality.

Singer and party (three men).—This party was granted a subsidy of £175 to assist in driving 700 ft. of tunnel. The distance was exceeded without meeting with payable results.

Bluespur.—A subsidy of £105 was granted to George Noble towards driving 700 ft. of tunnel. At date of writing 497 ft. had been driven.

Minerals Syndicate.—Morrison and party have purchased the plant and mining privileges formerly held by the Minerals Limited Gold-mining Company, and are engaged in driving and blocking-out with favourable results.

R. Harcourt was granted a subsidy of £25 to assist in completing his drainage-tunnel. The work has been accomplished and drainage effected.

Humphrey's Gully.—This property has been steadily worked throughout the year, but the result of sluicing operations has not been entirely satisfactory, for owing to the great length of the tail-races they become blocked, and consequently the quantity of gravel removed per shift is limited. To improve this it is proposed to lift the tail-race some 20 ft. at the upper portions and shorten it. An average of eight men were employed.

Kumara.

The Deep Level Drainage-tunnel.—This tunnel has been extensively repaired, and a permanent winding-shaft sunk. The water has yet to be laid on, when any parties desirous of testing the lower auriferous gravels can do so.

No. 3 Channel.—The extension of this channel is practically completed. Three parties have notified their intention to start and open out their respective claims.

No. 4 Channel.—This channel is in good order.

No. 5 Channel.—There are only two parties sluicing into this channel, and owing to its great length the upkeep falls very heavily on them.

Wheel of Fortune.—A local syndicate has purchased the whole of the mining privileges attached to this sluicing claim, and, when water is available, employ an average of ten men.

Beros and Beros.—When water is available hydraulic sluicing is carried on with profitable results; during the dry weather the extension of water-races and enlargement of dams for conserving water was attended to. Two men are employed.

Kelly's Terrace Drainage-tunnel.—This subsidised tunnel was extended to a point 64 ft. from the old workings, when driving was suspended until the accumulated water was drained off. A deviation from the main tunnel was driven 140 ft. and a connection made with a shaft sunk from the surface, thereby securing good ventilation for extending the workings. In driving the deviation a run of payable wash was intersected.

Ross.

Mont d'Or.—This company's operations are being attended with a fair amount of success. The gold won during the year amounted to 1,149 oz. 17 dwt. 19 gr., valued at £4,527 9s. 1d.—an increase on the return for 1907 of 130 oz. 12 dwt. 6 gr., valued at £532 8s. Three dividends were declared, absorbing the sum of £1,800. Plant and mining equipment are well maintained in good order. Fourteen men are employed. Development-work during the coming year will comprise the starting of a low-level tail-race, to enable the auriferous gravels on the deeper levels to be successfully operated upon.

Ross Goldfields (Limited).—Operations at the mine have been directed to opening up and repairing the drainage adit level, also cleaning out and retimbering the old Ross United Company's shaft to water-level. This latter work, which has been a difficult undertaking, owing to the timbers of the old shaft having collapsed and caused a considerable subsidence, has been successfully accomplished. The erection of plant for generating and transmitting electrical power is making satisfactory progress. The transmission-lines from Kanieri Forks to Ross are nearly completed; while at the power-house the Pelton wheels and generators are being placed in position. The water-race from Lake Kanieri to the Forks has also been repaired throughout. An average of thirty men have been employed.

Park Terrace.—Ford and party were granted a subsidy of £108 18s. to drive a tunnel 726 ft., the Sundown Syndicate also contributing 1s. per foot towards the work. A distance of 601 ft. has been driven, and a little gold is being obtained in the gravels passed through.

German Gully.—Traversi and party have driven their subsidised tunnel 188 ft. The indications so far met are not favourable for gold.

McLeod's Terrace.—This company went into liquidation during the year. The claim was taken over by McLeod Bros. and worked for a short time, but is now at a standstill.

South Westland.

Waiho.—A company owning mining privileges at the Five-mile Beach, Okarito, has acquired the Westland Hydraulic and Dredging Company's water-rights and plant. A scheme is being formulated to generate electrical power and transmit it to the Five-mile Beach, where it will be utilised for elevating the auriferous sands.

Omawa.—During favourable seasons several parties make a living-wage.

Waikupuku.—Messrs. Gibbs and party are engaged in collecting and treating the auriferous black sands. A few beachcombers still continue to labour, with varying results. The success of their operations depend on the action of the tides in depositing layers of auriferous sand.

Dredging.

The total number of working dredges in the Nelson and Westland districts at the 31st December was twenty-three, a decrease of two during the year. The value of gold won, £75,670 1s. 8d., when compared with the return for 1907 shows a decrease of £6 0s. 10d. No new dredges have been built during the year, whilst those that ceased operations have been dismantled. Indications of improvement in the industry at the present time are practically nil.

OTHER MINERALS.

Copper.

Maoriland Copper Company.—Operations during the year were directed principally to the erection of a small reverberatory smelting-furnace, and connecting same with the Champion and United sections of the mine, the latter work necessitating the construction of three miles and a half of wooden tramway. In the Champion section the north shaft was unwatered and a winze sunk 78 ft. below the 150 ft. level, disclosing a lode from 2 ft. to 3 ft. in width, carrying a good percentage of native copper and pyrrhotite. In the United section development-work comprised driving and rising on the lode, which in this section is small and irregular. The results of smelting operations did not prove satisfactory, and at date of visit (25th November, 1908) all work was suspended with the exception of baling the north shaft. While the smelter was working, 11 tons 5 cwt. of copper matte and 1 ton 12 cwt. of copper, valued at £290, was produced.

Mount Radiant.—All work on this field has been suspended. Efforts are being made to raise capital to develop several of the properties.

Antimony.

Owing to the low market value of the metal, antimony-mining has been practically at a standstill during the year.

Iron.

Parapara Iron Lease.—During the early part of the year this property was protected. Since July an average of seventeen men have been employed chiefly on surface-works, comprising the construction of roads and open cuttings. No systematic development-work to determine the extent and value of these ore-deposits has yet been undertaken.

Oil.

Oil-boring Operations at Kotuku.—In connection with these borings work of considerable perseverance and magnitude has been encountered with a full determination to success, providing the field will afford such. Transit of material is amply provided by a substantially built tram-line, while living accommodation and storage-sheds for material have not been neglected. Boring is performed by a simple machine actuated by oil-engine, capable of boring to depths of 700 ft. to 800 ft., with two attendants. On the 7th December, 1908, when the borehole then in progress had attained a depth of 411 ft., large volumes of gas under excessively high pressure were encountered, causing a continuous discharge of salt water to a height of probably 80 ft., and compelling the abandonment of the borehole. Boring is, however, recommenced about 100 yards to the westward. The weekly output as taken from the several producing boreholes amounts to two barrels—viz., 80 gallons. Mr. Taylor, who is conducting the operations, is very sanguine on the venture and seemingly determined to prove the oil-bearing values of this peculiar district.

ACCIDENTS AND FATALITIES.

Quartz-mines.

Fatal.

Progress Mines.—30/5/08: Michael Goodwin was killed by fall of quartz while engaged in working out loose ground from a discharged shot.

Non-fatal.

Progress Mines.—2/7/08: F. Crockford sustained a broken shin-bone by a slab of slate falling and rolling on his leg while renewing timber.

Wealth of Nations Mine.—16/4/08: Kirk Watson had his jawbone broken by a fall of quartz down ladder-way.

Blackwater Mines.—11/8/08: W. Farmer, while working in No. 2 stopes, sustained a bad flesh-wound on leg owing to a fall of mullock from between two sets of timber.

ALLUVIAL MINES.

Fatal.

Dee Sluicing Claim, Three-channel Flat.—20/3/08: William Killen was killed by a fall of rocks whilst working in tail-race.

DREDGES.

Non-fatal.

No Town Creek Dredge.—31/7/08: W. Ray strained the muscles ot his back while rolling a heavy piece of timber.

We have, &c.,

A. H. RICHARDS,
A. WHITLEY,
Inspectors of Mines.

MR. ROBERT MCINTOSH, Inspector of Mines, Clyde, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Office of Inspector of Mines (Southern District), Clyde, 1st April, 1909.

I have the honour to present 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 ended 31st December, 1908.

QUARTZ-MINES.

OTAGO.

Shotover.

Mount Aurum Gold-mining Company, Bullendale.—This old property has remained closed down throughout the year, and there is no definite information with regard to the future of this mine.

Shotover Quartz-mining Company, Skipper's Point (R. M. McDonald, mine-manager; J. N. Lawson, secretary, Dunedin).—The working-policy adopted at this mine has been the continuance of the uprise, required for ventilation and egress. Unfortunately some fallen worked ground was struck, which necessitated a deviation from the course laid down. This has rendered the work more costly, and the Government subsidy was exhausted before the work was completed. During the progress of the work payable stone was met with from time to time, but latterly it was scarce. Pending a determination of the future policy on the part of the company, the mine has been let on tribute to several of the miners. The mining operations are well conducted: timber well used; explosives properly stored and well handled; rules posted; machinery in good working-order.

Eureka Quartz-mine, Jennings's Gully, Skipper's Point (Lambie and party, owners).—Operations have not been conducted on a progressive scale, only one man being generally employed. The work is purely of a prospecting nature, and the owners, aided by a small Government subsidy, have been enabled to locate some payable stone. Further development is to take place before any heavy expenditure is incurred. This policy might well be adopted more frequently by those in charge of or having control over mining operations.

Crystal Quartz Reef, Johnston's Gully, Skipper's Point.—Some years ago payable stone was found in a heavy slip on the hillside. S. Gower and T. Cotter put in a drive some 70 ft. in length and succeeded in striking a narrow reef-track. Operations are to be continued.

Peet and Johnston's Quartz Reef, Upper Shotover.—Several tons of stone were taken from the line of reef and crushed in the Nugget battery. The results were highly payable. A drive is now being put in on the line of reef, in order to test its value and permanency in depth.

General.—A syndicate to conduct prospecting operations having been established in Lake County, over £500 was collected; of this amount £250 were placed to the credit of the Lake County Miners' Association's bank account at Arrowtown. The Hon. the Minister of Mines then authorised a subsidy of £2 for £1, so that there is the sum of £750 available for prospecting throughout Lake County. James Hamilton, an experienced miner, accompanied by two others began prospecting in November, in the Skipper's district. I am unable to report that the party has met with any success as yet, but prospecting is being actively continued.

MACETOWN.

Premier Sunrise Mine, Macetown.—This mine has not been reopened. The bed of Premier Gully was tested by hydraulic power, but, I understand, was found to be deep and very rough.

Sunrise Mine, Advance Peak.—This elevated mine is held by a local resident, but I understand no effort has been made to reopen it.

Hamilton and party's Quartz-mine, Caledonian Gully.—An expensive low-level tunnel is now required before the stone underfoot can be worked. The owners have worked some low-grade stone at a profit. The mine has been idle for some months whilst the owners are considering their future policy.

New Zealand Consolidated Mines (Limited), (L. O. Beal, attorney, Dunedin).—It is pleasing to report that a decided movement has been made to place these mines in working-order. The work

undertaken so far has been with a view to testing several of the reefs, notably the Homeward Bound and Garibaldi reefs. Several levels have been driven, and satisfactory results are said to have been attained. The installation of the necessary aerial tramways is now being proceeded with, and tests are to be made of the quartz in the Tipperary battery before expenditure is incurred in the erection of new batteries.

Anderson, Hannah, and party's Quartz-mine, Scanlan's Gully.—This private party has been engaged during the year in taking out quartz and crushing it in their battery. The reef is narrow, but the stone evidently pays to mine. Crushing operations were hampered during the summer owing to scarcity of water for motive power.

Cromwell.

Come-in-Time Quartz-mine, Bendigo.—A number of local residents formed a company and acquired an interest in the property known as the Cromwell Proprietary Mine. The battery was shifted to a reef known and worked formerly as the Come-in-Time. In reality this so-called reef appears to be a wide belt of highly mineralised country rock. Small tests of this material gave favourable indications, and it was expected that payable returns would be obtained by wholesale treatment. Such, however, was not the case.

Alta Quartz-mine, Bendigo (J. A. Cameron and party, owners).—This mine has been tried several times for gold, and abandoned. The discovery of scheelite in the reef has led to an effort being made to reopen the mine and to place it on a payable basis. There is no machinery on the property as yet. This is a property which requires careful development before much expenditure is incurred.

General.—Several areas were taken up with the expectation that the operations of the Come-in-Time would be successful.

Bannockburn.

Quartz-mining may be characterized as absolutely dead on the Carrick Range. The reason is difficult to find. The reefs are narrow, but they are very numerous, and the existence of highly mineralised quartz amenable to chemical treatment is known. It is to be regretted that the battery belonging to the Go-by Quartz-mine was shifted from this district during the year.

Bald Hill Flat.

Advance Mine, Obelisk Range (R. T. Symes, owner).—I am pleased to report that operations have been attended with success during the year. This plucky miner has great faith in this range, and deserves reward for his perseverance. Surface prospecting is usually carried out by sluicing with water, and when the reef is exposed it is stoped out. There are two small batteries on the property. A Wilfley concentrating-table has been installed to save the pyrites, of which there is a large percentage in the stone treated. The pyrites are valuable, and are shipped away to Australian smelting-works.

Alexandra.

Conroy's Gully Reef.—John Robertson continues to get some stone out and to crush it in his 5-head battery when water is available. Some of the quartz is rich, and much of the lode-material pays for mining and crushing. The want of a suitable water-supply is a great drawback to this particular locality.

Terry and Everitt's Quartz-mine, Conroy's Gully.—These men have been at work for some time, and have sunk a shaft 50 ft. in depth on a narrow reef. A battery has been shifted from Rough Ridge and is now lying on the claim, ready for re-erection.

Roxburgh.

Parker's Reefing Company, Campbell's Gully.—Aided by a Government subsidy, a small water-driven winding plant was erected, and the shaft was sunk to a depth of 41 ft. Operations are to be continued and the shaft is to be sunk to a depth of 60 ft., and a level is to be driven to catch the shoot of stone. This work is purely of a prospecting nature.

Day's Reef, Campbell's Gully.—Like Parker's reef, this reef is situated at a very high altitude, which renders mining operations very expensive. Tests made of this stone give favourable indications, and a party of Roxburgh residents intend to open up this reef.

Serpentine.

Cogan's Reef (John Cogan, owner).—Several shafts were put down upon this reef to a depth of 30 ft. Aided by a small subsidy from the Mines Department, Cogan sank another shaft, which has proved a fair length of shoot. The property is now in the hands of a Dunedin broker, with a view to the flotation of a company to work the mine. There are several lines of reef in this district, all worthy of systematic prospecting.

Waipori.

This district was once the centre of great activity in quartz-mining, but this form of mining is now at a standstill. There was some talk of the Canton Mine being reopened, but no decided move has yet been made.

Milton.

Canada Reef Mine, Table Hill.—This reef has not been reopened. Some uniformly payable stone was taken from this mine during the period it was being worked, but the shoot of stone was short. It is quite probable that payable stone would be found at greater depth. Several men continue to prospect in the locality, and to crush the quartz obtained in the Canada Reefs battery.

Hindon.

There is nothing of a progressive nature to record from this district, which at one time gave promise of becoming an important quartz-mining centre.

Nenthorn.

Although this district did not fulfil its early promise, there are many who retain great faith in it, and some attention is devoted to it from time to time.

Macrae's.

Messrs. Donaldson Bros. have established permanent works at Golden Point and at Mount Highlay. It is pleasing to report that these operations appear to meet with success, and that profitable employment is afforded for over twenty men. The stone is mined and treated primarily for gold, but the percentage of scheelite in the stone makes it an important by-product. Operations at these mines are carried out on good lines: explosives are carefully stored and handled; rules posted.

Barewood.

Barewood Quartz-mine, Barewood (H. S. Molineaux, mine-manager).—This mine continues to be worked on sound lines, due regard being given to the proper working of the mine. The ore is low-grade, and, while economical working is aimed at, the efficiency of the mine and plant is not allowed to be impaired. Work has chiefly been carried on in connection with the 300 ft. level. At this depth the average width of the reef is 7 ft. The producer-gas plant in connection with the battery continues to give satisfaction, and has enabled a considerable saving in working-costs to be effected. The future policy with regard to this mine is of a progressive nature. The shaft is to be deepened, and a pumping-plant is to be installed. Electricity is to be generated by the installation of a second gas plant to drive an electric-driven treble-ram pump capable of forcing water from a depth of 600 ft. Mr. D. B. Waters is consulting engineer to the company. Explosives carefully stored and handled; rules posted. The annual statement of this company affords interesting instruction as to what may be done in dealing with low-grade stone.

Deep Stream.

Welcome Quartz-mine, Deep Stream.—The Welcome Quartz-mining Company was formed during the year to work the above mine. A crosscut some 200 ft. in length was driven before the reef was struck. The reef was found to be 2 ft. in width, but it is yet too early to predict the future of this property.

SOUTHLAND.

Preservation Inlet.

Morning Star Quartz-mine, Te Oneroa (D. McKenzie, manager).—During the year a water-race was constructed to carry seven heads of water for mining purposes. The intention is to sluice from the beach back to the hill, where it is hoped the reef will be exposed at a lower level than has hitherto been worked. The quartz boulders and fragments met with during sluicing operations will be saved for treatment. No expense will be incurred in the restoration of the mine and battery until the result of the sluicing operations is known. The work has given employment to ten men for some time.

Alpha Mine, Kisbee.—L. Longuet has been engaged prospecting the locality by ground-sluicing. Some coarse specimen gold is obtained.

Crown Mine, Cuttle Cove.—I regret to report that the result of the year's operations did not warrant continuance of work in the meantime, and the mine has been closed down indefinitely. There is a regular network of reefs and leaders in this locality, and the large reefs carry low values. Some of the narrow leaders worked in former years carried rich gold near the surface.

Crayfish or Steep-to Island.—A party of miners have began to prospect a reef which was tried several years ago by James McQueen.

HYDRAULIC SLUICING AND ELEVATING.

OTAGO.

There is very little of interest to report from year to year regarding the operations of claims in regular work, so that I propose to report only on those localities where changes have taken place. This branch of the mining industry is on a good footing.

Waitahuna.

Havelock Sluicing Claim (F. Whelan, manager).—The Havelock Sluicing Company took over this property from Mr. Frank Whelan, and constructed a water-race from the Waitahuna River. The race-construction and laying-down of the plant was completed, and work is now being carried on with satisfactory results.

Dredging: The Havelock dredging company went into liquidation, and the dredge is now being worked by a small syndicate.

Tuapeka.

The Bluespur and Gabriel's Gully Consolidated Gold-mining Company (Limited), Bluespur, (J. Howard Jackson, general manager; J. Uren, mine-manager).—As set out in my last report, the question engaging the attention of the management was the working of the deep-level cement. This work was undertaken, and I am pleased to report that the results were highly satisfactory. The mining operations have been conducted on the usual good lines throughout the year.

Lower Tuapeka River.

Gore Syndicate Claim, Tuapeka Flat.—This claim and water-right have been purchased by J. Williams, who has continued to work the bed of the valley. A considerable area of terrace-ground is included in the property.

Tamaiti Gold-mining Company, Tuapeka.—The operations of the company were not attended with success, and the claim has been let on tribute to Messrs. Murie and Wakefield. The plant is in good working-order, but the gradual silting-up of the dam has raised a problem which must soon be faced. No provision was made, when the wall of the dam was erected, to clear out the silt which was certain to accumulate.

Waipori.

Bakery Flat Hydraulic Sluicing and Elevating Company, Upper Waipori (John T. Johnston, manager).—The manager was successful during the year in operating on the deep lead, and a considerable portion of this interesting lead was profitably worked. The successful issue of this company's prospecting operations induced the Waipori Consolidated Dredging Company to have their claims tested by means of the Keystone borer. It is to be regretted that, while the ground was found to be very deep—over 100 ft. in one hole—none of the bores located any trace of payable wash, and the work was discontinued.

Island Block.

It is interesting to record that, whilst the actual mining operations of the Island Block and Golden Run companies were not latterly attended with success, subsequent boring by means of the Keystone boring-machine has proved the existence of highly payable wash in the Golden Run claim. This dredge is driven by water-power, and it is now proposed to put the dredge in working-order again. The wash was proved by boring to be fully 90 ft. in depth from the surface.

Dumbarton.

Anderson's Flat.—Mr. John Ewing has carried out extensive boring operations on this flat on behalf of a Dunedin syndicate. The Keystone drilling-machine is still at work on the property, which is being thoroughly tested.

Bald Hill Flat.

Last Chance Mining Company.—Sluicing operations have been continued during the year. The company increased their water-holding by the purchase of Mr. Pierce Carroll's water-rights.

Upper Taieri River.

Reid's Sluicing Claim, Upper Taieri.—The Lammerlaw Sluicing Company was formed in Dunedin to take over the above claim and bring in a suitable water-supply to work it. A race is now being cut in from the upper branches of the Taieri River, and the claim should be in working-order next season. The company holds a good water-supply which commands an extensive tract of auriferous gravels.

Cardrona.

Criffel Lead Sluicing Company (Limited).—This claim proved even more difficult to work than was anticipated, and the operations were not successful. A start has been made to open out at another point, where it is hoped that the overburden will not be so troublesome.

Branch Creek Hydraulic Sluicing Company.—This company had an almost meteoric existence. About £5,000 was expended in race-construction and in laying down the plant. When operations were begun, the particular ground worked was not payable, and in a short time the mine was closed down.

Luggate.

Luggate Creek Sluicing Claim, Luggate (W. Robertson, manager).—The water-race was completed and the plant installed during the year. Sluicing operations have been commenced, and I am pleased to state that there is every appearance that the work will be successful.

Arrow River.

Arrow Falls Sluicing Company.—The operations of this company have been progressive and successful. The ground has proved to be very rich in places. There is a large extent of ground ahead.

Shotover.

Oxenbridge Bros.' Claim.—This party set themselves the gigantic task of cutting a tunnel 550 ft. in length to divert the Shotover River. The tunnel was broken through a short time ago, and, as the river was very low, all the water passed through it. A substantial wall was built across the bed of the river, but a severe flood found out the weak places and destroyed the wall. I regret to report that this magnificent effort has not been crowned with success. It is now recognised that the tunnel is not suitable to take the whole flow of the river. The estimated cost of widening the tunnel 2 ft. and taking up about 2 ft. of the bottom is £2,000. Before going to much more expense a shaft is being sunk in order to drive under the river and test the bottom wash. This is a work requiring great care, and I have directed the attention of the party to the special precautions necessary.

Collins's Blue Jacket Sluicing Claim (John Ramsay, manager).—This property has been purchased by Mr. J. Patterson, of Waikaka. The water-races have been considerably improved, and more constant work will be carried on.

SOUTHLAND.

Nevis.

The various sluicing claims in this and the Upper Nevis district continued to work as usual. This is now an active sluicing centre.

Waikaia.

Muddy Creek Terraces.—The principal feature in this district during the year was the progress made in the construction of the large water-race from Dome Creek. This work is one of great magnitude, and is nearing completion. The pipe-line and sluicing plant is now being installed on the claim by Mr. F. Broune, the mine-manager.

Waikaka.

A local syndicate took up an area of ground near the Waikaka Township. A deep lead of auriferous gravels crosses the valley near the township, and it is proposed to work this by means of hydraulic sluicing and elevating. A right to construct a race and pipe-line to carry twenty-one heads of water from the Waikaka Stream has been granted. The cost of construction of the race, and the purchase and laying down of the plant, is estimated at £15,000. No steps have yet been taken to begin operations.

Pahia Sluicing Company, Pahia (R. T. Hucklebridge, manager).—This company secured a lease over 47 acres of Connor's freehold land. The land was long known to be auriferous, but was unworkable by any of the methods in use in the locality, consequent upon the scarcity of water. The claim was prospected by driving and by boring, and proved payable to the satisfaction of the lessees, who thereupon introduced the system of working the ground by a hydraulic pump. The first plant proved too small for efficient working, and, aided by a subsidy from the Mines Department, a larger and more capable plant was installed. A Marshall portable engine and boiler of 14-horse power was procured to drive a Wilberforce rotary sluicing pump 7 in. suction and 8 in. delivery column. The material is elevated 30 ft. This plant has done efficient work on the claim, which consists of a terrace 40 ft. in height, composed of heavy-clay beds and seams of auriferous sand and gravel. The present bottom of the claim consists of clay and sand-beds, below which the value of the material is still unproved. The plant is said to have worked efficiently, but proceedings are now at a standstill pending settlement of a dispute regarding disposition of sludge and dirty water with landowners having riparian rights on the Rurikaka Stream.

Nightcaps.

Wairaki Gold-prospecting Association.—The discovery of gold-bearing alluvial ground in the Nightcaps district led to the ground being taken up for gold-mining purposes. A number of shallow pits and trenches were sunk, and a water-race was cut in from an adjoining creek to sluice the ground. Aided by a subsidy from the Mines Department, the claimholders were enabled to further prospect this new field, upon which £500 had been spent to the end of the year. The ground is shallow. Prospecting operations continue to be conducted.

Preservation Inlet.

Gulche's Head-sluicing Claim.— This claim was tested during the year with a small water-supply gathered from the gullies in the immediate neighbourhood. It is claimed that the test proved that the deposit would be payable if treated with a large body of water. An attempt is now being made to raise sufficient capital to undertake the gigantic work of bringing in the necessary water-supply.

GOLD-DREDGING.

In connection with this branch of the mining industry, I have to report that the usual number of visits were made to the dredges at work in this district.

The means adopted by the Mines Department in order to have the regulations complied with, in the interests of life and property, have proved satisfactory. Generally speaking, the regulations are duly complied with.

Among improvements effected during the year may be mentioned the installation of electrical power on the Earnscleugh Gold-dredging Company's No. 5 dredge, and the introduction of a shaking-box to replace the revolving-screen on the Golden Gem dredge, Miller's Flat.

Dredge-pontoons are generally built with hardwood and kauri timber. It was reasonably expected that the kauri planking would last a great length of time, but in many dredges some inferior planks were inserted and these have taken dry-rot. I have examined the pontoons, and remedies have been adopted where necessary.

Calico copies illustrating Professor Schaefer's method of rendering first aid to the apparently drowned, published by direction of the Hon. the Minister of Mines, have been distributed to the dredges and have been greatly appreciated by the dredgemen.

The opinion is largely held that the dredging industry is in a decadent stage, and it must be admitted that the day of the small and moderate-power dredge is fast drawing to a close. On the other hand, the operations of the Earnsclough, Rise and Shine, and Rising Sun dredges prove what may be done on low-grade gravels with machines of suitable power.

Throughout the year 1908 there were sixty-three dredges in active operation in Otago and forty-nine in Southland. This shows a decrease of nine working dredges in Otago and three in Southland. A number of dredges were standing idle, and a few were totally dismantled.

ACCIDENTS.

Hydraulic and Alluvial Mines.

Fatal.

8/8/08: Joseph Tognazzini and James Lindsay, labourers, were accidentally killed by an explosion of gelignite while working on the Muddy Terrace water-race construction at Waikaia. Lindsay attempted to withdraw the remains of an unexploded charge with his pick.

8/12/08: Percy Valpy, a partner in Valpy Bros.' sluicing claim, Glenorchy, was caught by a landslip and partially buried while working in the tail-race. A slip due to heavy rains the previous night came off the hillside into the tail-race. Valpy died before he was extricated.

Non-fatal.

10/7/08: Edward Sharpe, labourer, Muddy Terrace water-race construction, Waikaia, received injuries to head and left side through a fall of rock from the side of race-cutting.

GOLD-DREDGES.

Fatal.

30/12/08: John Kennedy, winchman, Waireki dredge, Clyde, was accidentally drowned through stepping on a broken plank, which precipitated him into the river.

WATER-RACES AND DAM-SITES.

A large portion of my time has been taken up reporting upon application for various privileges in respect to water-races and dam-sites. During the year one hundred and thirty-five applications were dealt with for water-races, and the total number of heads of water applied for totalled 723.

OTHER MINERALS.

CINNABAR.

No steps were taken during the year to open up the known deposits of this mineral.

AURIFEROUS IRONSANDS.

Beachcombing is chiefly practised at Orepuki and on the neighbouring portion of the coast-line stretching to Colac Bay. Platinum is saved in small quantities by the beachcombers. It is also a product of the operations of the Round Hill Mining Company, Southland.

COPPER.

I made a visit to the property held in Wet Jacket Arm, Dusky Sound. I found an open quarry of quartz-bearing cupriferous pyrites, but the work undertaken gave no indication of the value or extent of the deposit.

ANTIMONY.

Alexandra Antimony-mine, Alexandra (Charles Rillstone, manager).—Operations at this mine were not continued on a progressive scale during the year. The low price ruling for antimony prevented the company from sending away the raw material. A smelting plant is now in course of erection at the mine. The ore is said to contain a payable amount of gold and silver.

SCHEELITE.

Forty-one tons are returned as having been produced and exported from the Macrae's and Mount Highlay districts during the year. The largest producers in these localities are the Messrs. Donaldson Bros., owners of the Golden Point and New Zealand Gold and Tungsten Mines. At these mines, works are conducted on a progressive scale; but the shortage of water is severely felt during the dry summer months.

Glenorchy Scheelite Syndicate, Glenorchy (G. Reid, manager).—The mine is worked by a system of levels and stopes, and the works are well conducted.

Alaska Scheelite Mining Company, Glenorchy (H. Birley and party).—This promises to develop into a successful scheelite-producing property. At present the owners are breaking out the scheelite opencast, and dressing it before sending it to the Glenorchy Scheelite Syndicate battery. Four men are employed.

Kingsland and party's Scheelite Claim, Glenorchy.—A reef containing scheelite has been exposed on the hillside, but no development-work has been done on the mine. A battery has been shifted from Bannockburn and is now being erected on the mine. The stone will be conveyed from the mine to the battery by means of a ropeway.

General.—Several scheelite areas are held, but no scheelite is produced with the exception of Messrs. Paulin and Pink, who dispose of their ore to the Glenorchy Scheelite Syndicate. Tracks were badly needed to the several claims, and the Mines Department assisted the miners to form the necessary tracks.

GREENSTONE.

A visit was made recently to the mine at Anita Bay, Milford Sound. The track is rapidly becoming overgrown, and the works are falling into disrepair.

COMPLEX MINERALS.

Preservation Inlet.

Tarawera Lode, Isthmus Sound.—The existence of this lode has been known for many years, and at one time a shaft some 90 ft. in depth was sunk. The work was then abandoned. Quite recently it was claimed that this complex ore would be amenable to treatment in a smelter or blast furnace, and the lode was pegged out by an Invercargill syndicate. As the installation of the necessary plant will be costly, and as the mine is undeveloped, the safest procedure to adopt in the interests of the shareholders would be the thorough development of the mine.

I have, &c.,

ROBERT MCINTOSH,

Inspector of Mines.

ANNEXURE B.

REPORTS OF WARDENS.

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

SIR,— Warden's Office, Auckland, 17th February, 1909.

I have to report that there has been very little activity in the mining industry in the Puhipuhi Mining District during the year ended the 31st December, 1908. During the year thirty-nine miners' rights have been issued, also six ordinary prospecting licenses, and three ordinary prospecting licenses for coal, and one certificate of protection. The work for the year has been confined to prospecting.

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

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

SIR,— Warden's Office, Tauranga, 22nd February, 1909.

I have the honour to acknowledge receipt of your memorandum dated the 26th ultimo, asking me to furnish a general report on the mining industry in my district, and in reply thereto have to inform you that very little work has been done in the direction of developing the mining industry in the Tauranga Subdistrict of the Hauraki Mining District during the year ended 31st December, 1908.

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

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

SIR,— Warden's Office, Thames, 1st April, 1909.

I have the honour to forward herewith my annual report on the Hauraki Goldfield for the year ended 31st December, 1908.

The gold obtained from the mines in the Hauraki Mining District during the past twelve months shows a decrease of £72,369, as compared with the returns of the previous year. This falling-off is chiefly attributable to the decline in the yield from the Waiotahi Mine at the Thames. In the Ohinemuri district there has been an increase of £72,409. It is from this part of the mining district that by far the largest portion of the gold has been obtained—the yield being £1,260,579, as against £38,056 for the Thames, and £4,029 for Coromandel. The Waihi Mine maintains its commanding position as the richest and most important mine in the Dominion. Each year shows a substantial increase in the annual return. As development proceeds in the mine the immense resources of the company's property are more strongly shown. Operations have been carried to 1,000 ft. from the surface.

Next to the Waihi Company's mine in importance stands that of the Waihi Grand Junction Company. Vigorous operations have been carried on in this mine, and a complete and efficient battery and plant for the treatment of the ore has been provided. There is reason to believe that the lode-system of the Waihi Mine extends into the Grand Junction, though at a greater depth. A large amount of capital has been expended by the company in developing this property, and work has been persistently maintained; although the returns have been small in comparison with the outlay, recent developments have been encouraging

The only other mine at Waihi in which continuous work is carried on is the Waihi Extended. This claim is owned by an Auckland company, and credit is due to the shareholders for the persistent manner in which work has been maintained and supported by them. So far operations have been of a developmental character only, and no returns have yet been received.

A number of claims have been taken up at Waihi from time to time, and efforts made to work them, but, so far, no operations of any magnitude have been carried on upon any of them.

Considering the extent and value of the reefs worked in the Waihi Mine, and the probability of their extension into the surrounding plain, it seems at first sight somewhat surprising that more vigorous efforts have not been made to carry on prospecting-work at Waihi. The great difficulty has been the want of the indispensable capital. The auriferous lodes of the district lie at a great depth (500 ft. to 1,000 ft.) below the surface, and the preliminary expense of sinking shafts and erecting pumping-machinery before the ordinary work of prospecting can be commenced puts it beyond the power of an ordinary local syndicate or company to successfully engage in the undertaking. Efforts have been made to obtain capital from London and elsewhere out of the Dominion, but so far without success. At the present time several large areas are held under protection while their owners are endeavouring to procure the assistance of capital from London. In one or two instances there seems a fair prospect of the negotiations ending successfully. These properties are, in my opinion, well

worthy of a trial; but to attempt to test them with a small capital, such as could be raised locally, would inevitably end in failure. No doubt the large amount of capital necessarily expended on the Grand Junction Mine over a lengthened period without any profitable return has deterred investment in other mines at Waihi. The latter mine adjoins the Waihi property, and until its success is assured foreign capital will not be readily obtained for claims situated at a greater distance from the parent mine. There are no mines near Waihi that could be worked by the ordinary miner or small party of miners, and until capital from beyond the Dominion can be obtained to open up some of the claims now held no fresh development of the mining industry can be looked for at Waihi.

At Karangahake, work has been successfully carried on, particularly in the Talisman Mine, which as a gold-producer stands second only to the Waihi Mine. Bullion worth £218,975 was won from the mine during the year ended last December, being an increase of £34,529. In August of last year, owing to the influx of water caused by the cessation of pumping operations in the Crown Mine, adjoining, all work had to be discontinued on No. 13 level, where at the time the main reef, from 7 ft. to 8 ft. in width, and in places carrying rich ore, was being worked. Since then operations have been carried on from No. 12 level upwards, and ample supplies of ore have been obtained to keep the mine and battery fully employed. Additional pumping plant is being erected, which, when completed, will enable operations to be resumed at No. 13 level.

The other large mine of the district, the New Zealand Crown Mines, shows a considerable decrease in the output of gold compared with the yield of the previous year, *e.g.*, this year's product being something less than half that of the year 1907. Operations in the mine have been to a large extent suspended owing to the presence of a large inflow of water, which it was not possible to reduce with the pumps then in position. Two electrically driven duplex pumps have been obtained, and will be placed in the main shaft. These pumps will be capable of coping with the water, and will enable the richer ore below the No. 5 level to be worked, and an increased yield of gold may be expected during the coming year.

There are several other mines at work in the locality, but they have not contributed to the gold-production of the district. They are all in process of development, work being steadily carried on with well-founded expectations of success, and it is probable that some of them may be found among the gold-producers before the end of the year.

At Komata the Komata Reefs Mine has been working constantly throughout the year, yielding bullion to the value of £44,305. The average return from the ore crushed was £1 14s. 1d. per ton.

Several mines are in operation at Waitekauri, and a good deal of development-work is being carried on; but the yield of gold has been comparatively small, and the returns have not been remunerative.

Mining at Waiorongomai has been carried on on a limited scale, and there are no returns of gold to record. The Hardy's Mines (Limited) have been engaged in putting in a prospecting-drive to test the ground at a much lower level, the upper portions of the claims owned by them having been worked out. This drive is now in a distance of 850 ft., and the Hero reef, profitably worked in the higher levels, has been intersected. In the Waiorongomai Mine prospecting operations are being carried on, and, though no returns have been obtained, the prospects are encouraging.

A syndicate was formed during the last year among the Te Aroha residents to prospect the hill at the back of the Domain reserve. A tunnel, now 160 ft. in length, is being driven in the hope of discovering a rich gold-bearing reef believed to exist in the locality.

When the Te Aroha Goldfield was opened in 1880 the original prospector—a Native named Hone Werahiko—discovered on a landslip a quantity of very rich auriferous quartz. The reef from which this quartz came was never discovered, and it is the hope of intersecting this reef in the tunnel they are putting in which has induced the syndicate to enter upon the venture.

Mining has been carried on during the past year at Omahu and Kirikiri, but, unfortunately, the operations have not proved successful.

Several claims are held at Maratoto, but work has been carried on somewhat intermittently. The quartz from this locality is refractory, and no great progress can be made until some satisfactory method is found of dealing with the ore.

Within the last year or two the Tairua district, situated on the eastern side of the dividing-range, has come into prominence as a locality likely to repay prospecting and exploiting. The lodes there are in general large and continuous, and trials made from samples of quartz from the reefs give indication of the payable nature of the ore. Though not rich after the manner of the specimen-producing reefs of the Thames and Coromandel, these lodes appear to be more permanent in their nature and more consistent in character. Of the older claims in the district the Tairua Broken Hills is the only one that has produced gold in payable quantity. The company has kept continuously at work, employing about sixty men. Present appearances seem to point to a prosperous future: 4,601 tons of ore was treated last year, for a return of 8,698 pounds' worth of gold.

The Golden Hills claim is the most prominent among the more recent mines opened in the district. From the beginning, operations have been energetically prosecuted, and the mine is well opened up. A large body of ore is in sight, which it is stated promises satisfactory returns, and the prospects of the company are encouraging. Several claims have been recently taken up, and preliminary work is being carried on upon them; but it is not yet possible to speak with certainty as to their prospects. The want of good roads connecting with some centre of population is at present a drawback to the district.

There are several claims in existence at Neavesville, near the summit of the main range between Puriri and Tairua. A considerable amount of work has been done, and operations are still in progress; but the returns of gold are small. The most prominent of these claims is the Champion, on which the proprietors, the Champion Company, have spent a large amount of capital and carried out extensive works, but, I regret to say, without any profitable result.

At Waiomo, with the exception of the work done on the Monowai Mine, very little mining has been going on. About thirty men have been employed on the Monowai Mine, over which an option to purchase is held by the Ferguson's Smelting Company. The ores of the district generally, and of this claim in particular, are refractory, and up to the present time no satisfactory method of treatment has been available in the district. It is expected, however, that the large smelting-works erected by the Ferguson's Smelting Company near the beach at Waiomo, and now practically completed, will be able effectively to deal with it.

The completion of the smelting-works referred to has been looked forward to with interest for some time all over the mining district, for it is hoped that by its means the large deposits of refractory ores existing from Te Aroha to Waiomo may be made to yield the gold known to be contained in them —a result which cannot be obtained by any process at present in use in the district.

At the Thames mining operations have, on the whole, not been very energetically prosecuted. This portion of the district has been in work for the last forty years, with the result that all the upper portions of the mining properties have been worked out, and the only hope there is for the continued existence of mining lies in the development of these old claims at a greater depth. The necessity for deeper workings, particularly in that portion lying between the Moanataiari slide and the sea, has been foreseen for years past, and from time to time suggestions have been made as to combined efforts by the different claimholders to bring this about. But it is only within the last year or two that these suggestions have begun to assume tangible shape. The deep shaft sunk on the Queen of Beauty claim by the May Queen Company with the assistance of a subsidy from the Government has now reached a depth of 1,000 ft., the lowest portion being sunk through country very favourable for the existence of auriferous lodes. The sinking of this shaft and the favourable nature of the country reached by it has greatly strengthened the belief in the recurrence of gold-deposits at depths greater than has yet been attempted at the Thames. Several schemes of co-operation by companies concerned have been propounded, whereby a general plan of working, by means of a main crosscut from this shaft, might be carried out so as to enable the various claimowners to prospect their respective claims by branch tunnels driven from the main tunnel. There is no doubt that a concerted plan of operations, in which each company would bear its proportion of the cost, is the most obvious and reasonable method of taking advantage of the means afforded by the Queen of Beauty shaft for testing their claims at a greater depth. Unfortunately for the prosperity of the district, conflicting interests have led to differences of opinion as to the direction in which the crosscut should be driven. In consequence, nothing is done, and the whole district is languishing. To a mere onlooker it seems difficult to understand why it should be impossible for the parties interested to come to an agreement. Among claimowners, earnest in their desire to take advantage of the opportunity presented of resuscitating their properties, one would think it ought not to be difficult by mutual and reasonable concessions to agree upon a general plan of co-operation, advantageous to themselves and beneficial to the district at large. In the meantime, with one or two exceptions, comparatively little mining is being carried on upon the area affected.

Among those working, the Waiotahi Mine has employed the largest number of men, and yielded the largest return of gold—viz., 5,421 oz., valued at £14,716. The May Queen Company has been carrying on vigorous work, and an interesting feature of their operations is that this mine is being worked and gold obtained at the lowest depth yet reached on the Thames, the No. 6 level being 722 ft. below the surface, while in the Queen of Beauty section a crosscut has been driven 800 ft. below the surface to connect with the level worked in the May Queen section.

Work has been continuously carried on by the Kurunui-Caledonian Company on their claim. The Kuranui Mine and the Victoria Mine have kept on operations during the year, but very little work has been done on the New Moanataiari or the Saxon Mines. They are waiting for development from the deep-level scheme of operations.

The Old Alburnia Company, whose mine is situated at the head of the Moanataiari Creek, have been steadily carrying on their operations in extending the Moanataiari tunnel in a direction to bring it under the old workings of the claim. This tunnel has now been driven a distance of 8,000 ft., and from the end a rise has been put up a distance of nearly 500 ft. to connect with the old workings near the surface. The company has been engaged in this work for the past six or seven years, and have pursued their object with great perseverance. The tunnel having been driven the required distance, and the rise to the surface almost completed, it is expected that the company will be shortly engaged in opening up their property by crosscuts to be driven from the rise now in progress.

Two mines in the Thames district have come prominently into notice during the last year—viz., the Waitangi, at Shellback Creek, and the Sylvia, at Tararu. In both these claims developmental works have been in constant progress, and the prospects of both properties are stated to be of a promising nature. The ore in both mines is somewhat refractory, and, though the difficulty of its treatment is by no means insuperable, the most economical and efficient method of treatment has yet to be determined. Encouraged by the success of the Sylvia claim, several claims have recently been taken up in Tararu, and work commenced upon them; but, so far, operations have not gone beyond the prospecting stage.

The mining industry at Coromandel is passing through a period of depression, but there are indications of a returning interest in this portion of the goldfield. Several mines have been in operation for years, and during the past twelve months work has still been continued, though without any adequate return in gold produced. Revived interest has been manifested in the Hauraki and the Hauraki Freeholds claims, and work is being more energetically carried on with every hope of its ultimate success.

The Kapanga Mine—the oldest in the peninsula, and long worked by an English proprietary—has been acquired by a new company, who intend to unwater the shaft—now down a depth of 1,000 ft.—and to recommence operations from the bottom, with the object of working the run of gold stated to

exist there. The work of pumping the shaft and providing adequate machinery will take some time and involve the expenditure of a considerable amount of capital, and the company are now engaged in arranging for the work to be done.

An impetus has been given to mining in the Tokatea Range—famous in former days for the amount of gold it produced—by the discovery by the Royal Oak Company of a gold-bearing reef on the other side of the hard bar which in the working of the claim some years ago was believed to cut off the run of gold. Encouraging prospects have been met with and some "specimen" stone obtained. From 4½ tons of ore and 420 lb. of picked stone a return of 374 oz. 10 dwt. of gold was obtained.

At Kuaotunu mining had for some years practically ceased. During the last year, however, several of the old claims have been retaken-up, and efforts are being made to provide funds to prospect these properties at a low level. The upper portions of the old Kuaotunu mines were worked profitably some years ago, but on attempting deeper workings a barren stratum of country was met with, and, operations becoming in consequence unprofitable, the claims were one by one abandoned. The success recently attending operations in the Mountain King Mine in their low-level tunnel has again directed public attention to this portion of the goldfield as a district likely to repay investment if mining is carried on at greater depth than previously attempted, and there appears to be a probability of a successful revival of mining in this district in the near future.

Great Barrier Island: Mining is still being carried on here, but I am sorry to say it has proved far from profitable. A great deal of work has during the past few years been done upon these claims, and a very large amount of capital has been sunk in the various undertakings. The wonder is that the proprietors have not become discouraged by the long uphill struggle, and given up the attempt. They have however shown a dogged determination in spite of disappointments, and work, though with a reduced number of men, is still in progress on the island. The proprietors certainly deserve success.

On a review of the whole goldfield, it must be admitted that the amount of gold obtained during the past year is not commensurate with the work done and the capital expended. The total for the whole district, amounting to £1,302,664, certainly appears large, and bears favourable comparison with any previous year, and it is gratifying to be able to record such an addition to the wealth of the Dominion from our mines; but when we deduct from this amount the bullion won from the Waihi and Talisman Mines, £896,742 and £218,975 respectively, we reduce the yield from the rest of the goldfield to £186,947, and of this the greater portion, £144,862, is derived from the Ohinemuri portion of the district. Of the total of £38,056 derived from the mines in the Thames County and Borough £13,414 was contributed by two claims—viz., the Waiotahi (Thames), £14,716, and the Broken Hill (Tairua), £8,698. When one considers the number of mines in operation throughout the entire district, and the aggregate amount of work carried out upon them, it is easy to realise that a very large proportion of the money which is expended upon them and which maintains them in operation comes from the pockets of the shareholders. It is owing to the support afforded by persons who interest themselves in mining in this district that the vitality of the goldfield is maintained. No doubt what is done is done in the hope of ultimate reward, but all the same a word of praise is due to these people for their enterprise and perseverance. In my opinion this outlay is justified by the possibilities of success, for there is undoubtedly immense latent wealth in these mountains which can only be brought to light by a large expenditure of capital. The difficulty is that this capital is not always forthcoming, and it is impossible to open up new ground or embark in fresh mining enterprises without the assurance of financial support. During the past year a number of claims have been taken up in favourable positions on the goldfield, and efforts made to obtain the funds necessary to proceed with their development; but owing to the stringency of the money-market it is not possible to obtain the necessary capital, and in consequence very little work has been done on these claims, and what has been done has not been done to advantage.

If the operations at deep levels at the Thames to which all are anxiously looking forward prove a success, a new era of prosperity will dawn for this portion of the goldfield, reviving its former importance as a mining field. The influence of this revival will be felt throughout the whole district, reawakening interest in gold-mining, and leading to the influx of the much-needed capital for exploiting the auriferous areas which occur at intervals throughout the whole district.

It is sincerely to be hoped that in my report next year I shall be able to say that the difficulties which now beset the scheme of deep working at the Thames have been overcome by mutual concessions, that the work is in progress, and that the expectations of years are at length brought within the possibility of realisation.

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

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

Sir,— Warden's Office, Blenheim, 25th March, 1909.

I have the honour to report as follows concerning the mining district under my jurisdiction:—

Wairau Valley.—The work done at the Wairau Valley Gold-mining Companies claim has been mainly of a preliminary nature. A winze has been sunk on the Nelson reef to a depth of 70ft., and it is stated that a trial crushing of 38 tons of the stone yielded 1 oz. per ton.

To work this reef the company is putting in a low-level drive which will be between 700 ft. and 800 ft. in length, of which 340 ft. has already been driven. The company has an up-to-date crushing plant in readiness to commence work when the reef is struck.

At the Tasman's Choice claim, in Arm-chair Creek, two winzes have been sunk, and the reef struck at between 80 ft. and 100 ft. The reef averages 2ft., and a sample gave results which warranted the company proceeding with a low-level drive and arranging for a crushing plant.

Further up the valley, at the Mount Patriarch claim, a considerable amount of work has been done, both sinking and driving, and it is stated that the necessary capital is assured to put a plant on the claim at once.

A company has been formed to work a hydraulic-sluicing claim at Enchanted Creek. The head-race is near completion, and the tail-race is well under way. This claim is owned by some of the leading business men of the town, and it is their stated intention to prove the claim as rapidly as possible.

Jackson's Head, Pelorus Sound.—At this mine operations were commenced at the end of 1907, and consisted principally in driving a low-level tunnel about 25 ft. above sea-level. The reef was struck after driving 200 ft., and was followed for 50 ft. Operations were then suspended pending the construction of a paddock, which is in course of erection.

Waikakaho and Mahakipawa.—Several parties were at work during the year on these fields, the principal work on the Waikakaho being done at the Southern Cross reef, the nature of it being cleaning out old drives and winzes and prospecting generally. Ten samples of stone from this roof were sent to the Government Assay Office at Wellington, and the results have induced the party to continue their work. On the Mahakipawa field several old claims are still being worked, but the results are known only to the parties interested.

Wakamarina and Deep Creek.—At both these places small quantities of gold are being obtained. One party completed a great deal of work in clearing out a pot-hole in the Wakamarina River; but the results did not justify the expense. No work has been done at the Golden Bar reef beyond taking out a few samples.

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

Mr. Warden Kenny, Nelson, to the Under-Secretary, Mines Department, Wellington.

Sir,— Warden's Office, Nelson, 15th March, 1909.

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

Subdistrict of Collingwood.

The Parapara Hydraulic Sluicing and Mining Company (Limited) has met with fair success during the past year.

The Quartz Ranges (owned by Mr. Charles Y. Fell).—Little has been done on this property during the past year. It is the intention, however, of the licensee to reorganize and work on different lines, with different objects, and on a much larger scale, in the near future.

Golden Block, Taitapu.—During the last twelve months, 1,757 tons of ore has been crushed. Retorted gold, 1,526 oz.; smelted gold, 1,516 oz. The total value of the gold produced has been £5,482. The value of gold per ounce is £3 12s. 4d.

Taitapu Gold Estates (Limited).—No mining operations are now being carried on, work having ceased in the month of June last.

Johnston's United, Bedstead.—This well-known ground was taken up at considerable expense by Mr. Fell some years ago. No gold has been obtained during the year, and the privilege has been surrendered.

The Slate River Company (Limited).—This company's privileges have not been worked during the past year. The party that was working on tribute during the latter part of the year 1907 ceased operations at the beginning of 1908. Later on, the company was wound up voluntarily, with the result that the whole of the company's claims and water-rights were purchased by a newly formed company, the Aorere Hydraulic Sluicing Company (Limited). The new company proposes carrying on mining operations by hydraulic sluicing in new ground, known as "Boggie's Freehold." The company have purchased a large quantity of pipes at Westport that were formerly used by a German syndicate. This new company will command a very large supply of water.

Minor Operations and General Remarks.—Very little individual mining has been done during the past year. Something has been attempted in the Kaituna district; two or three men have been working the bed of the Slate River; and two have been fossicking at Rocky. Little or no prospecting has, I regret to say, been done during the year.

Takaka Subdistrict.

Mining in this district also is falling off considerably. The Takaka Sluicing Company has sold out its claim at the Bu Bu to Mr. Campbell, their late manager, who is employing five men at the present time. There are two old men working up the creeks, but getting very little gold. There are about nine men, off and on, in the lower and upper Anatoki. They report that there is plenty of gold, but it wants capital to get it. Two men are working the Waingaro River, and two old miners working in the Waitoi Creek brought down 12 oz. of gold just before Christmas.

Motueka Subdistrict.

Mr. Holland, a mining engineer of experience in asbestos mining and treatment in Canada, has gone up to prospect for asbestos. Some work is being done on the special claims which have been taken up on the table-land of Mount Arthur, but the Mining Registrar at Motueka has not supplied me with particulars of the work, nor the amount which has been expended on the privileges held by Messrs. Bond, Clouston, Ewing, and James. No doubt, the Mining Inspector will be in possession of this information later on.

Wangapeka Subdistrict.

I am sorry to say that mining is practically dead in this district.

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

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

SIR,— Warden's Office, Westport, 5th April, 1909.

I have the honour to report as follows upon the gold-mining industry in the Westport portion of the Karamea Mining District for the twelve months ended 31st December, 1908 :—

There were granted ten alluvial and four quartz claims, as compared with seven alluvial and five quartz claims for the year 1907.

At Addison's fair average returns are being obtained. A party proposes taking up several claims to work the tailings which have been collecting as the result of forty years' mining in the locality. It is estimated that some 600,000 pounds' worth of gold has been taken from the neighbourhood, and, as miners consider that not more than 75 per cent. of the gold is actually saved, it is thought that the tailings are worth working. These tailings are practically confined to two creeks, and with a suitable "blow-up" plant good results are anticipated.

Jenkins and Wilson, who, with the assistance of a Government subsidy, have been driving a prospecting-tunnel at Giles's Creek, have now discontinued work. Twelve hundred feet was driven without anything of workable value being discovered. Sufficient water is not obtainable in this locality in the summer months, and the parties have now turned their attention to opening up a claim on Ballarat Creek. It is understood they intend to continue driving the tunnel at some future time.

A miner at Fairdown Terrace is said to be making fair wages.

Generally speaking, mining in the Karamea District may be said to be much in the same condition as it has been for years past.

Addison's is the principal seat of activity, and occasionally one hears of good returns. The general opinion throughout the district seems to be that the country has been very imperfectly prospected, and that a thorough and systematic examination would reveal the existence of much mineral wealth.

The statement that the Government intends to carry out prospecting operations was received with great satisfaction, though doubts are expressed whether, unless the scheme includes the costly process of boring, the result will be of much practical value, as far as this district is concerned, at any rate.

LYELL.

Gold-mining in this locality has been steadily going down. Only four special claims and two extended claims have been granted during the year—two of the former for quartz and two for dredging. The New Alpine still continues to work with some twenty men, and is understood to be getting fair stone. The work during the year has consisted principally of sinking the main shaft and stoping the lowest level. This is the only quartz-mine actively employing men. A few prospectors have been out most of the year, but have nothing to report.

Mr. De Filippi has sold his dredge at Three-channel Flat to a Greymouth syndicate. The dredge has been floated up the river to Flat Bush Creek, with the result that good gold is being obtained from week to week.

The two other dredges, Hansen and Gilstrom's, at Old Diggings, and Smeaton's Dredging Syndicate's, at Rocklands, have also been working steadily during the year, with fair results.

SEDDONVILLE.

Very little gold-mining is being carried on in this district.

MURCHISON.

MacNamara and Rogers and Li Long and party, at Six-mile Creek ; Beilby and party and Hunter and party, at Horse Terrace ; J. Keys, at Mid-Maruia ; Thomson and party, at Warwick Flat ; Barclay and Lewis, at Newton Flat ; and the Walker-Maruia Sluicing Company (Limited), at Upper Maruia, have been working fairly constantly. Fairhall and Prebble, at Newton Flat, have had a lot of dead work to do.

There are a number of Europeans and Chinese mining through the district, and most of them are making fair wages.

CHARLESTON.

An application was made by a syndicate for a special claim for the purpose of working the grass-covered sand-ridge between the sea-beach and a number of freehold sections owned by some old Scandinavian settlers who make a fair living by beachcombing. These settlers strongly objected to the grant, on the ground, amongst others, that the ridge protected their land from being inundated by the sea and injured by drifting sand. The syndicate proposed to work by the dry-blowing process. However, in consequence, it is understood, of the failure of similar operations on the Greymouth beaches, the application was allowed to lapse.

J. M. Powell continues to obtain good results from his beach claim.

A prospecting party is engaged in seeking for gold in the ranges.

KARAMEA.

The twenty-two special quartz claims referred to in my last report have been granted with numerous water-rights, &c.

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

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

SIR,— Warden's Office, Greymouth, 19th April, 1909.

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

GREY SUBDISTRICT.

There is little to report on the mining near Greymouth. The dredge at work upon the North Beach was idle for some months at the beginning of the year, owing to the long spell of dry weather. Operations have been resumed, and the returns, regular but not large, are sufficient to give a good result, over and above working-expenses, to the holder, Mr. Joseph Taylor.

At Barrytown McKay's sluicing claim is in full working-order, and the prospects ahead of this party are very promising. During the year the holder took up another special claim of about 100 acres adjoining the previous workings.

OIL INDUSTRY.

An enterprise which has been watched with considerable interest is that of oil boring at Kotuku. Here there are two holdings, that of the Lake Brunner Oil Company and that of Mr. Joseph Taylor.

The Lake Brunner Company has been working for some years prospecting its holding, and has spent some £7,000 or £8,000 in putting down bores, one of which was sunk to a depth of 900 ft. and another to about 760 ft. At present their operations are suspended.

On adjoining ground Mr. Taylor has been prosecuting vigorous boring operations for some two years and a half or three years. Eleven bores have been put down on the area (about 600 acres), but the holder was unfortunate with the last bore, in that after a depth of 320 ft. had been reached the gas-pressure became too strong for work, and some ten or fourteen days later the salt water came through, and a gusher formed, sending the water to a height varying from 70 ft. to 100 ft. This gusher, though diminishing in power, is still active. A new bore has now reached a depth of 415 ft., and it is expected that after another 20 ft. a change to softer country will be experienced.

Application has been made by Mr. Taylor for a larger area of this country, which, in the opinion of Dr. Bell and Mr. Morgan, presents features indicating the existence of oil.

From the surface gravel—a depth of 80 ft. to 100 ft.—a certain amount of oil has been obtained and sent away. This is of a fine and superior quality, useful for both lubricating and for lighting purposes.

AHAURA SUBDISTRICT.

Nelson Creek.—About July last a rush took place in this locality, and between fifteen and twenty special and extended alluvial claims were taken up near Gow's Creek. What has hitherto been looked upon as the "Old-man Bottom" has been fully proved to be wash with streaks all through it carrying gold. Several prospecting-tunnels have been driven into the range, and in Coll's tunnel about 40 ft. to 50 ft. of wash was struck, showing very good prospects. Owing to the shortage of water in the locality and the depth of the ground, it will take some time to thoroughly prove the value of this new ground.

About two miles of the bed of Gow's Creek has been taken up with a view of constructing tunnel tail-races from the left-hand branch of Nelson Creek to work the wash right down to the "Old-man Bottom." This is intended to be done by a small company with a capital of about £2,000, and the speculation is considered to be one of the best in the district, inasmuch as the Donnellan brothers during the year have been working their claim lower down the creek by lifting their wash with a water-balance and making excellent returns, and it is evident that, where sluicing out of an open tail-race can be carried on, no method for alluvial mining has its equal.

There are four dredges working in the Nelson Creek district, and the results through the year have been very satisfactory.

Alluvial mining in this district during the year 1908 has been the means of employing a considerable number of men, and the results have been good.

Ahaura River.—This locality has not received the attention it should have received during the year, as the few miners working on the north and south banks of the river have met with good results.

Some time past a party took up a water-right of 40 heads from Lake Hochstetter, and endeavoured to obtain the necessary capital to construct the race to the south bank of the Ahaura River. There is a large extent of rich alluvial ground on the south bank of the river at Sullivan's Creek, German Gully, Irishman's, and Big Boxes Creek that would give employment to a large body of men if the water-race from Lake Hochstetter was constructed.

The flotation of a company has been in hand, but so far without success. The party have recently decided to try and float it locally on as small a capital as possible.

Moonlight Creek.—During the year 1908 a considerable amount of work was carried on in this locality. Mitchell and party were engaged driving their prospecting-tunnel, and the country passed through looks promising, but no quartz reef has been struck yet.

The Shetland Terrace Sluicing Company have their claim at Shetland Terrace opened up, and during the year considerably improved their water-supply, which will enable them to work the claim at a greater advantage. The prospects of the company are considered very good.

In Garden Gully about the same number of alluvial miners worked through the year with fair results.

In Moonlight Creek the dredge owned by C. Passmore and party has worked continually through the year, and the party are said to have made good wages.

Blackball and Healey's Gully.—The number of miners in this locality increased during the year and active operations have been carried on.

Messrs. T. Jones and party took over the Old Republic Company's property at Healey's Gully, and are engaged opening up their two claims. The party's water-race is the principal source of trouble, as it is constructed on steep sidelings along Roaring Meg Creek, and is subject to slips which carry away chains of the race at a time.

The Montgomery Terrace Company were engaged working their claim below the Old Republic, but the returns from their work are only fair.

Aynsley Brothers bought the claim and water-rights formerly held by Joseph Shrives, and have been working the ground below the Montgomery Terrace claim and are said to have done well. The fall in the bottom has, however, given them some extra work, and they are now going to open up from the Grey River again with a new tail-race.

At Garden Gully, Paparoa Mountains, a considerable amount of prospecting for quartz was carried on by Curtis and party, and they have had a small battery at work, but the results are not known.

Duffer's Creek.—There were about a dozen miners working in this locality during the year, but most of the alluvial wash is worked out. Baybutt and party are the only ones working new ground, and they are making good wages.

Noble's.—There were very few miners working in Noble's Creek during 1908, as all the easy alluvial ground is worked out. Cowie and party had their dredge working in Mosquito Creek, and got a fair amount of gold during the year.

Orwell Creek.—There are still a few miners working in this creek, but there is plenty of payable ground which would give employment to a considerable number of men. The only new claim opened up during the year was one at Napoleon Hill, held by J. McAuley, who got good returns during wet weather.

Callaghan's Creek.—About the same number of miners worked in this creek, and the Callaghan's Creek Company's dredge has almost worked out their claim.

No Town Creek.—No new ground has been opened up in this locality for some time, but there are about the same number of miners working. The No Town Creek Company's dredge, which is working in the creek, had a good run right through the year, and averaged about 35 oz. per week.

Reefton Subdistrict.

Quartz-mining.

Consolidated Goldfields of New Zealand (Limited).—The properties owned by this company in the Reefton District consist of two groups of mines—viz., the Wealth of Nations group, which includes the Energetic and Wealth of Nations claims, situate at Crushington; and the Golden Fleece group, which includes the Golden Fleece, Royal, and Ajax claims, and is situate at Black's Point and Murray Creek, about two miles from the Town of Reefton.

The Wealth of Nations group has been continuously worked during the year, and a large amount of development-work has been carried on in the mine, and improved equipment installed in the crushing plant. New tube mills and agitators have been installed.

The Golden Fleece group has not developed so well, and, after a great amount of prospecting to try and locate a payable ore-body, the company decided to let the mine on tribute. A party of twelve tributers and a number of wages-men are now employed in this mine, and so far have obtained payable returns.

The Progress Mines (Limited).—This well-known mine is by far the largest in the district. The mine is situate on what is known as the Globe Hill, about five miles from the Town of Reefton, and the crushing plant is erected on the bank of the Inangahua River opposite the Town of Crushington, the ore being conveyed from the mine-mouth to the battery along an aerial-tram line. The mine and crushing plant have been kept constantly going throughout the year, and a very large quantity of ore has been treated. This company are the owners of several special claims of a total area of 740 acres, besides a coal lease of 48 acres, from which coal is obtained to drive the engines at the mine. The crushing plant is driven by water-power, which is obtained from the Inangahua River by means of a water-race some ten miles in length. No new developments have taken place in this mine during the last twelve months.

The Blackwater Mines (Limited).—This mine is situate in the Blackwater – Snowy Creek district, and consists of a group of five special claims aggregating 390 acres, and includes what was originally known as the Snowy Creek Gold-mining Company's special claim, which the Blackwater Mines Company purchased from Mr. G. Batira, after acquiring Mr. Kingswell's interest in the newly discovered reef at Blackwater. During the year a very great amount of work has been carried on in connection with this mine. The crushing plant was completed about the middle of the year, and crushing operations were commenced in the month of July. The mine and battery have been kept continuously at work ever since with payable results. The crushing plant is worked by water-power, obtained from the Snowy Creek by means of water-races constructed on a higher level. A long adit tunnel and tramway lead from the mine to the battery-site, which is situate in the bed of Snowy Creek.

The New Big River Gold-mining Company (Limited).—This mine is situate about twenty miles from Reefton, and is reached by a main road traversing the gold-bearing area, which extends all the way from Reefton to the Big River district. The company possesses two special quartz claims of a total area of 100 acres, and a prospecting license of 80 acres, together with water-races, special sites, and aerial tramway, all situate at Big River. It has also recently acquired the machine-site and water-rights in Deep Creek recently owned by the Gold Lead Company, now defunct. A coal lease of 53 acres on the Deep Creek fall has also been granted to the company. During the year steady work has been carried on in this mine, and very good returns have been obtained. Several dividends have been declared. A ten-stamp crushing-machine (water-driven), two Wilfley concentrators, and a cyanide plant, formerly owned by the New Scotia Company, constitute the battery department of the mine, and have been kept constantly employed during the year.

The Keep-it-Dark Quartz-mining Company (Limited).—This old-established mine is situate at Crushington, about three miles from Reefton, and has now been working for many years. The company are the holders of five special claims of a total area of 118 acres, and during the year have acquired a prospecting license of 100 acres north of and adjoining these areas. A water-race of sixty heads from the Inangahua River supplies motive power for the twenty-head stamper-battery, while steam is used for haulage purposes at the mine. An efficient cyanide plant is installed in connection with this mine, and the treatment of the ore, which is of rather poor grade, is carried on in such an economical manner that quartz which at one time would have been discarded is now made to pay at least working-expenses. The work in this mine has been carried on continuously during the year, but the ore, though plentiful, has been poor, consequently no dividends have been declared for some time. The prospects for the future, however, are considered good, and hopes are entertained of increased returns during the present year.

The Caledonian United Gold-mining Company (Limited).—This mine is situate at Larry's Creek, about sixteen miles from Reefton, and consists at present of a prospecting license of 100 acres. The work during the year consisted in sinking the main shaft, from which it is intended to drive in order to strike the reef which was known to exist in the lease when it was abandoned years ago on account of the influx of water. This shaft has now been sunk to a depth of 275 ft., and after sinking another 20 ft. to provide storage for water a start is to be made to drive the first level. Work has been considerably hampered owing to the great influx of water; but this difficulty has been got over by the use of powerful pumps.

The Golden Arch Gold-mining Company (Limited).—This company, formed during the year, has taken over the special claim and other mining privileges owned by J. Knight and party at Italian's Creek, in the Capleston district. A ten-head stamp-battery, worked by an oil-engine, has been erected, and a good deal of development-work has been carried on during the year. This company should provide work for a number of hands in the near future.

The Wellington Mines (Limited).—This company, which was formed about a year ago, first acquired the property situate at Murray Creek, and known as the Golden Treasure Mine. On this claim a good deal of prospecting was carried on last year, in the hope that payable antimony as well as auriferous ore would be found to exist. Later on the Inglewood Victoria Mine was purchased from a syndicate who had taken the mine over from Mr. P. N. Kingswell. Very little work has been done on either of the company's mines during the year, protection having been granted in order to allow the directors an opportunity of obtaining capital to suitably develop the ore-bodies which are supposed to exist on both of these properties.

The New Ulster Quartz-mining Company (Limited).—This mine is situate in the Painkiller district, between the Golden Fleece Mine and the Waitahu River, and consists of a special quartz claim of 100 acres. The company was formed early in the year, and took over the property from a syndicate that had been diligently working to the best of their ability for some time. A five-stamp battery and cyanide plant has been erected, and an oil-engine for driving-purposes installed. A quantity of quartz has been crushed during the year which has proved payable, but so far no dividends have been declared to the shareholders.

Kirwan's Reward Mine.—This property was purchased by Mr. P. N. Kingswell when the original company went into liquidation last year. The new owner has spent a considerable amount in driving and prospecting during the year, unfortunately without success. Mr. Kingswell has now surrendered his title to the ground, and another party has taken it up with a view to further prospecting.

The St. George Extended Quartz-mining Syndicate.—This syndicate have taken up a special claim of 30 acres known originally as the St. George, and also a prospecting license of 100 acres adjoining. Two or three men have been constantly employed during the greater part of the year prospecting these leases, and so far with a certain amount of success, some very good ore having been discovered.

The South Big River Syndicate.—This syndicate have taken up prospecting licenses in the Big River district, known as the Conquest and other claims, and have been vigorously prospecting them for the past six months. So far nothing of a permanent nature has been discovered.

Several other prospecting syndicates have been formed during the year, and a number of prospecting licenses have been acquired from the Court, but no new finds of any value have been reported.

Dredging.

Six dredges have been carrying on operations in the Reefton District during the year with more or less success.

In the Boatman's Creek the Hessey, Cameron, and Tacon (Limited) dredge has been working continuously. As the land being worked is freehold, no mining titles are held in connection with the dredge.

The A1 Dredging Syndicate, Messrs. Rogers, Butland, and Ferris, who acquired the dredge and mining privileges owned by the A1 Gold-dredging Company (Limited) have been running their dredge with payable results almost continuously throughout the year.

The Slab Hut Creek Gold-dredging Company (Limited) have been working the bed of the Slab Hut Creek in the vicinity of the Tawhai Railway-station for some years with a fair amount of success. This year, however, the returns have been rather poor.

At Antonio's Flat there are two dredges at work, the Workshop Gold-dredging Company (Limited) and the Antonio's dredge, now owned by Messrs. Hessey and Cameron. Very good returns have been obtained by the former dredge right from the commencement of operations. The latter dredge has now been started again under the new ownership, and payable returns are now being obtained.

At Blackwater the Blackwater Creek Gold-dredging Company are still getting payable gold, and have been carrying on operations continuously during the past year.

Alluvial.

A certain amount of alluvial mining is still being carried on in this district, but, as the area of alluvial deposit is restricted, no ventures of any consequence are exploited.

A number of alluvial miners, both European and Chinese, still make a fair living at Blackwater, Waiuta, Merrijigs, Antonio's, and Capleston districts, but no new discoveries of any consequence have been made during the year.

General.

The work in the Warden's office and Court at Reefton during the year has been about the average, and the number of applications for mining privileges compares favourably with previous years.

In the Waiuta-Blackwater district a large number of residence-sites have been taken up by the miners employed by the Blackwater Mines Company, and these are now building comfortable homes for themselves and their families.

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

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

SIR,— Warden's Office, Hokitika, 7th April, 1909.

I have the honour to report as follows concerning mining in my district for the year 1908 :—

KUMARA SUBDISTRICT.

Sluicing.—Several new claims were taken up in the vicinity of Westbrook and Cape Terrace in anticipation of the extension of the Government water-race across the Teremakau River, for the survey of which a sum of money was voted at the last parliamentary session. Application was made in December for the necessary mining privilege to enable the water to be so conveyed by the Crown ; and a right for a branch water-race from the main Government race at Larrikin's over the said river and through Hayes Terrace to Cape Terrace, a total distance of about six miles, was granted. The deep-level drainage-tunnel was placed in repair, and a winding-shaft sunk. The extension of No. 3 channel was completed. McGrath and party and the Long Tunnel Gold-mining Company worked fairly regularly, and the returns were fairly satisfactory to those interested. The former party has put in several prospecting-tunnels at considerable expense, one of which was driven upwards of 1,500 ft. through hard pug.

Dredging.—Two dredges worked on Greenstone Creek, and, I understand, paid a little more than expenses.

General.—One hundred and forty-six applications were dealt with in the Warden's Court, and 279 miners' rights issued, being an increase of 65 and 119 respectively on the previous year.

STAFFORD SUBDISTRICT.

Sluicing.—The returns from the claims in work during the year have, I am given to understand, been satisfactory. Linklater and party opened up a new claim at Tunnel Terrace, and Hanrahan and party another at Goldsborough : both, I believe, have proved payable. The three claims being worked at Middle Branch by Hanrahan and party, Shannon and party, and Atkinson and party, I am informed, yielded good results. At Callaghan's, Henry and party commenced the construction of a sludge-channel, which work was subsidised by the Government, and it is confidently expected that when the same is completed it will open up a considerable area of auriferous ground. The Wheel of Fortune claim, which gives permanent employment to twelve men, worked steadily during the year. The special claim of 19 acres adjoining the old claim at Quinn's Terrace was granted to the owners, who now hold a total area of 63 acres. Pimpernell and party commenced the construction of a siphon from the Government water-race at Tunnel Terrace to German Gully, a distance of about a mile, over very rough country, and completed it successfully in October last in spite of many natural obstacles, owing to the valuable assistance rendered by Mr. James Rochford, manager of the Kumara Water-race. This party has now a continuous supply of water, and worked without a break to the end of the year. The returns amply justified the expenditure incurred, which was subsidised by the Mines Department. Two prospecting-areas were applied for at Auckland Beach by the Dominion Gold and Ironsand Company. Under the supervision of the officers of the Mines Department, the contractors for the Kelly's Terrace drainage-tunnel extension made good headway, and it is expected that when complete this tunnel will enable several claims to be worked successfully which could not be so worked in the past. Miners from the locality predict good returns when the ground is opened up.

Dredging.—The Stafford Dredging Company worked continuously on its claim at Waimea Creek, but I cannot state what amount of gold was obtained.

General.—Seventy-four applications were dealt with by me in my capacity as Warden.

HOKITIKA SUBDISTRICT.

Sluicing.—Nine beach claims of small areas were applied for and granted at the Arahura. Morrison and party purchased the mining privileges formerly held by Minerals Limited and worked with satisfactory results. At Gentle Annie Terrace, Mr. Acaster, with the assistance of a subsidy, drove a tunnel over 200 ft. and intersected a number of alluvial drifts. Steady work, with satisfactory results to the parties engaged, was performed at Back Creek and Governor's Terrace. A Drainage Board was formed at the latter place, and a tunnel for the purpose of enabling the lower levels to be worked was constructed a distance of 944 ft. with the aid of a pound-for-pound subsidy. At Kelly's Terrace Sul-

livan and party drove the drainage-tunnel, the construction of which was commenced many years ago, a further distance of 858 ft., and cut through a valuable body of wash. This work was subsidised to the extent of two-thirds.

Dredging.—The Dominion Gold and Ironsand Company took up the dredging claim formerly held by the Montezuma Gold-dredging Company (Limited), on the sea-beach, to the north of Hokitika, and erected an experimental plant for treating the black sand by electro-magnetic extraction; but the results were not at all satisfactory to those interested in the venture.

Reefing.—The only parties at work at the Wilberforce were a syndicate who took over Baucke's and Fidde's claim; also Messrs. Caliari and Baucke. A distance of 70 ft. was driven along the reef by the syndicate, when a fault was found which extended for 12 ft. The reef was then traced beyond the fault for another 40 ft., and although the body of stone was not so large (the average width over the 70 ft. being from 2 ft. 6 in. to 4 ft.), still gold could be distinctly seen in the stone, and the prospects for the future are considered hopeful. Messrs. Caliari and Baucke prospected to the north of this claim on the same line of country, and the results were stated to be encouraging.

Ross Subdistrict.

Sluicing.—The Mont d'Or Gold-mining Company (Limited) was as successful as usual, and the shareholders received regular dividends. Two special claims of 100 acres each were granted to the Ross Goldfields (Limited), and the company also acquired the old drainage adit. The adit was cleaned out and retimbered at a cost of £1,300. The old shaft of the late Ross United Company, the previous owners of one of the claims, was also cleaned out and retimbered as deep as the 90 ft. level. A large portion of the electric line required to transmit the power for the working of these claims from the power-station near Kanieri Forks was erected. Some sixteen prospecting licenses, over 1,040 acres of Crown land, were granted. Messrs. Ford and Coughlan, asssisted by a Government subsidy, drove a tunnel 700 ft., and struck old workings, as a consequence of which they made little more than wages. Mr. Antonio Traversi, also assisted by the Department, put in a tunnel in the same locality.

Dredging.—Messrs. Robertson and party continued working during the year with fair results, and applied for and obtained a further special dredging claim of 21 acres.

General.—Town sections were much in demand, and leases were granted of sixty-seven. Six residence-sites were also taken up.

Okarito Subdistrict.

The only mining operations consisted of the desultory washing of patches of black sand.

I have, &c.,
R. Acheson, Warden.

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

Sir,— Warden's Office, Lawrence, 13th April, 1909.

I have the honour to present herewith my annual report for the year ending 31st December, 1908:—

Weatherstone and Bluespur.

In Weatherstone only two claims are being worked—viz., The Golden Crescent Sluicing Company (Limited), and Messrs. Smyth, Adams, and Donlan's special claim, known as the Golden Rise party. These claims both had a fairly good run of work, the water-supply being good for the greater part of the year. The value of the gold won by the former claim was about £1,500 for the year; the latter being a private concern, the returns are not made public.

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, 223,460 cubic yards; gold won, 1,634 oz.; cost of winning gold, £4,175; amount paid in wages, £2,871; amount paid for explosives, £181; amount paid for upkeep of races, £632. The water-supply was far better during the year than it was for the two previous seasons.

In Munro's Gully three special alluvial claims are being worked—viz., Messrs. J. Kitto and party, P. P. Thomas and party, and E. C. Browne and party. Water has been plentiful at each claim, good work has been done, with returns satisfactory. The dam constructed by Messrs. E. C. Browne and party at the head of the Tuapeka Bush during the year has proved a great benefit, and insured a continuous supply of water for their claim in Munro's Gully.

Tuapeka Flat.

On account of the returns not being satisfactory during the past year, the shareholders in the Tamaiti Gold-mining Company (Limited) decided in December last to let the claim and plant on tribute to Messrs. R. M. Murie and A. Norman Wakefield, who have overhauled the pumps and improved the plant, with the result that the yield of gold from the mine has considerably improved.

Waitahuna.

The Havelock Sluicing Company, mentioned in my last year's report as a new venture, is now in full work. The construction of the water-race, which carries fifteen heads, was of considerable magnitude, involving a very large expenditure. It is nine miles in length and takes its rise from the Waitahuna River, a little above what is locally known as Waitahuna Falls. In the course of the race are

two tunnels, one 400 ft. in length and the other 350 ft. There are also five siphons, one of them being 3,700 ft. in length, the pipes being 20 in. in diameter. The yield of gold from the claim has been satisfactory.

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

Waipori.

There are only three dredges now working in this locality: the Jutland Hydraulic Company, the Waipori Consolidated Gold-dredges (now let on tribute to Messrs. De Latour and party), and Edward Hughes (the old Empire claim).

The sluicing claims in this subdistrict have had a plentiful supply of water for the greater part of the year, enabling work to be carried on continuously to advantage.

The Terrace claim, opened out by Messrs. F. W. and W. E. S. Knight during the year, is yielding satisfactory returns, and the Deep Lead being worked by Mr. J. T. Johnson is also yielding satisfactorily.

The old Canton reef has recently been taken over by a new company, and operations have been commenced to get the mine in working-order.

Gore and Surrounding Districts.

In this district mining operations are confined entirely to dredging: at the close of the year twenty-six dredges were in active work.

The dredging on the Mataura River has now ceased, the dredges having been sold and removed.

At Waikaka good results are being obtained. There are nineteen dredges at work, obtaining payable yields.

At Charlton there are still three dredges at work meeting with fair success.

At Waimumu there are three dredges also working, but the yields are not so good.

Waikaia.

The mining industry in this subdistrict is still in a prosperous condition, and further developments have been made during the year. Two new dredges have commenced work, and the construction of the water-race for the Muddy Terrace Sluicing Company, which is to cost something like £30,000, has been pushed on with all speed, giving employment to a very large number of men, and the company hope to commence sluicing operations very shortly. During the year there have been sixteen dredges in constant work, and all yielding satisfactory returns. It is estimated on good authority that about 70,000 pounds' worth of gold has been won in this subdistrict during the year. The amount of revenue collected by the Receiver of Gold Revenue and Clerk of Courts for rents, royalty, and fees for the year was £500.

There are about three hundred Europeans engaged in dredging, sluicing, and working on water-races in this district, and also about twenty-five Chinese engaged in mining.

The Nokomai Hydraulic Sluicing Company (at the Nokomai) has had pretty constant work for the year, with a good supply of water and satisfactory returns.

The Deep Stream Gold-mining Company (Limited) still continues to carry on mining operations at Deep Stream, but during the year the company surrendered all the special claims previously held and obtained a grant of a smaller area.

I have, &c.,

William George Kenrick, Warden.

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

Sir,— Warden's Office, Queenstown, 17th April, 1909.

I have the honour to report in regard to mining in the different centres in the district for the year ending 31st December, 1908, as under:—

Queenstown-Arrowtown.

Gold-mining in and around Queenstown is not very brisk, but there is considerable activity in regard to mining for scheelite and kindred minerals at Glenorchy.

There has been a considerable revival of mining about Arrowtown, chiefly in reefing at Macetown, and as the result of Government assistance given by way of subsidy to the Lake County Prospecting Syndicate.

Cromwell.

There is a considerable interest still taken in dredging in this district. All the dredges are at work and obtaining payable returns, and a number of fresh claims have been taken up. Some applications have been made for quartz claims at Bendigo, but dredging is the form of mining chiefly followed in the district, and I think there is every prospect of it keeping up. At Nevis dredging and sluicing is still being carried on, and is likely to be so carried on in the future.

Clyde and Roxburgh.

Mining in this part of the district generally is in about the same condition as last year. At Alexandra a slight revival has taken place owing to the discovery of payable gold at a place hitherto unworked. The method of working is sluicing, and most of the payable ground has been taken up in small areas.

At Roxburgh considerable interest is being taken in prospecting the old river-beds, a Keystone borer being now engaged in this work. The number of applications for land and water dealt with in this Court shows that a considerable amount of labour and capital is being expended in mining in the district.

I have, &c.,
J. E. Evans, Warden.

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

Sir,— Warden's Office, Invercargill, 27th April, 1909.

I have the honour to submit herewith the annual report on the several mining subdivisions in my district for the year ending 31st December, 1908 :—

Round Hill.

The only mining companies now at work on this field are the Round Hill and Ourawera companies. There are still a few individual miners carrying on mining operations, but not to a very great extent.

Round Hill Mining Company.—At the beginning of the year operations were much retarded by the meagre rainfall, which had a disastrous effect on the gold-returns. Consequently the profit at July (the end of the financial year) was small. After April, however, matters improved, and the two elevators worked fairly continuously throughout the year. About 1,200,000 cubic yards were mined. The mining-area held at present is about 140 acres. The water-races are in fairly good condition. At the end of the year an electric-light plant was installed by the National Electrical Company of Dunedin, and is working satisfactorily.

Ourawera Gold-mining Company.—This company was also handicapped by the scarcity of water in the early part of the year. During the latter part of the year the ground worked was very irregular in depth, and poorer than was expected. Consequently, it has not been a very successful year for the shareholders. However, the elevator has now been removed to Italian Gully, which is supposed to be the richest part of Round Hill. An aerial tram has been erected, which, worked by the hydraulic winch, should effect considerable economy in the removal of stones and logs, as its operation is quicker than that of a sledge.

Orepuki.

Matters are practically unaltered as regards the development of mining in this place, and the same number of miners seem to be kept at work. But some of them have turned their attention to the Pahia field, situated between Orepuki and Round Hill. It is known that payable gold exists there, but great difficulty is occasioned in working the ground on account of the want of an outlet for tailings. Should Okoia Creek be proclaimed a sludge-channel, there is no doubt that a very payable goldfield will be opened up. The Pahia Sluicing Company are handicapped by this difficulty and also by the existence in the neighbourhood of several freehold properties, the owners of which object to the pollution of the creek.

During the year the Chun Wah Tong Company ceased operations, and have transferred their rights to John Whelan.

A large area of the land in the vicinity of the township is being surveyed, and is to be offered for selection by the Land Board on renewal-lease terms. The question of compensation was discussed by me with the Miners' Association, and it was mutually arranged that this land should be leased upon the condition that the leased land be opened for prospecting and mining free from compensation, except for buildings.

Preservation.

Increased activity has been displayed during the year in connection with the development of the mining industry in this locality. Four companies have been floated, to date, to work ground around the inlets—viz., the Tarawera, Morning Star, Crown, and Gulches' Head Companies; but the areas held are at present under protection either on account of the scarcity of water or for the purpose of allowing time to procure suitable machinery to work the ground.

Wyndham.

Mining is almost a dead-letter in this subdistrict. As far as I can learn, the only persons mining are Mr. C. R. Brunton and Mr. William Bennett, both having claims on the sandhills at Haldane, on the south coast. I understand the former has been fairly successful.

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

ANNEXURE C.

REPORTS OF DIRECTORS OF SCHOOLS OF MINES.

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

SIR,— Dunedin, 21st April, 1908.

I have the honour to present my annual report on the Otago School of Mines for the year ended 31st December, 1908.

The mining school showed an attendance for the year of twenty-six students, of whom twenty were matriculated undergraduates of the University of New Zealand. Of the twenty-six registered students, nine were entered for the A.O.S.M. course, nine for the certificate in geology, four for the certificate in practical astronomy, two for the certificate in dental metallurgy, and one each for the certificate in general metallurgy and assaying. Five students in their final year completed the full course in the division for which they had entered.

ANNUAL EXAMINATIONS.

Twenty-six students presented themselves for examination in eighteen subjects, and all passed except one in mineralogy and one in mathematics.

DIPLOMAS AND CERTIFICATES.

Fourteen graduates of the mining school, having passed the prescribed classes and presented satisfactory evidence of time spent in practical work, as required by the regulations, were awarded the diploma of Associate, and certificates as under: Ernest Douglas Isaacson, A.O.S.M., in Mining; Hugh Roy MacDonald, A.O.S.M., in Mining; Alexander Gordon Macdonald, A.O.S.M., in Mining; George Dey, A.O.S.M., in Mining; Philip Hastings McDouall, A.O.S.M., in Mining; Fred Wesley Thomas, A.O.S.M., in Metallurgy; Arthur Mosley, A.O.S.M., in Metallurgy; Philip Hastings McDouall, A.O.S.M., in Metallurgy; Robert Lee, jun., A.O.S.M., in Mining, also in Land and Mine Surveying; Harold Hamilton, A.O.S.M., in Geology; Wm. R. Frost, A.O.S.M., in Mining; I. W. H. Sargeant, A.O.S.M., in Metallurgy; J. F. McPadden, A.O.S.M., in Metallurgy; A. Spencer, A.O.S.M., in Metallurgy; Hugh Roy Macdonald, certificate of land and mine surveyor; Edward Fletcher Roberts, certificate of land and mine surveyor; Fred Wesley Thomas, certificate of metallurgical chemist and assayer.

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

	Issued up to End of 1907.	Issued in 1908.	Total.
Mining	82	7	89
Metallurgy	42	6	48
Geology	14	1	15
Totals	138	14	152

POST-GRADUATE WORK.

The Government Research Scholarship for Otago for the year 1908, of the value of £100 a year, tenable for two years, was awarded to Mr. A. Gordon Macdonald, A.O.S.M., B.E. (Min.), who is at present engaged in an investigation on the "Distribution and Economic Value of the Brown Coals of Otago."

The Bewick-Moreing post-graduate place for 1908 was awarded to Mr. Norman Shand, A.O.S.M., who has been placed at the New Zealand Talisman Mine at Karangahake.

NEW MINING-SCHOOL BUILDING.

The new building is a handsome structure, containing eight laboratories, three lecture-rooms, a museum, student's library, photographic room, store-rooms, lavatories, and cellars. It is lit throughout with electric light, and when the fittings and apparatus are placed in position it will rank among the best-equipped and most commodious mining schools in Australasia. It is hoped that everything will be ready for the formal opening in June of this year. The occupation of the new buildings will improve our local status. The Otago School of Mines has always occupied a prominent place among Australasian mining institutions, and it is pleasing to find that it possesses some distinction even further abroad. At the last Mining Conference, held at Chicago, the Otago School of Mines, in the discussion that took place on the training of mining engineers, was grouped among the leading mining schools in the English-speaking world.

Course in Electrical Engineering.

The New Zealand University, on the recommendation of the English Examiners in Mining Engineering, sitting in conference in London at the end of 1906, has very wisely added electricity to the course for the B.E. degree; and it will now be necessary for the Otago School of Mines to make provision for the new requirement. The applications of electricity to mining and metallurgy are many and daily increasing, and in all up-to-date mining schools instruction in practical electricity forms an integral part of the regular course. This will necessitate a revision of the existing mining and metallurgical associate courses, which have now been in use without amendment for eight years. Experience has shown that improvements can be effected in several directions, and steps will be taken at an early date to prepare the amended courses for incorporation in the Calendar for 1910.

Applied electricity cannot be taught without electrical machines and apparatus, and until these are procured our mining students will be required to take the course in electrical engineering given at the Dunedin Technical School, where a good course of instruction is taught by Mr. E. F. Stark, D.Sc.E.E., M.Am.Inst.E.E.

Satisfactory arrangements with this end in view have already been made with Mr. A. Marshall, B.A., Director of the Technical School.

Tanna Hill Geodetic Station.

This station was linked up by triangulation with the Government Geodetic Initial Station A, at Taieri West, the latitude and longitude being reduced in terms of the Carrington spheroid. Bearings, taken in terms of Taieri West meridian, cleared of convergence, were checked by observations to α Hydri, β Trianguli (Aust.), and σ Octantis, the results showing a difference of only 3″ of arc as between the computed and observed bearings.

The following data is recorded for the information of surveyors and engineers:—

Tanna Hill, latitude 45° 52′ 11·3″ S.; longitude 170° 32′ 19·0″ E.
Convergence of meridian, Tanna Hill to Taieri W. initial, 10′ 1″ E.
Bearing Tanna Hill to Flagstaff, 314° 49′ 57″.
Bearing Tanna Hill to Signal Hill, 63° 10′ 30″.
Bearing Tanna Hill to axis of clock in Town Hall Tower, Octagon, 225° 46′ 57″.
(All bearings are given in terms of Taieri West initial.)

With the object of facilitating the computation of differences of latitude and longitude and the reversed geodetic azimuth between trigonometrical stations, the author has computed the value, in links, of a second of arc of latitude and longitude for every degree and half-degree of latitude from the equator to 60° latitude. The values are set out in terms of a spheroid with a compression of 1 in 294, and are contained in a table on one page of the author's "Text-book on Theodolite Surveying and Levelling" in both the English and American editions. At the present time, differences of latitude and longitude and reversed azimuths are computed in India by the Everest spheroid; in Great Britain by the Clarke spheroid of 1858; and in the United States of America by the Clarke spheroid of 1866, involving in each case the use of long and elaborate tables of constants. The author's table gives results that for minor and major triangles do not differ more than a fraction of a second with those obtained by the use of the longer P Q R tables involving the application of three or four constant factors; and effects a considerable saving of time, besides diminishing the tendancy to err in computation.

Laboratory.

During the past year seventy-one samples of ore and mineral substances were assayed for the public by Mr. Waters at schedule rates, and in the same period forty-seven samples of rock, mineral, &c., were examined and reported on by Professor Park, fifty-eight by Professor Marshall and by Mr. Waters, all free of charge.

Acknowledgments.

In conclusion. the Director of the School of Mines wishes to place on record his appreciation of the zeal and ability with which Professor P. Marshall, Mr. W. B. Waters, and the assistants have carried out the work of their several departments during the year covered by this report.

I have, &c.,
James Park, Director.

Mr. A. H. V. Morgan, M.A., Director of the Waihi School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Waihi, 31st March, 1909.

I have the honour to present my report for 1908. The average number of students was sixty-one, and the average class attendance 161. These figures, though slightly lower than the corresponding figures for the previous year, are very satisfactory, and quite up to the average to be expected from a town of the population of Waihi, according to the experience of mining and technical schools in other places. A notable feature during the last three years has been the steady increase in the number of *bona fide* mining students.

Examinations.—At the annual examinations conducted by the Mines Department last December 32 candidates presented themselves for the written papers and 14 for the practical tests. The results are exceedingly satisfactory, 24 first-class, 25 second-class, and 8 third-class certificates being obtained, and only five papers failing to secure certificates. In addition, 15 passes were recorded in the practical

examinations, and 2 students (G. C. Evans and K. Cowles) qualified for the bullion-assayers' certificate issued by the Department of Trade and Customs. This record is by far the best obtained by any school of Mines in the Dominion. A comparison of the results is shown below: Waihi School—32 candidates—24 first-class certificates, 25 second-class certificates, 8 third-class certificates, 5 failures; other schools—54 candidates—13 first-class certificates, 12 second-class certificates, 17 third-class certificates, 31 failures. In eleven subjects students of the Waihi School obtained the highest marks in the Dominion. In addition, the only School of Mines Scholarship awarded was won by a student of this school (C. Milne), with the excellent average of 78·5 per cent. in nine subjects. This scholarship is of the annual value of £50, tenable for three years, and entitles the holder to free tuition at either Auckland or Otago School of Mines. The gold medal presented by the President (Mr. Gilmour) for the highest aggregate in any four subjects was this year won by J. R. Spearing. Mr. Livesey's gold medal for mining subjects was won by J. R. Halliday. Mr. M. J. Haszard's gold medal for surveying was won by A. N. Anderson, with 85 per cent. Mr. C. L. Clarke's gold medal for mechanical drawing was won by C. Milne with 80 per cent. A number of other prizes, consisting for the most part of valuable text-books, have been donated by the Engine-drivers' Association and the School of Mines Council.

Government Certificates.—At the 1908 examination for New Zealand Government certificates, held in January, 1908, 2 students obtained partial passes in the first-class mine-managers' examination. In the examination for battery-superintendents, 2 students gained certificates and 2 partial passes. At the 1909 Government examination, three students—Messrs. E. A. Katz, O. Bell, and J. R. Spearing—obtained first-class certificates of competency as mine-managers, and one student obtained a partial pass. Altogether 26 students of this school have obtained certificates as first-class metal-mine managers, 2 as first-class coal-mine managers, 39 as battery-superintendents, and 13 as bullion-assayers under the Customs Department.

General.—During the year much-needed additions and alterations were carried out to the school buildings. We have now a compact and convenient building, which should be sufficient for all requirements for some time to come. A useful adjunct is the students' library, while the museum will enable the thousands of specimens at present stored away in cabinets to be effectively displayed. The workshops should prove of great service to the students of electrical engineering, while the extra lecture-room will relieve the congested condition of the school, and enable a more convenient time-table to be formulated.

A useful innovation inaugurated by the Mines Department is the establishment of a circulating library of standard mining literature. The books will be issued free of charge to mining students, who will be allowed to retain them for study for a certain period. By this means students have access to the best works of reference on mining and kindred subjects, which they would otherwise be debarred from obtaining on account of their high cost.

In conclusion, I wish to express my appreciation of the excellent conduct of the students during the past year, and of the zeal and ability displayed by Mr. F. Seelye, Mr. A. T. Ellis, and Mr. R. H. Mitchell, of the school staff. I take this opportunity also of conveying my sincere thanks to the Council and the secretary for their unfailing support and assistance.

I have, &c.,
A. H. V. Morgan, Director.

Mr. W. H. Baker, B.Sc., Director of the Thames School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Thames, 17th April, 1909.

I have the honour to report on the work of the Thames School of Mines as follows:—

Attendance.—Owing to the continued depression in mining, the attendance remains practically the same as for the past year; but as the mining-outlook is at present more hopeful, with the recent developments in the Taranaki District and the prospective deep-level developments, I anticipate a material increase.

In order to centralise the teaching of chemistry, and to avoid duplication of lectures, a class in chemistry was commenced this year for the senior High School pupils. At the same time an elementary class has also been formed in electricity and magnetism for the benefit of secondary and advanced-primary school pupils. Both these classes have a very satisfactory attendance, and, as a certain proportion of students attending them will eventually become regular students, it is certain that they will beneficially affect the future of this school. The following shows the attendances during last and the present year: 1908—Individual registered students, first term 24, second term 26, third term 34: attendance at classes, first term 36, second term 48, third term 55; Saturday science class, first term 21, second term 18, third term 17: total class attendance, first term 57, second term 66, third term 72. 1909 (first term)—Individual registered students, 29: attendance at classes, 44; Saturday science class, 26; High School chemistry class, 28; elementary electricity, 17: total class attendance, 115.

Examinations.—At the annual examinations 13 students sat in nineteen subjects: 4 obtained first-class, 4 second-class, and 5 third-class certificates. Two students, John Pearce Rickard and Charles Bateman, qualified for the Government assayer's license. Two candidates sat for the Government examinations, one for gold- and one for coal-mine manager's certificates. In the previous examination Sydney G. Baker succeeded in passing the mine-manager's examination.

A special note of congratulation is merited by Dr. James Malcolm McLaren, who is the first Thames School of Mines student to obtain the degree of Doctor of Science.

Staff.—At the beginning of 1908 Mr. Henry Dodson was appointed electricity instructor, and is conducting the classes most satisfactorily. In August Mr. J. T. Mountain resigned his position as

drawing instructor, and the vacancy was filled by Mr. A. V. Newman, who is carrying on the work very efficiently.

Equipment.—Additions have been made to the electrical plant, to enable practical workshop tests to be carried out, and this branch is now well fitted up. On the 15th August, 1908, the contractors, Messrs. Judd and Sons, commenced the demolition of the old treatment plant and the erection of the new, and completed their contract in the beginning of the year. The new plant is an "all-sliming" plant, but is readily adaptable to coarse crushing and concentration. The plant briefly consists of rock-breaker, self-feeder, three-stamp battery, copper plates, Wilfley concentrator, spitzkasten, tube mill, B. and M. agitators, filter-tank, and extractor-boxes, with necessary pumps and elevators. The working-tests possible with the mill are—(1) ordinary battery process, (2) coarse crushing and concentration, (3) all-sliming and cyaniding. Ten tons of ore are now on hand for treatment as soon as a small air-compressor is installed.

The museum specimens are continually being added to, and I have to thank Messrs. Barclay, Stansfield, Bush, Sullivan, Adams, Baker, McCormick, and others for donations of specimens.

During the year I have discovered two minerals new to the district which are of special interest, as being in both cases associated with high gold-values. The first is a telluride mineral brought in by Mr. A. Whitley, and occurs in the Waitangi Mine, Tarau, in bands associated with blende and copper-pyrite. As far as my investigations go, it is a mixture of hessite and tetradymite. Some samples on analysis showed 20 per cent. of tellurium; but it is practically impossible to get the pure mineral isolated. The second mineral, discovered through Mr. J. O'Sullivan, is from the Magnet Mine, Karaka Creek. It is a splendid specimen of enargite, occurring as a secondary mineral in a vein of pyrite and barite; it is generally accompanied by high gold-values.

The assay department has been kept busy. In 1908 over three hundred assays were made for the public, and this year seventy-eight assays were made. The institution of free assays for prospectors is being largely availed of, and cannot but help the mining industry.

I have, &c.,
W. H. Baker, Director.

Mr. C. A. Cotton, M.Sc., Director of the Coromandel School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Coromandel, 23rd April, 1909.

I have the honour to report as follows on the work of the Coromandel School of Mines for the year 1908:—

The number of students on the roll was—for the first term, 15; for the second term, 15; and for the third term, 14.

Instructions were given in the following subjects: Mathematics, chemistry, assaying, metallurgy, geology, mining subjects, surveying, and mechanical drawing.

During the year 138 assays were made for the public.

The present year has begun satisfactorily. The number of students on the roll at present is eleven, with a class attendance of thirty-two. Most of the students are making satisfactory progress, and paying great attention to their work.

I have, &c.,
C. A. Cotton, Director.

Mr. F. W. Reid, A.O.S.M., Director of the Karangahake School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Karangahake, 17th April, 1909.

I have the honour to submit the following report on the work of the Karangahake School of Mines, and of the branch school at Waikino, for the year ending 31st December, 1908:—

As it was in September of last year that I was appointed Director, my information relating to the earlier portion of the period under review is drawn entirely from the school records.

Attendance.—The average number of individual students in attendance for the three terms of the year was forty-four, with a class attendance of ninety. The fact that mining operations at Karangahake were less active than usual during the latter portion of the year militated against the attendance, and was also largely responsible for the comparatively low results obtained at the annual examinations.

Classes.—The number of classes in operation was eight at Karangahake and six at Waikino.

Examinations.—At the annual examinations, held in December, 10 students presented themselves at Karangahake, the passes obtained being 2 second-class and 5 third-class. At Waikino 13 students presented themselves for examination, and obtained 5 first-class, 2 second-class, and 5 third-class certificates. At the examination in bullion-assaying 1 student at Karangahake and 2 at Waikino qualified for the certificate issued by the Customs Department. At the annual examinations for mine-managers, held during March, 1909, one student, Mr. Walter Smith, of the Talisman Mine, succeeded in obtaining a first-class certificate of competency as a mine-manager. Another student obtained a second-class stationary-engine driver's certificate.

Library.—During the year some valuable additions were made to the library of each school by the purchase of standard works. The leading mining and metallurgical magazines are also regularly obtained, and by the courtesy of the Hon. the Minister of Mines the various publications of the Department are made available for the use of students. In this connection I desire to make special mention of the excellent articles in the *Mines Record*, which are very helpful and instructive.

Equipment.—The equipment of the schools in respect of apparatus and instruments is fairly good, especially in connection with the surveying classes. The class in electricity has been considerably handicapped owing to the oil-engine for driving the dynamo not proving suitable. A Pelton wheel is now being installed, and will doubtless permit of more systematic work being carried out.

Assays.—During the year a large number of assays were made for the public, those for *bona fide* prospectors being free of charge.

Conclusion.—I desire to express my thanks to the Council and the secretary for their generous support since my arrival, and my appreciation of the excellent work done by Mr. W. Gibson, B.E., at Waikino, as well as by the other members of the teaching staff.

I have, &c.,
F. W. Reid, Director.

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

Sir,— Nelson, 15th March, 1909.

I have the honour to submit the following report of School of Mines work carried on in Nelson during the year 1908. The work undertaken may be grouped under three heads—(1) Teaching mineralogy and blowpipe analyses to boys attending the public school; (2) making assays and tests for the public; (3) giving lectures on some subject connected with geology.

Mineralogy and Blowpipe Analyses Classes.—These classes are held, by permission of the Town Schools Committee, in one of the rooms of the Nelson Boys' School. Two classes were formed at the beginning of the year, and each class met once a week throughout the year. Twenty-three boys were under instruction, and each class met thirty-six times. The identification of minerals by means of the blowpipe is the chief work of these classes, but attention is also given to the important physical properties of minerals, and to the panning-off of wash-dirt and beach-sands. Boys who remain in the class only one year are taught to detect by means of the blowpipe antimony, arsenic, lead, bismuth, zinc, tin, cobalt, copper, chrome, manganese, iron, and nickel, salts of these metals being used for the first tests, followed by ores rich in the one element for a second test. Those boys who take a second year's course practise on poorer ores, requiring more skill, and also make the tests necessary for the identification of sulphur, calcium, potassium, barium, strontium, and sodium. At the end of the year an examination is held for those boys who have had a two-years course, and a certificate granted if 50 per cent. or more marks are obtained. Louis Bennett and Kenneth Liddell passed this examination last December.

At the close of the year's work the class was taken for an outing to the Wangapeka Valley, where the boys enjoyed themselves thoroughly by fossicking in the river-gravels.

Assaying.—Twenty-seven assays and tests were made for the public during the year. These comprised twelve assays for gold and silver, four tests of rock for phosphate, and nine miscellaneous tests for copper, manganese, chrome, purity of water, &c.

Lectures.—Owing to numerous interruptions, only one lecture could be given, though several were planned. The subject of this lecture was "Volcanoes," and lantern views were used for illustration of the subject, which was treated in a popular but somewhat scientific manner. First, a description of a typical volcano was given, then followed the phenomena usually attending volcanic eruptions, with an inquiry into the probable causes of vulcanism. The well-known volcanic districts were then mentioned, and views of their most famous volcanoes shown, including those of our own country. The lecture was concluded by showing views of New Zealand mountain-scenery which owes its origin to volcanic activity in the past. In this connection my thanks are due to the Tourist Department for the loan of several beautiful slides.

In concluding this report I have merely to add that, with the exception of the assaying, which was charged for at school of mines rates, the work was done gratuitously.

I have, &c.,
W. F. Worley, Director.

Dr. J. Henderson, M.A., D.Sc., Director of the Reefton School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Reefton, 17th March, 1909.

I have the honour to submit the following report for the Reefton School of Mines for the year ended December, 1908:—

Classes were commenced in March, and continued without interruption throughout the year.

Instruction was given in chemistry, assaying, mathematics, surveying, mining, mechanical drawing, metallurgy, and geology.

The total number of students on the roll was thirty-five, with an average attendance of twenty-three. The distance of the mines from the school militates most unfavourably on the attendance.

For the year 214 assays were made, including ordinary fire assays for gold and silver; analyses of coals, fireclays, limestones, and black sands; determinations of copper, lead, platinum, and tin, besides some two score rocks and minerals identified. As in former years, all prospectors' samples were reported on free of charge.

I have, &c.,
J. Henderson, Director.

Mr. Sidney Fry, Director of the Westport School of Mines, to the Under-Secretary, Mines Department, Wellington.

Sir,— Westport, 15th March, 1909.

I have the honour to report on the work and attendance at the Westport School of Mines for the year ending 31st March, 1909, as follows:—

For the first five months of last year I obtained leave of absence from the Council of the school, and during that period my place was filled by Mr. A. G. Macdonald, B.E., A.O.S.M., a young man of ability, energy, and enthusiasm.

During the year forty-eight assays for gold, silver, and platinum; three analyses of coal; and eight for base metals were done, as well as a number of analyses of boiler-feed water, rock-analyses, &c. The identification of a number of minerals and ores was performed, also the cleaning of several parcels of gold bullion.

The total number of students enrolled during the year has been 32, and the average class attendance at the central school and branches throughout the year is as follows: Mining, 9·3; mathematics, 9·3; surveying, 2·7; geology, 2·4; drawing, 7·2; steam, 4·7; mineralogy and prospecting, 8·2; elementary electricity, 1·6; chemistry, elementary and practical, 6·1; assaying and metallurgy, 6·1.

Six students sat at the class examinations, the marks gained in some of the subjects being good; but those in practical mathematics were very poor. It is a great trouble to get anything like a number of students to sit for examination, and many of those who do sit have only attended the school in a casual sort of way, with absolutely none of that zeal or energy which characterizes the true student.

About the middle of 1908 I inaugurated classes at Seddonville, which are now being carried on in addition to those already held at the Denniston, Millerton, and Granity branches.

During the year a first-class petrological microscope was imported from England, and also a complete teaching-set of minerals from the Foote Mineral Company in America. The money for the purchase of these minerals I raised by private subscription, and I have to thank most heartily the people of Denniston, Millerton, Granity, and Ngakawau, for the very generous way in which they responded to my solicitations.

The students of our school have largely availed themselves of the books from the Mines Department's lending library, and many speak highly of the advantages which it affords.

I have, &c.,

Sidney Fry, Director.

ANNEXURE 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, 22nd April, 1909.

I have the honour to present my report on the working of the Waimea-Kumara water-races for the financial year ended 31st March, 1909.

Waimea Race.

The cash received for sales of water from this race for the year ended 31st March, 1909, was £730 17s. 6d., and the expenditure for the same period on gauging, maintenance, and repairs amounted to £553 0s. 3d., showing a credit balance of £177 17s. 3d. on the year's transactions.

The average number of miners supplied with water from the race for sluicing purposes during the year was 31·25, showing an increase of 1·84, as compared with the previous year, and the approximate quantity of gold obtained by them was 1,434 oz., having a value of £5,592 12s.

The total sales of water for the year amounted to £717 13s. 6d., or £65 6s. 3d. more than the previous year.

The cash received for sales of water was £93 15s. 11d. greater, and the expenditure of gauging, maintenance, and repairs was £39 18s. 2d. less than during the previous year.

The head-works at Wainihinihi and Kawhaka, the Waimea siphon, tunnels, main and branch races have been well maintained, and are now in a thorough state of repair; but the high flumings in the neighbourhood of Fox's and Greek's are in such a decayed condition that permanent repairs could not be carried out without pulling down the old structures. Temporary repairs, however, were effected from time to time, and with strict supervision they may probably last for another year or two; but a survey of the gullies should be made, and sections prepared, with the view of ascertaining the probable cost of replacing the old flumings with iron piping. Owing to one or two small breaks taking place in the race between Goldsborough and Stafford, the revenue from the Stafford section shows a small decrease on the previous year, but there is still a large area of ground in the vicinity that will pay for sluicing. During the year a branch race, consisting of 49 chains of piping and 4 chains of ditching, was constructed from Tunnel Terrace across the Waimea Creek to convey water to Linklater and party's claim at Lower German Gully. The siphon is composed of wrought-iron pipes 18 in. in diameter, it is 49 chains in length, has a head of 53 ft., and its carrying-capacity is 15¾ heads. Where the pipes cross the Waimea Creek they are subject to a pressure of 116 lb. to the square inch; they are

perfectly watertight, and reflect credit on the makers, Messrs. Gibbons, Holmes, and Walker, of Kumara. The work cost £809 14s. 7d., of which the Government contributed half and Linklater and party the other half. Since its completion, some five and a half months ago, Linklater and party have taken water to the value of £101 6s. 10d., or an average of over £18 per month. As this revenue has been derived from the sale of water that would have run to waste had the siphon not been constructed, the result is highly satisfactory.

The tributers of the Waimea Hydraulic Sluicing Company used water regularly in their claim on Scandinavian Hill from April to August, 1908, when, owing to friction arising between the tributers themselves and the tributers and the company, work was suspended until February, 1909, when sluicing operations were resumed. Although the claim was idle for five months of the year, the tributers have paid £14 17s. more for water than the total cost of the extension of the Waimea Race along Tunnel Terrace Hill, and no extra maintenance was incurred.

The party of Chinamen at Red Jack's are still taking water from the race. They had a very successful year, and still have a large area of payable ground to work.

There was an excellent supply of water for the first nine months of the year, but the last three months were the driest experienced here for many years, and the supply in the Waimea siphon during the month of March was considerably reduced.

Authorised free water to the value of £28 0s. 2d. was supplied from this race during the year.

When the present price of water is taken into consideration, the sales of water for the past year are the largest since the Waimea Race was constructed, and represent an increase of over 133 per cent. since the water was reduced in May, 1905, and I feel satisfied that the ensuing year will show a further improvement. This highly satisfactory result has been attained by the construction of branch races at a small cost to facilitate the opening-up of new ground.

The following is a summary showing the revenue and expenditure in regard to this race for the financial year ended 31st March, 1909: Sales of water, £717 13s. 6d.; cash received, £730 17s. 6d.; expenditure, £553 0s. 3d.; approximate value of gold obtained, £5,592 12s.; average number of men employed, 31·25.

Branch Race to Callaghan's and Middle Branch of Waimea Creek.

The cash received from this race for the year ended 31st March, 1909, was £398 16s. 10d., and the expenditure on gauging, maintenance, and repairs was £633 11s. 7d., showing a debit balance of £234 14s. 9d. on the transactions for the year.

The average number of miners supplied with water from this race during the year was 9, an increase of 0·84 as compared with the previous year, and the approximate quantity of gold obtained by them was 1,221 oz., having a value of £4,761 18s.

The total sales of water for the year amounted to £422 1s. 3d., a decrease of £49 7s. 5d. on the preceding year, and the cash received for sales of water showed a decrease of £85 7s.

The approximate quantity of gold obtained by the miners was 29 oz. greater than during the previous year, representing an increase in value of £113 2s.

The expenditure on gauging, maintenance, and repairs was £66 19s. 11d. less than during the previous year, and the races, tunnels, and fluming are now in good order.

During the year a subsidy of £135 was granted to S. Perry and M. Hanrahan for extending the Middle Branch Race from its old termination at Middle Branch Flat to their claim near Goldsborough, a distance of 45 chains. The extension was completed, and the party started sluicing operations at the beginning of December, and since that time they have taken 40 pounds' worth of water from the Middle Branch Race, and the results obtained so far have been highly satisfactory.

Three parties sluiced into the Waimea Main Tail-race for eight months of the year; but, owing to the want of fall, Reaby and party abandoned their claim at the end of December. This makes the fourth claim at Middle Branch Flat that has been abandoned owing to the Main Tail-race being too high to bottom the ground. Flushing-water was supplied to the Main Tail-race during the year free of charge. At Callaghan's Flat Harvill and party, owing to the extremely hard nature of the ground and the limited pressure available from the Callaghan's Race, experienced great difficulty in opening out their claim, and only used water intermittently throughout the year. The returns so far have not been encouraging, but when the claim is in proper working-order a decided improvement may be looked for. The dry weather materially interfered with Manzoni and party, as owing to the want of floods their tailings-site in the Little Kapitea Creek became completely blocked up with tailings, and they practically took no water from the Callaghan's Race for the last six months of the year. Haney and party only used water for the first five months of the year, when their fall ran out; and they applied to the Department for a subsidy of 3s. a foot to drive, box, and block a low-level tunnel tail-race or channel 1,700 ft. in length from the Little Kapitea Creek to their claim at Callaghan's Flat. The subsidy was granted in August on the conditions that any other party taking up ground in the vicinity could sluice into the channel by paying a proportionate share of the maintenance. The channel is now driven the full distance, and the work has been carried out in a most creditable manner, true to line and level, but the boxing and blocking has yet to be done.

All the foregoing circumstances tended to materially reduce the sales of water for the year; but the falling-off is only temporary, and when Haney and party's channel is completed the probability is that the demand for water from the Callaghan's Race will be greater than the available supply.

Authorised free water to the amount of £35 15s. was supplied from the Middle Branch Race during the year.

The following is a summary of the revenue and expenditure of this race during the financial year ended 31st March, 1909: Sales of water, £422 1s. 3d.; cash received, £398 16s. 10d.; expenditure, £633 11s. 7d.; approximate value of gold obtained, £4,761 18s.; average number of miners employed, 9.

Kumara Race.

The cash received for sales of water from this race for the year ending 31st March, 1909, was £364 2s. 11d., and the expenditure on gauging, maintenance, and repairs was £601 10s. 7d., showing a debit balance of £237 7s. 8d. on the year's transactions.

The average number of miners supplied with water from this race during the year was 10·25, a decrease of 1·41 as compared with the previous year; and the approximate quantity of gold obtained by them was 757 oz., of the value of £2,952 6s.

The total sales of water for the year amounted to £380 4s. 7d., a decrease of £1 0s. 11d. on the preceding year, and the cash received for sales of water shows a decrease of £47 13s. 1d.

The expenditure on gauging, maintenance, and repairs was £76 10s. 9d. less than during the previous year, and the head-race tunnel, the main and branch races, and the siphons are now in good repair.

There has been no sluicing done in the No. 3 Channel during the year, but the sum of £158 11s. 8d. was expended for labour, timber, and other material in effecting urgent repairs.

In October last the Long Tunnel Company and Shannan and party gave a written guarantee to open out three claims in the No. 3 Channel deviation as soon as the outside extension was completed. This work was immediately put in hand, and is now sufficiently advanced to allow the parties to start driving their tail-races.

The Long Tunnel Company was the only party that sluiced into the No. 4 Channel during the year. This company has still a large area of ground, but by far the greater portion of it must be sluiced into the No. 3 Channel deviation, as the No. 4 Channel is too high to work it to advantage.

F. G. Thorn and party's claim was the only one sluicing into the No. 5 Channel for the first six months of the year. As a man had to be employed by them to keep the channel in repair, the maintenance was found to be too heavy to be borne by one party, so they opened out another face in October last. This had the effect of considerably reducing the cost of maintenance per claim, and the results since that time have been fairly satisfactory.

McGrath and Co.'s was the only private tail-race supplied with water from this race during the year.

Corbett Bros. used no water for their flax-mill since September, 1908.

The No. 1 and No. 2 Kapitea dams were empty for ten working-days during the month of March. This is the first time for nine years that the miners on the Kumara field were idle for the want of water.

Authorised free water to the value of £142 was supplied from this race during the year. This amount includes a special grant of £127 to the Wheel of Fortune Company for the construction of a branch water-race from the Kumara Supply-race to their reservior at the head of Fox's Creek.

The usual quantity of flushing-water authorised by the Department was supplied to the No. 4 and No. 5 Channels, and water was supplied to the Borough of Kumara for fire-brigade and other purposes free of charge.

The following is a summary of the revenue and expenditure of this race for the financial year ended 31st March, 1909: Sales of water, £380 4s. 7d.; cash received, £364 2s. 11d.; expenditure, £601 10s. 7d.; approximate value of gold obtained, £2,952 6s.; average number of men employed, 10·25.

Waimea-Kumara Water-race.

The following is a summary of the revenue and expenditure in regard to this race for the financial year ended 31st March, 1909: Sales of water, £1,519 19s. 4d.; cash received, £1,493 17s. 3d.; expenditure, £1,788 2s. 5d.; approximate value of gold obtained, £13,306 16s.; average number of men employed, 50·5. In addition to the above amount, the sum of £74 10s. was expended on extension and new work during the year.

It will be seen by the above summary that the value of sales of water from the combined races for last year was £1,519 19s. 4d., as against £1,505 1s. 5d. for the previous year, thus showing an increase in the value of sales of water for the past year of £14 17s. 11d. The expenditure on gauging, maintenance, and repairs was £1,788 2s. 5d., as against £1,971 11s. 3d. for the previous year, thus showing a decrease in the cost of maintenance last year of £183 8s. 10d. The cash received during the year was £1,493 17s. 3d., as against £1,533 1s. 5d. for the previous year, thus showing a falling-off in revenue of £39 4s. 2d.

Although the cash received was £26 2s. 1d. less than the sales of water for the year, no bad debts were incurred, the whole amount being recoverable.

The loss on working the races for the year was £268 3s. 1d.; but taking into consideration the large demand for water from the Waimea Race since its extension to Lower German Gully in October last and the probable opening-up in the near future of new ground at Callaghan's Flat and Kumara (commanded by Haney and party's channel and the No. 3 deviation respectively), there is every reason to conclude that the combined races will show a profit for the ensuing year.

Wainihinihi Water-race.

The supply of water from this race has been excellent throughout the year, and with the water from the Kawhaka Race has kept the Waimea siphon full, except during the month of March, when the quantity was reduced from thirty-three to eighteen or twenty heads. No breaks occurred, and the race has been well maintained and is now in a thorough state of repair.

I have, &c.,

James Rochford, Manager Water-races.

Mr. R. MURRAY, Manager Central Otago Water-races, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Naseby, 21st April, 1909.

I have the honour to present the following report on the Mount Ida, Blackstone Hill, and Alexandra Water-races for the year ended 31st March, 1909 :—

The total sales of water from the Mount Ida Race during the year amounted to £1,078 8s. 3d., an increase over those of last year of £435 13s. 6d. The expenditure on maintenance and repairs for the same period was £1,702 14s. 10d., an increase of £597 19s. 4d. over that of last year. The total cash received was £1,078 8s. 3d. On account of payment in advance, free water to the value of £7 12s. 4d. was supplied, and free water for washing-up was also supplied to the value of £843 10s. The total value of water supplied from this race during the year amounted to £1,175 4s. 5d., an increase over that of last year of £473 3s. 5d. The average number of miners supplied with water was 39·36, a decrease of 2 from the number of last year. The approximate quantity of gold obtained by parties using water from this race was 1,459 oz., valued at £5,635 7s. 9d., an increase of 484 oz. over the quantity obtained last year.

The dry weather from last season broke up on the 10th April, and the whole of the miners were at work in their claims. The season has been the best one for water we have had for several years, giving almost full time up to the 10th March. The weather getting cold about the middle of June, most of the Chinese knocked off. During the first week in July the weather turned warm and spring-like, when at 2 in the afternoon of the 7th it began to snow, and by 9 in the evening it was a foot deep on the streets, and at 7 next morning fully 4 ft. deep—the heaviest single fall that the oldest inhabitant has seen here. Nothing could be done in connection with the race, as it was impossible for man or horse to travel in this depth of snow. On the 11th I sent men on snowshoes to get the maintenance man on the Idaburn section out. As there was no communication with Blackstone Hill for ten days, it was an anxious time until the most distant maintenance men got out. The by-washes between the different creeks being built of sods are never strong, the race as it got choked with snow broke them away, thus making an escape for the water which saved the race from heavy damage, only two small breaks taking place beyond the 40-mile peg. The outlet end of the Wedderburn siphon was blocked, forcing the water down the pipe-line trench, scouring a channel, and loosening eleven of the pipes. Not till the 24th could an effort be made by the maintenance men to get to the race. I started with the cleaning of the race on the 1st September with all the strength I could get. On reaching the reservoir and finding that it was by-washing, the miners turned back and had the water from it turned on to them in their claims. After lowering the water in it 11 ft., the miners agreeing, it was closed down on the 30th, so as to get the race cleaned to Hill's Creek, as it and the Idaburn would then give while the snow lasted a full supply, thus saving that in the reservoir. Only ten miners went on. Reached Hill's Creek on the 16th October, and the miners were again at work in their claims on the 19th. High winds set in at the beginning of November which cleared the snow off the range, causing the creeks to dry —so much so that by the end of the month not more than seven sluice heads were coming into the reservoir from forty-five miles of race. The reservoir being nearly full, this, with showers during December, January, and the first week in February (although the water in the race was at times very low), gave practically a full supply until the 9th of March, when the reservoir ran empty. Owing to the extraordinary heavy snowfall, the cleaning of the race was very heavy, chiefly from heavy slips brought down when the thaw set in. Round the basin of Coalpit Gully, which is principally composed of lignite clays, the race had to be cleaned out three times. Only two small breaks occurred during the year. Repairs had to be made to several boxes crossing the race, and to two traffic-bridges. As so many persons are supplied direct from the race, to supply another elevating claim using 5½ heads, a length of race of 17 chains from a small dam in head of Home Gully had to be constructed; also, on account of the high winds breaking into the water-face of a considerable length of Coalpit Dam bank, it was faced up with snowgrass-tussock for protection. The reservoir when full was fairly tight, only a small stoppage showing along the embankment above the 50 ft. level. The cleaning of the race was completed on the 23rd December.

BLACKSTONE HILL RACE.

The total sales of water from this race during the year amounted to £14 5s. The expenditure on maintenance and repairs was £49 6s. The total cash received was £14 5s. Free water to the value of £3 10s. 3d. was supplied. The total value of water supplied from this race during the year amounted to £17 15s. 3d. The number of men supplied with water was two—Dillon Bros. This race had little done to it for the two previous years; on account of the Dillons starting it was given a good side-trimming and cleaning. A heavy slip into it, of about 2½ chains in length, near the intake of the siphon across Pegleg Gully, with which nothing could be done but allow it to find its own batter, had on several occasions to be cleaned out. When this gets settled, a small annual expenditure will keep it in good order. Any spare water, or the whole of the East Marionburn, from which this race is supplied, when not wanted by the Dillons, is sent on to the Naseby miners when required.

ALEXANDRA WATER-RACE.

The total sales of water from this race during the year amounted to £151 14s. 2d. The expenditure on maintenance and repairs for the same period was £422 11s. The total cash received was £151 4s. On account of payment in advance, free water to the value of £50 6s. 8d. was supplied. The total value of water supplied from this race during the year amounted to £202 0s. 10d.

The principal demand for water from this race was by farmers for irrigation, nine of them taking water, and two of them, mining at Blacks' No 3, using the tail-water to irrigate their farms.

In June a Dunedin syndicate was granted an area exceeding 200 acres near the Manorburn Creek as a ground-sluicing claim. This syndicate will require its water-supply from the Alexandra Race. As yet no work has been done upon this claim.

From the way the upper section is constructed, three miles and a half of its length has to be constantly watched, as its outer side is dry-stone built and constantly leaking. This part, through its faulty construction, will be a continuous source of trouble through breaks, especially if required to be filled to its entire carrying-capacity.

I have, &c.,
R. Murray, Manager.

ANNEXURE E.

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, 1908.

[Note.—Under heading "Power employed" the letter H indicates hand; O, oil; S, steam; W, water; 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.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Number of Tube Mills.	Power employed.
Waihi Borough.																
Waihi	Bank of New Zealand	Bank of New Zealand ..	..	..	..	..	..	..	2	2	1	1	..	..	..	H
"	Waihi	Waihi Gold-mining Co. ..	2	90	..	5	..	..	3	6	1	1	1	1	4	S, W
Waikino	Waikino ..	" ..	4	200	..	12	..	..	3	4	1	1	1	1	10	S, W
Waihi	Union	" ..	2	40	..	2	..	..	2	2	1	1	1	1	..	S, W
"	Grand Junction ..	Grand Junction Gold-mining Co.	4	40	2	1	1	4	2	1	5	4	1	1	4	E
"	Gladstone ..	Gladstone Gold-mining Co.	1	5	..	..	..	..	1	1	..	..	..	..	..	O
"	Waihi-Paeroa ..	Waihi-Paeroa Gold-extraction Co.	..	..	..	..	..	..	..	..	..	..	2	..	4	S
Ohinemuri County.																
Paeroa	Bank of New Zealand	Bank of New Zealand ..	1	..	..	..	..	..	2	1	1	1	..	..	..	H
Karangahake ..	New Zealand Crown	New Zealand Crown Mines (Limited)	2	60	..	4	..	..	2	2	1	1	1	..	..	S, W
" ..	Talisman ..	Talisman Gold-mining Co.	2	40	..	2	..	..	2	2	1	1	1	1	..	S, W
Komata	Komata Reefs ..	Komata Reefs (Limited)	4	60	..	5	..	..	3	3	1	1	1	1	..	S, W
Waitekauri ..	New Waitekauri ..	New Waitekauri Gold-mining Co.	2	20	..	4	..	..	1	2	1	1	1	1	2	S, W
" ..	Portsea	Challis and party ..	1	5	..	2	..	..	1	2	1	1	1	..	..	S, W
" ..	Jubilee	Jubilee Gold-mining Co.	1	10	..	3	..	..	1	2	1	..	..	1	..	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-mining Co.	.. 1	10 5	.. ..	2 2	.. ..	.. ..	1 1	2 2	1 1	1 1	.. ..	.. ..	.. ..	S S
Piako County.																
Waiorongomai ..	Hardy's Mines ..	Hardy's Mines (Limited)	1	10	..	4	1	1	2	2	1	1	1	1	..	W
Coromandel County.																
Tokatea	Scotty's.. ..	J. T. Martin	..	9	..	8	..	..	1	2	1	..	..	..	..	S
"	Royal Oak ..	Royal Oak Gold-mining Co.	1	15	..	8	..	..	2	2	1	..	..	..	..	W, S
"	Tokatea ..	Tokatea West Co. ..	..	3	..	2	..	..	1	1	..	..	..	..	..	S
Coromandel ..	Telephone ..	Hauraki Gold-mining Co.	..	15	..	8	..	..	3	3	1	..	..	1	..	S
" ..	Union Beach Tailings Plant	S. James	..	..	..	1	1	3	..	1	1	..	1	..	..	W
" ..	Public battery ..	School of Mines (in trust)	..	5	..	2	..	..	1	2	1	..	..	..	..	O
Waikoromiko ..	Four-in-Hand ..	Four-in-Hand Gold-mining Co.	..	10	..	2	..	..	1	1	1	1	..	..	..	S

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, 1908—*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-smelting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Number of Tube Mills.	Power employed.
Coromandel Cty.—ctd																
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	..	..	S
" ..	Waitaia ..	Waitaia Gold-mining Co.	..	10	..	2	..	..	1	2	1	1	1	1	..	S
" ..	Handsworth ..	Louis Woodcock ..	..	3	..	1	..	..	1	1	..	..	..	..	..	W
" ..	Public Battery ..	Coromandel County Council (in trust)	..	5	..	2	..	..	1	1	1	..	..	..	..	O
Mercury Bay ..	Mahakirau ..	..	..	3	..	1	..	..	1	1	..	..	..	..	..	S
" ..	Moewai	Moewai Gold-mining Co.	..	10	..	2	..	..	..	1	1	..	..	..	..	S, G
Great Barrier Island.																
Great Barrier ..	Barrier Reefs ..	H. Brett	1	20	..	3	..	2	3	2	1	1	1	1	..	S
" ..	Sunbeam ..	"	..	5	..	..	..	..	..	..	..	..	..	..	..	..
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 Gold-mining Co.	..	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	..	..	3	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-mining Co.	..	8	..	2	..	..	1	1	1	..	..	..	..	W
"	Hit or Miss ..	John 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	2	..	..	..	..	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	..	..	..	..	W
" ..	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 Council (in trust)	1	3	..	1	1	1	3	3	1	4	1	1	1	W
" ..	May Queen Extended	May Queen Extended Gold-mining Co.	..	23	..	14	..	..	2	4	1	..	..	..	..	W
" ..	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
		Totals	40	1,262	3	261	31	24	103	125	66	36	23	16	25	

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, 1908.

[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 retorting	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Plants for Chlorination.	Number of Plants for Concentration.	Power employed.
Marlborough County.																
Top Valley ..	Wellington ..	T. Y. Young and P. K. Watty	..	10	..	1	..	..	..	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	..	1	W
Inangahua County.																
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
" ..	Golden Arch ..	Golden Arch Gold-mining Co. (Limited)	..	10	..	..	..	..	..	1	..	..	1	..	..	O
Bourke's Creek ..	Gardiner's ..	W. P. Gardiner and Sons ..	..	..	..	12	..	..	1	2	..	..	..	..	..	W
" ..	New Ulster ..	New Ulster Gold-mining Co. (Limited)	..	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	Progress Mines of New Zealand (Limited)	3	65	..	1	..	..	2	2	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	1	..	..	..	..	..	W
"	A 1	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	..	1	W
"	Inglewood ..	Inglewood Gold-mining Syndicate	..	10	..	..	..	..	..	1	..	1	1	..	..	S
Snowy Creek ..	Blackwater ..	Blackwater Mines (Limited)	1	30	..	1	..	..	2	1	3	2	1	..	1	W
Grey County.																
Paparoa Ranges ..	Garden Gully ..	Garden Gully Gold-mining Co. (Limited)	..	10	..	1	..	..	1	1	..	..	..	..	..	W
Ten-mile Creek ..	Taffy	C. Curtis and J. Taylor ..	..	5	..	1	..	..	..	1	..	..	..	..	..	W
Westland County.																
Ross	Osmers and party ..	Osmers and party ..	..	5	..	..	..	..	..	1	..	..	..	..	..	W
			7	354	..	40	..	4	19	38	16	10	14	..	7	

QUARTZ-CRUSHING MACHINES and APPLIANCES for treating Auriferous Ores in the SOUTHERN MINING DISTRICT for the Year ended the 31st December, 1908.

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 smelting.	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 Reefs 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.	..	10	..	4	..	..	1	1	1	1	..	..	S, W
"	Come-in-time	Come-in-time Gold-mining Co.	..	10	..	..	..	..	..	..	..	..	..	..	W
"	Alta	Alta Gold-mining Co.	..	4	..	..	..	..	..	..	..	..	..	..	O
Bald Hill Flat	White's Reef	R. T. Symes	..	5	..	1	..	..	1	1	1	..	..	..	W
"	Advance	R. T. Symes	..	3	..	..	..	..	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 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	10	

NOTE.—P.G. means Producer Gas Plant.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the THAMES COUNTY AND BOROUGH 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.	
		Tons cwt. qr. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Puru Creek	1	0 0 0 15	0 13	..	1 5 0
Gumtown—					
Kapowai	8	588 0 0 0	543 10	..	1,322 9 4
Tararu—					
Tararu Creek	1	4 15 0 0	37 2	..	93 0 0
Day Dawn and Norfolk Mines	10	827 0 0 0	192 0	390 0	1,200 0 0
Waitangi	9	16 0 0 25	32 15	..	108 19 2
Watchman	5	10 0 0 0	4 3	..	11 0 0
Sluicing Claim	1	0 0 0 2	3 3	..	8 0 0
	26	857 15 0 27	269 3	390 0	1,420 19 2
Moanataiari—					
Moanataiari	4	18 0 0 0	12 12	..	31 8 9
Kurunui-Caledonian	10	22 10 1 22	108 6	..	308 17 3
Old Alburnia	19	36 1 0 3	322 7	..	830 5 2
	33	76 11 1 25	443 5	..	1,170 11 2
Waiotahi—					
Waiotahi	44	3,497 1 1 0	4,602 13	843 10	14,716 14 3
Thames	1	0 0 0 5	1 4	..	3 6 0
Golden Drop	1	3 0 0 0	20 6	..	55 0 0
Ballarat	2	8 2 1 0	231 7	..	630 0 0
West Coast	2	8 0 0 0	5 18	..	15 7 0
Punga Flat	1	0 0 0 9	6 19	..	16 0 0
	51	3,516 3 2 14	4,868 7	843 10	15,436 7 3
Kuranui—					
Kuranui	6	51 0 0 0	31 19	..	63 4 6
Grahamstown—					
Victoria	8	91 1 0 3	476 8	..	1,327 18 3
Saxon	7	22 10 0 0	37 4	..	105 1 6
	15	113 11 0 3	513 12	..	1,432 19 9
Waiokaraka—					
May Queen	38	429 3 2 0	1,158 0	..	3,261 7 6
Karaka—					
Claremont	1	0 0 2 14	61 4	..	183 14 0
Southern Queen	6	98 0 0 0	198 12	..	544 5 9
New Una	4	90 0 0 0	14 13	..	38 17 0
Arrindell	4	3 0 0 6	9 15	..	26 14 6
May Queen Extended	4	33 0 0 0	30 9	..	64 0 0
Redwoods	2	79 0 0 0	101 1	..	215 0 0
Old Achilles	1	0 0 0 2	7 3	..	15 0 0
Progress	2	4 0 0 0	5 11	..	11 12 0
Karaka Creek	2	10 0 0 13	12 4	..	22 9 0
Lovatts	1	4 0 0 0	2 18	..	6 15 0
Hidden Treasure	2	0 1 3 0	204 14	..	460 0 0
El Dorado	1	0 0 0 4	2 6	..	5 10 0
	30	321 2 2 11	650 10	..	1,593 17 3
Hape Creek—					
Lord Nelson	2	0 1 2 4	394 0	..	976 13 11
Daisy	1	0 0 0 15	2 17	..	6 18 0
Summer Hill	3	0 0 2 9	194 13	..	488 0 0
New Dart	3	75 0 0 0	61 5	..	165 12 0
Adventure	1	13 0 0 0	18 6	..	42 0 0
Middleton	1	0 0 1 2	23 4	..	56 5 0
	11	88 2 2 2	694 5	..	1,735 8 11
Neavesville—					
Champion	20	400 0 0 0	64 0	..	159 0 0
Otanui—					
Otanui	1	0 0 0 25	15 0	..	35 10 0
Owharoa—					
Vertus	1	0 15 0 0	5 14	..	13 0 0
Tairua—					
Tairua Broken Hills	60	4,601 0 0 0	2,397 5	3,312 4	8,698 19 2
Golden Belt	20	1,405 0 0 0	366 7	725 15	1,044 2 9
	80	6,006 0 0 0	2,763 12	4,037 19	9,743 1 11
Kirikiri					
Kirikiri	8	50 0 0 0	7 1	..	18 1 9
Puriri—					
Miners' Right	1	25 0 0 0	49 1	..	131 17 10
Omahu—					
Last Shot	10	155 0 0 0	179 5	242 2	516 19 1
Totals	340	12,678 5 1 10	12,256 17	5,513 11	38,056 0 5
1907	459	23,652 6 2 26	62,694 17	16,211 10	181,169 8 5
Decrease	119	10,974 1 1 16	50,438 0	10,697 19	143,113 8 0

During the year 157 men were employed on unproductive works.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT (excluding the Thames County and Borough), 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.	
WAIHI BOROUGH.		Tons cwt. qr. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Waihi	1,500	393,214 0 0 0	129,086 0	1,451,104 7	896,742 17 3
Grand Junction	364	48,477 0 0 0	..	71,425 3	73,122 10 8
Sundries from various sources	30	1,650 0 0 0	..	2,095 3	747 10 8
	1,894	443,341 0 0 0	129,086 0	1,524,624 13	970,612 18 7
OHINEMURI COUNTY.					
Waitekauri—					
New Waitekauri	7	295 0 0 0	202 19	370 16	625 0 2
Scotia	4	47 10 0 0	22 0	36 5	88 6 11
Durbar	2	83 0 0 0	..	244 14	135 3 7
Golden Cross	8	246 0 0 0	67 10	348 16	450 0 0
	21	671 10 0 0	292 9	1,000 11	1,298 10 8
Owharoa—					
Owharoa	4	52 0 0 0	38 10	106 4	123 8 11
Karangahake—					
Talisman	300	46,417 0 0 0	48,666 7	273,582 15	218,975 1 11
New Zealand Crown	131	14,921 0 0 0	..	12,165 1	25,259 18 2
	431	61,338 0 0 0	48,666 7	285,747 16	244,235 0 1
Komata—					
Komata Reefs	170	28,170 0 0 0	6,289 5	55,297 1	44,259 17 2
Totals	626	90,231 10 0 0	55,286 11	342,151 12	289,966 16 10
COROMANDEL COUNTY.					
Waikoromiko—					
Four-in-Hand	3	0 12 2 5	97 16	..	284 3 0
Waikoromiko	2	0 10 0 0	3 10	..	10 10 0
	5	1 2 2 5	101 6	..	294 13 0
Tokatea—					
Royal Oak	15	4 13 3 0	374 10	..	979 10 0
Tokatea	5	3 0 1 7	17 10	..	44 10 0
	20	7 14 0 7	392 0	..	1,024 0 0
Kapanga—					
Kapanga	6	277 0 1 2	282 11	..	934 8 11
Success	2	5 0 0 5	75 14	..	205 0 9
	8	282 0 1 7	358 5	..	1,139 9 8
Hauraki Block—					
Hauraki Freehold	5	12 0 0 0	10 4	..	29 4 0
Old Hauraki	16	229 1 0 2	265 0	..	788 5 6
Trig Hill	2	3 0 0 0	3 14	..	10 2 0
Golden Pah	5	7 0 0 6	17 6	..	52 11 0
	28	251 1 0 8	296 4	..	880 2 6
Kennedy Bay—					
Golden Hill	2	1 0 0 0	1 3	..	3 4 0
Kuaotunu—					
Handsworth	2	4 0 3 5	166 2	..	402 15 9
Aorere	2	0 0 0 25	41 15	..	129 18 11
	4	4 1 0 2	207 17	..	532 14 8
Mercury Bay—					
Moewai	6	107 0 0 0	72 15	..	155 0 4
Totals	73	653 19 0 1	1,429 10	..	4,029 4 2
SUMMARY.					
Waihi Borough	1,894	443,341 0 0 0	129,086 0	1,524,624 13	970,612 18 7
Ohinemuri County	626	90,231 10 0 0	55,286 11	342,151 12	289,966 16 10
Coromandel County	73	653 19 0 1	1,429 10	..	4,029 4 2
	2,593	534,226 9 0 1	185,802 1	1,866,776 5	1,264,608 19 7

During the year 174 men were employed on unproductive works.

STATEMENT showing QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the MARLBOROUGH, NELSON, AND WESTLAND MINING DISTRICTS for the Year ended 31st December, 1908.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
		Tons.	Amalgamation.	Cyanide.	
			Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Marlborough—					
Jubilee	5	120	58 13 0	..	225 3 9
Collingwoood—					
Golden Blocks	24	1,757	1,516 0 0	..	5,482 0 0
Westport—					
Red Queen	3	100	97 18 2	..	384 6 1
Britannia	3	241	75 19 0	..	294 14 10
	6	341	173 17 2	..	679 0 11
Lyell—					
New Alpine	25	1,150	225 11 3	..	865 16 10
Reefton—					
New Big River	40	4,851	7,135 2 0	601 4 0	31,241 6 0
Golden Fleece	20	1,868	887 16 0	96 7 0	3,771 16 3
Wealth of Nations	75	13,479	4,287 10 0	2,533 17 0	26,082 1 3
Progress	300	48,500	11,837 6 0	3,649 16 0	58,297 3 6
Keep-it-Dark	60	13,170	2,399 3 0	1,376 12 0	14,058 13 4
Blackwater	180	9,169	4,247 18 0	432 17 0	17,647 4 6
New Ulster	9	146	70 12 0	28 5 0	370 6 10
Golden Point	2	100	16 5 0	..	61 0 0
	686	91,283	30,881 12 0	8,718 18 0	151,529 11 8
Greymouth—					
Taffy	4	320	110 19 0	..	442 17 6
Ross—					
Osmers	5	185	230 8 0	..	931 8 2
SUMMARY.					
Marlborough	5	120	58 13 0	..	225 3 9
Collingwood	24	1,757	1,516 0 0	..	5,482 0 0
Westport	6	341	173 17 2	..	679 0 11
Lyell	25	1,150	225 11 3	..	865 16 10
Reefton	686	91,283	30,881 12 0	8,718 18 0	151,529 11 8
Greymouth	4	320	110 19 0	..	442 17 6
Ross	5	185	230 8 0	..	931 8 2
	755	95,156	33,197 0 5	8,718 18 0	160,155 18 10

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the SOUTHERN 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.	
FIORD COUNTY.					
		Tons.	Oz. dwt.	Oz. dwt.	£ s. d
Preservation Inlet					
Crown	6	..	56 11	..	209 0 0
LAKE COUNTY.					
Macetown—					
Anderson, Hannah, and party	6	92	76 14	..	299 0 0
Skipper's—					
Shotover	10	1,078	336 7	..	1,338 7 7
New Discovery	2	12	12 13	..	50 17 4
Totals	12	1,090	349 0	..	1,389 4 11
VINCENT COUNTY.					
Alexandra—					
Conroy's Gully	1	22	17 7	..	74 9 5
Bald Hill Flat—					
Sundries	4	267	302 0	..	1,195 0 0
MANIOTOTO COUNTY.					
Hyde—					
Highlay Gold and Scheelite	} Returns included under Sundries, Waihemo County.				
N.Z. Gold and Tungsten					
WAIHEMO COUNTY.					
Macrae's—					
Sundries	22	5,850	489 5	414 0	3,517 1 3

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the SOUTHERN MINING DISTRICT for the Year ended the 31st December, 1908—*continued*.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
TAIERI COUNTY.					
		Tons.	Oz. dwt.	Oz. dwt.	£ s. d.
Barewood—					
Barewood	21	4,793	1,855 4	..	7,405 5 10
Welcome	4	..	..	..	..
Totals	25	4,793	1,855 4	..	7,405 5 10
BRUCE COUNTY.					
Canada Reefs—					
Canada Reefing Company	7	22	4 0	..	15 8 0
Other reefs	..	110	22 11	..	86 16 4
Totals	7	132	26 11	..	102 4 4
SUMMARY.					
Fiord County	6	..	56 11	..	209 0 0
Lake County	18	1,182	425 14	..	1,688 4 11
Vincent County	5	289	319 7	..	1,269 9 5
Maniototo County	..	Included in	Waihemo County		..
Waihemo County	22	5,850	489 5	414 0	3,517 1 3
Taieri County	25	4,793	1,855 4	..	7,405 5 10
Bruce County	7	132	26 11	..	102 4 4
Totals	83	12,246	3,172 12	414 0	14,191 5 9

STATEMENT of VALUE of GOLD WON from QUARTZ CRUSHED for ALL DISTRICTS for the Years ended the 31st December, 1907 and 1908.

Mining District.	Year ended the 31st December, 1907.	Year ended the 31st December, 1908.
	£	£
Hauraki	1,375,035	1,302,665
Marlborough, Nelson, and West Coast	160,533	160,156
Otago and Southland	9,004	14,191
Totals	1,544,572	1,477,012

GROSS TOTALS and VALUE of GOLD PURCHASED by BANKS for Year ended the 31st December, 1908.

Bank.	Gold purchased.	Value.
Hauraki Mining District.		
	Oz. dwt. gr.	£ s. d.
Bank of New Zealand	101,984 13 5	123,349 8 6
Bank of New South Wales	6,890 17 12	12,116 5 0
National Bank of New Zealand	2,108 0 0	744 0 0
Totals	110,983 10 17	136,209 13 6
Marlborough, Nelson, and Westland Mining Districts.		
Bank of New Zealand	29,482 2 15	116,035 17 7
National Bank of New Zealand	15,625 19 3	60,878 12 8
Bank of New South Wales	9,490 7 0	37,634 5 11
Union Bank of Australia	2,836 0 0	11,264 0 0
Totals	57,434 8 18	225,812 16 2
Otago and Southland Districts.		
Bank of New Zealand	64,957 18 2	250,100 14 7
Bank of New South Wales	6,262 8 4	24,376 5 9
National Bank of New Zealand	33,213 7 20	126,707 18 9
Bank of Australasia	10,540 11 0	42,016 11 3
Union Bank of Australia	6,662 0 0	26,648 0 0
Private buyers	3,086 7 3	11,715 0 7
Totals	124,722 12 5	481,564 10 11
Grand totals	293,140 11 16	843,587 0 7

STATEMENT showing the NET EXPENDITURE out of PUBLIC WORKS FUND on ROADS on GOLDFIELDS during Year ended the 31st March, 1909.

ROADS ON GOLDFIELDS.

		£	s.	d.
Vote No. 114.—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	5,219	16	10
2.	Roads to open up mineral lands	65	4	6
3.	Compensation for injuries to employees, &c.	315	1	0
		£5,600	2	4

AUCKLAND.

Whangarei County.

5.	Parua Hall to Kauri Mount	100	0	0

Coromandel County.

6.	Awakanae–Shrimpton's	50	0	0
7.	Bridles Point – Deepwater	150	0	0
9.	Cabbage Bay – Cemetery Road	100	0	0
10.	Cabbage Bay – Matamataharakeke	100	0	0
11.	Cabbage Bay – Cape Colville...	650	0	0
12.	Cabbage Bay – Port Jackson	50	0	0
13.	Coromandel – Cabbage Bay (inland)	100	0	0
14.	Coromandel–Kuaotunu, *via* Matarangi	129	0	0
16.	Coromandel–Whangapoua	100	0	0
17.	Coromandel Wharf Road extension	100	0	0
20.	Kaimarama Settlement Road	200	0	0
22.	Kauris–Ecclestone's	140	0	0
23.	Kauris–Mahakirau	700	0	0
25.	Kikowhakarere – Cabbage Bay	220	0	0
26.	Kuaotunu – Mercury Bay	100	0	0
27.	Kuaotunu–Opito	50	0	0
28.	Manaia–Waikawau	200	0	0
29.	Mercury Bay – Tairua	100	0	0
30.	Mercury Bay Wharf (repairs)	392	0	0
31.	Mercury Bay – Whenuakite and Boat Harbour	50	0	0
34.	Tairua–Whenuakite	100	0	0
36.	Tiki–Kaimarama	50	0	0
37.	Tiki–Manaia	100	0	0
38.	Tiki – Te Koumu	210	0	0
39.	Tokatea – Kennedy Bay	50	0	0
40.	Waikawau–McLaughlin's	35	0	0
41.	Whitianga–Gumtown	100	0	0
42.	Whitianga–Kaimarama	68	0	0

Thames County.

43.	Crosbie Settlement Road	50	0	0
45.	Golden Belt Battery to Puketui	56	8	0
46.	Hape Creek Road	100	0	0
47.	Hikutaia–Whangamata "Wires" Track	220	9	0
48.	Hikuwai–Tairua	175	5	0
49.	Karaka Creek Road	50	0	0
51.	Moanataiari Road	53	10	8
52.	Neavesville–Broken Hills–Upper Landing	37	14	2
53.	Neavesville Road (protection)	100	0	0
54.	Neavesville Golden Belt Battery	245	13	0
55.	Ohio Creek Road	50	0	0
57.	Omahu–Whangamata	35	5	0
58.	Otanui Track	50	0	0
59.	Puketui–Hikuwai	250	0	0
60.	Puriri–Neavesville	500	0	0
63.	Tairua River Bridge	432	0	0
64.	Tapu Creek Road	50	0	0
65.	Tapu–Gumtown	187	0	0
67.	Tararu Creek Road	50	0	0
68.	Thames–Hikutaia	373	7	10
69.	Thames–Waikawau	600	4	10
72.	Waiotahi Road	50	0	0
74.	Whangamata–Wentworth	51	0	0

NET EXPENDITURE out of PUBLIC WORKS FUND on ROADS on GOLDFIELDS—*continued.*

Thames Borough.

	£	s.	d.
75. Karaka Creek (clearing)	100	0	0

Ohinemuri County.

77. Abbot's Road, Waikino	41	7	0
78. Alpha Road, Huanui	43	0	0
79. Alpha Road, Waitekauri – Durbar Mine	250	0	0
80. Bridge Road, Karangahake	35	19	7
82. Collett's Track	50	0	0
83. Dominion Mine Road	18	0	0
84. Durbar Mine, Komata	110	0	0
86. Goldfields Track – Willows	96	19	6
87. Hikutaia–Maratoto	65	0	0
88. Hikutaia–Paeroa	193	1	11
89. Hikutaia–Waihi	51	7	5
90. Hill Road, Karangahake	100	0	0
91. Horn Level Road	75	0	0
92. Hununga Road	41	0	0
93. Jubilee Low-level Road	75	0	0
94. Jubilee Road, Maoriland Mine	100	0	0
95. Karangahake Reservoir Track	50	0	0
97. Komata Creek Road	66	7	0
98. Komata–Thames	400	0	0
100. Mangakino Track	50	0	0
101. Maratoto Road	317	0	0
102. Netherton Road	150	0	0
104. Old Tauranga Road	47	0	0
105. Paeroa–Hikutaia–Robinson's	115	0	0
106. Paeroa – Te Aroha	32	0	0
107. Paeroa–Waitoa	100	0	0
109. Rahu Road	150	12	6
110. Rotokohu Road	184	0	0
111. Seddon–Waikino	87	0	0
112. Seddon Street Waikino – Waitekauri	536	11	8
113. Te Aroha Main Road	200	0	0
114. Te Aroha Road	100	0	0
117. Waitawheta Crossing Bridge	631	0	0
118. Waitawheta Road	247	0	0
119. Waitawheta Road Deviation	101	0	0
120. Waitawheta – Waihi Road	100	0	0
122. Waitekauri – Golden Cross	20	0	0

NELSON.

Collingwood County.

129. Aorere Bridge (£1 for £1)	2,256	0	0
130. Aorere–Parapara	230	0	0
132. Collingwood–Parapara	150	0	0
133. Ferntown–Pakawau	300	0	0
134. Mangarakau Bridge and approaches	50	0	0
135. Pakawau–Mangarakau	200	0	0
136. Pakawau–Puponga	300	0	0
137. Pakawau–Tamatea	50	0	0
139. Takaka – Collingwood Inland Road	391	18	11

Takaka County.

142. Anatoki–Coles	100	0	0
143. Anatoki Track	60	0	0
144. Bubu Bridge	50	0	0
146. Go-ahead Creek Bridge	41	11	10
147. Kill Devil – Waingaro Diggings	100	0	0
148. Long Plain Road	100	0	0
150. Takaka – Collingwood Inland Road	88	1	6
152. Upper Anatoki Track	400	0	0

Waimea County.

153. Aniseed Valley Road	191	18	8
157. Motueka Valley to Wangapeka	40	0	0
161. Thorpe–Baton	45	0	0

NET EXPENDITURE out of PUBLIC WORKS FUND on ROADS on GOLDFIELDS—*continued.*

Buller County.

		£	s.	d.
164.	Brighton – Grey County Boundary	150	0	0
165.	Britannia Mine Road	200	0	0
166.	Bullock Creek Road	200	0	0
167.	Burnett's Face – Coalbrookdale	175	0	0
168.	Channel Flat – Mackley's Bridge	500	0	0
169.	Charleston–Four-mile	175	0	0
170.	Denniston Hill Road	81	7	2
171.	Denniston – Burnett's Face	150	0	0
173.	Fairdown – Sergeant's Hill	200	0	0
174.	Fairdown–Waimangaroa	175	0	0
175.	Four-mile–Brighton	225	0	0
178.	Karamea Mud-flat	100	0	0
180.	Lyell – Alpine Mine (widening)	150	0	0
182.	McFadden's–Gillow's	100	0	0
183.	Mears's Road	75	0	0
185.	Millerton Road (widening)	400	0	0
186.	Millerton Township Streets	150	0	0
187.	Mokihinui end of Westport Road	250	0	0
189.	Mokihinui – Little Wanganui	1,473	7	8
192.	Mount Radiant Track	775	0	0
194.	New Fedderson Dredge Road	75	0	0
198.	Seddonville Colliery – Township	175	0	0
199.	Seddonville Road	175	0	0
200.	Seddonville – Mokihinui Mine Road	50	0	0
203.	Waimangaroa–Birchfield	100	0	0
204.	Waimangaroa–Granity	200	0	0
205.	Welshman's Bridge – Husband's	125	0	0
206.	Westport–Mokihinui	150	0	0

Inangahua County.

		£	s.	d.
209.	Blackwater Creek	2,857	4	11
210.	Blackwater – Big River	131	0	6
214.	Devil's Creek Bridge	150	0	0
216.	Horse Terrace Bridge	175	12	5
217.	Horse Terrace – Hunter's	134	12	0
218.	Inangahua Bridge	508	6	9
224.	Maruia–Glenroy	309	12	0
225.	Murray Creek Road	385	6	5
226.	Progress Junction – Globe Hill	69	7	7
227.	Progress Junction – Slab Hutt Creek	111	0	2
228.	Rappahannoc Bridge	8	19	10
230.	Six-mile Creek Bridge	100	0	0
231.	Specimen Hill Road	95	4	6
232.	Upper Blackwater Pack-track	197	13	0

WESTLAND.

Grey County.

		£	s.	d.
234.	Ahaura–Moonlight–Shellback	100	0	0
236.	Blackball – Healey's Gully	300	0	0
237.	Blackball–Paparoa	400	0	0
238.	Cobden–Brighton	110	0	0
239.	Deadman's Creek Prospecting Track	100	0	0
241.	Grey – Barrytown Road – Runanga	200	0	0
242.	Maori Creek – Maori Gully	80	0	0
243.	Moonlight–Blackball	375	0	0
244.	Payne's Gully Track	100	0	0
247.	Seven-mile – McLean's	200	0	0
248.	Seven-mile – Nine-mile Bluff	175	0	0
249.	Seven-mile – Point Elizabeth Colliery	250	0	0
251.	Upper Moonlight Prospecting Track	75	0	0

Brunner Borough.

		£	s.	d.
253.	Brunner–Blackball	292	15	6

NET EXPENDITURE out of PUBLIC WORKS FUND on ROADS on GOLDFIELDS—*continued*.

Westland County.

	£	s.	d.
240. Fourth and Hatters Terrace	85	0	0
254. Adair's Road	267	10	0
255. Back Creek Road	180	0	0
256. Big Dam Track	85	0	0
257. Bullock Creek Track	100	0	0
258. Hunt's Creek Bridge	165	0	0
259. Kanieri Bridge	201	18	7
260. Kanieri Forks – Greeks	175	0	0
261. Kapitea Bridge	38	19	8
262. Larrikins – Great Westland Road	270	0	0
263. Larrikins–Loop-line (widening)	190	0	0
264. Larrikins–Main Road	185	0	0
265. Mount Hercules Deviation	156	4	0
266. Okarito–Forks Road	10	0	0
267. Reefton–Hokitika–Ross Road	2,273	14	10
269. Seddon Terrace Track Extension	80	0	0
270. Taipo–Seven-mile	150	0	0
271. Taipo Prospecting Track	155	0	0
272. Totara Road	165	0	0
273. Westland Reefs Prospecting Track	55	0	0
274. Wilberforce – Westland Reefs	1,506	8	9

Ross Borough.

275. Donoghue's Road	110	0	0

OTAGO.

Tuapeka County.

278. Waipori–Waitahuna	100	0	0

Vincent County.

282. Clyde Bridge	342	16	6
283. Cromwell–Nevis	100	0	0

Lake County

288. Arrowtown–Macetown	200	0	0
291. Gentle Annie Bridge	300	0	0
293. Queenstown – Gentle Annie	188	0	0
295. Shotover–Valley Road	200	0	0

SOUTHLAND.

Wallace County.

299. Colac – Round Hill	7	13	0

Southland County.

301. Garvey Burn Bridge	100	0	0
303. Parawai–Cameron's–Nokomai	100	0	0

Fiord County.

307. Orepuki – Preservation Inlet Road	97	12	0

Stewart Island County.

308. Stewart Island roads	150	0	0
Expenditure for year ended 31st March, 1909	47,374	6	3
Expenditure for previous years	781,449	2	11
Total expenditure to 31st March, 1909, on Roads on Goldfields	£828,823	9	2

STATEMENT showing the EXPENDITURE out of PUBLIC WORKS FUND on DEVELOPMENT of GOLDFIELDS for Year ending 31st March, 1909.

Assistance towards Races, Reservoirs, Pumping, Draining, and Waterworks on Goldfields.

	£	s.	d.
Item No. 1—			
Waikino water-supply	1,193	15	4
Extension middle branch race	135	0	0
,, Waimea water-race	163	10	10
Ford and party, Park Terrace	90	3	0
Cook and Honey, Kapitea Creek	105	0	0
Gimmerburn Creek embankment	111	10	0
Manorburn Creek weir	448	3	7
Clearing Titri Canal	12	10	0
Ellis and McGregor, Stable Creek	17	6	8
Contingencies	13	6	2

Assistance towards Prospecting.

Item No. 2—			
Coromandel County, J. McKenner	25	0	0
,, S. McNeil and party	50	0	0
,, Couch and Roberts	24	0	0
,, Bostleman and party	27	3	0
,, H. and J. McNeil	70	15	0
,, Isaac and Rostgard	40	0	0
,, Fenton and Ryan	26	0	0
,, Kennedy and Ross	52	0	0
,, Keely and Davis	34	0	0
,, McTavish and Wilson	36	0	0
,, Dyer and Campbell	37	10	0
,, H. McNeil	58	15	0
,, W. Regan	54	15	0
,, J. Vernon	46	15	0
,, Coucher and party	11	8	0
,, Golden Hill Syndicate	17	5	0
,, Dyer and Norton	18	15	0
,, J. D. Regan	37	10	0
,, Gunn and Allen	13	16	0
,, W. H. and M. Davies	12	10	0
,, J. D. Regan	21	5	0
,, Harvey and Simpson	14	0	0
,, McNeil and Gould	6	0	0
,, C. Blasch and C. Davies	16	0	0
,, Dunn and Wills	5	5	0
Ohinemuri County, Beckman and Jones	37	10	0
,, W. H. Thompson	38	5	0
,, McKay and Thorpe	4	7	0
,, James Liddell	12	15	0
,, Maoriland Extended Gold-mining Company	100	0	0
,, Brokenshire and Newsham	2	0	0
,, T. Bray, &c.	2	0	0
Reefton Prospecting Association	33	5	0
Upper Blackwater Miners' Association	109	10	0
Inangahua County, Kirwan and Heslop	40	0	0
,, Caledonian United Gold-mining Company	413	15	0
,, Pettigrew and party	100	0	0
,, Charles Clifford	13	0	0
Buller County, Wring and Stuart	20	0	0
,, Wilson and Jenkins	148	15	0
,, Preeble and Fairhall	39	10	0
,, Negri and Miller	21	0	0
Grey County, Sweetman and party	200	0	0
,, Griffiths and Williams	34	19	6
,, R. Mitchell	28	2	6
,, D. Coll	77	4	0
,, Donellan Bros.	6	8	3
Westland County, G. Nolles	74	11	0
,, Prospecting at Rimu	205	18	6
,, Boyd and party	14	0	0
,, Singer and party	175	0	0
,, R. H. Harcourt	25	0	0
,, Irving and Acaster	30	5	0
Rimu Miners' Association, Chow's Terrace	318	10	4

EXPENDITURE out of PUBLIC WORKS FUND on DEVELOPMENT of GOLDFIELDS—*continued.*

Assistance towards Prospecting—continued.

	£	s.	d.
Prospecting Kumara Goldfield	42	5	6
Ross Borough Council (H. and B. Traversi)	28	4	0
Shotover Consolidated Mining Company	234	5	7
McNamara and party	46	11	6
Elliott, Todd, and Parker	148	4	9
Waipori Consolidated Company	100	0	0
Lake County, Lambie and party	34	9	7
,, T. Scott	20	0	0
,, Anderson and party	75	0	0
Lake County Miners' Association, C. Hayes	25	0	0
,, ,, R. Balch	40	10	0
,, ,, Soulter Bros.	8	5	0
Item No. 3. Oil-boring, Kotuku	207	10	0
4. Diamond and other drills and expenses	3,085	0	6
5. Prospecting deep-levels, Ross	8,503	0	5
6. Testing deep-levels, Thames	6,016	12	6
7. Compensation and expenses: Proclamation of rivers	50	0	0
8. Kelly's Terrace drainage-tunnel	193	6	6
9. Kumara Water-race extension	83	4	2
10. Repairs Argyle Water-race	150	0	0
11. Queen of Beauty pumping-plant maintenance	259	17	2
12. Advances to companies	8,200	0	0
15. Alexandra Water-race	15	15	0
16. Greenland Swamp Dam	39	12	0
18. Ohinemuri River silting	3	12	0
19. Protective works, Stafford	97	0	0
Expenditure for year ended 31st March, 1909	32,859	3	7
Expenditure for previous years	786,657	1	7
Total expenditure to 31st March, 1909, on Development of Goldfields	£819,516	5	2

No. 1.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several Districts of the Dominion of New Zealand for the Period from the 1st January to 31st December, 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 ..	66 5 0	74 15 0	..	326 18 6	10 0 0	56 17 0	21 13 0	556 8 6
Te Aroha ..	34 10 0	584 3 6	..	300 19 3	9 10 0	4 1 0	3 16 0	936 19 9
Paeroa	117 5 0	123 8 11	..	1,155 13 8	..	53 2 0	204 2 7	1,653 12 2
Thames ..	236 10 0	83 4 6	1 10 0	1,543 6 4	30 7 0	98 3 0	135 10 7	2,128 11 5
Puhipuhi ..	9 15 0	..	..	26 0 0	..	4 19 0	..	40 14 0
Tauranga ..	1 15 0	..	..	12 10 0	0 7 0	..	1 11 0	16 3 0
Waihi	169 10 0	..	..	1,871 8 11	47 19 0	58 1 6	458 5 7	2,605 5 0
Totals ..	635 10 0	865 11 11	1 10 0	5,236 16 8	98 3 0	275 3 6	824 18 9	7,937 13 10
NELSON.								
Motueka ..	3 5 0	..	..	32 2 0	1 4 0	1 16 0	..	38 7 0
Collingwood and Takaka	10 0 0	2 1 0	0 10 0	316 14 7	0 19 0	5 13 6	5 18 0	341 16 1
Westport ..	107 10 0	0 4 0	..	158 17 9	..	72 16 6	134 1 9	473 10 0
Charleston ..	23 0 0	..	..	16 15 11	1 0 0	1 5 0	2 7 0	44 7 11
Ahaura	57 0 0	20 0 0	..	432 13 6	12 3 0	27 1 0	74 19 0	623 16 6
Reefton.. ..	82 0 0	17 18 0	..	798 14 6	7 6 0	26 12 0	87 8 1	1,019 18 7
Wangapeka ..	5 5 0	..	..	8 7 6	..	0 2 0	0 5 0	13 19 6
Lyell and Murchison	18 10 0	0 5 0	0 10 0	174 17 9	0 7 0	1 19 0	8 10 0	204 18 9
Totals ..	306 10 0	40 8 0	1 0 0	1,939 3 6	22 19 0	137 5 0	313 8 10	2,760 14 4
MARLBOROUGH.								
Havelock ..	10 7 0	..	0 10 0	44 0 3	0 9 0	1 3 0	1 16 0	58 5 3
Blenheim ..	11 15 0	..	0 5 0	96 11 11	0 9 0	3 14 0	27 19 6	140 14 5
Totals ..	22 2 0	..	0 15 0	140 12 2	0 18 0	4 17 0	29 15 6	198 19 8
WESTLAND.								
Hokitika and Kanieri	43 15 0	..	1 10 0	234 7 11	4 3 0	25 12 0	18 7 2	327 15 1
Greymouth ..	118 0 0	..	3 10 0	8,430 1 3	3 7 0	24 0 0	10 15 0	8,589 13 3
Ross	17 5 0	..	1 0 0	327 11 5	0 6 0	0 5 0	29 7 0	375 14 5
Stafford.. ..	19 0 0	0 5 0	..	526 12 11	0 2 0	31 2 0	..	577 1 11
Okarito	9 5 0	..	1 0 0	78 7 10	1 7 0	..	5 12 0	95 11 10
Kumara ..	69 15 0	0 15 0	2 15 0	1,664 12 6	8 0 0	33 13 0	8 7 0	1,787 17 6
Totals ..	277 0 0	1 0 0	9 15 0	11,261 13 10	17 5 0	114 12 0	72 8 2	11,753 14 0
CANTERBURY.								
Ashburton ..	0 5 0	..	..	..	0 14 0	..	14 0 0	14 19 0
OTAGO AND SOUTHLAND.								
Middlemarch ..	3 0 0	0 5 0	0 5 0	15 2 6	0 12 0	1 12 0	4 3 0	24 19 6
Tapanui ..	..	..	..	..	..	..	..	..
Hindon	21 10 0	..	..	61 1 9	0 4 0	2 11 0	1 16 0	87 2 9
Naseby	41 15 0	..	..	419 13 1	..	..	21 15 0	483 3 1
Black's .. Alexandra Clyde .. Roxburgh	89 10 0	24 0 7	10 15 0	1,605 6 11	34 12 0	39 0 6	10 10 0	1,813 15 0
Cromwell ..	63 5 0	19 6 0	0 10 0	694 9 5	15 0 0	67 9 1	48 11 3	908 10 9
Queenstown ..	45 0 0	0 4 0	1 0 0	188 6 3	..	23 4 0	61 11 0	319 5 3
Arrowtown ..	12 0 0	0 2 0	..	215 1 9	..	23 7 0	0 10 0	251 0 9
Lawrence ..	69 15 0	..	2 5 0	653 1 3	7 1 0	12 11 0	10 13 6	755 6 9
Orepuki ..	..	..	..	24 11 8	4 9 0	..	4 3 4	33 4 0
Riverton and Longwood	28 3 0	9 1 0	..	172 5 2	4 17 0	..	15 4 0	229 10 2
Pembroke ..	5 0 0	0 2 0	..	0 15 0	..	..	..	5 17 0
Waikaia ..	6 10 0	..	..	425 11 7	0 1 0	10 16 0	24 13 0	467 11 7
Wyndham ..	2 5 0	..	0 5 0	15 14 9	0 7 0	0 6 0	..	18 17 9
Gore	8 15 0	..	0 5 0	133 17 7	0 15 0	2 12 0	17 16 0	164 0 7
Totals ..	396 8 0	53 0 7	15 5 0	4,624 18 8	67 18 0	183 8 7	221 6 1	5,562 4 11
Grand totals ..	1,637 15 0	960 0 6	28 5 0	23,203 4 10	207 17 0	715 6 1	1,475 17 4	28,228 5 9

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, 1909.

District.	Miners' Rights.	Business Licenses, Machine and Residence Sites.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Totals.
AUCKLAND.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Coromandel ..	7 5 0	14 0 0	..	59 2 7	2 6 0	7 15 0	3 4 0	93 12 7
Thames ..	28 15 0	10 10 0	0 10 0	450 2 7	4 18 0	9 9 0	51 0 4	555 4 11
Te Aroha ..	5 0 0	116 15 0	13 0 0	14 4 6	2 1 0	1 12 0	0 15 0	153 7 6
Paeroa ..	18 0 0	88 15 7	..	517 4 3	..	13 11 0	97 7 9	734 18 7
Puhipuhi ..	0 15 0	..	..	6 0 0	..	0 16 0	..	7 11 0
Tauranga ..	1 10 0	..	..	..	..	..	0 5 0	1 15 0
Waihi ..	34 0 0	..	..	678 7 2	8 13 0	26 7 8	7 10 9	754 18 7
Totals ..	95 5 0	230 0 7	13 10 0	1,725 1 1	17 18 0	59 10 8	160 2 10	2,301 8 2
NELSON.								
Collingwood and Takaka	3 5 0	0 1 0	0 10 0	157 10 9	0 8 0	1 1 0	4 8 0	167 3 9
Westport ..	29 10 0	0 4 0	..	74 13 8	..	11 0 0	9 5 6	124 13 2
Charleston ..	5 15 0	..	..	3 11 3	0 6 0	0 2 0	..	9 14 3
Ahaura ..	12 10 0	3 0 0	..	64 5 0	1 14 0	10 10 0	18 3 0	110 2 0
Wangapeka ..	2 15 0	..	..	..	..	..	..	2 15 0
Reefton ..	16 5 0	2 10 0	..	355 0 3	2 0 0	4 17 0	35 8 0	416 0 3
Lyell and Murchison	1 5 0	0 5 0	0 5 0	6 2 6	0 1 0	0 12 0	0 2 0	8 12 6
Motueka ..	1 15 0	..	..	2 1 8	0 2 0	0 2 0	..	4 0 8
Totals ..	73 0 0	6 0 0	0 15 0	663 5 1	4 11 0	28 4 0	67 6 6	843 1 7
MARLBOROUGH.								
Havelock ..	1 15 0	..	..	8 16 3	..	1 2 0	0 10 0	12 3 3
Blenheim ..	2 5 0	..	..	46 14 6	..	0 10 0	3 5 0	52 14 6
Totals ..	4 0 0	..	..	55 10 9	..	1 12 0	3 15 0	64 17 9
WESTLAND.								
Hokitika and Kanieri	16 0 0	..	..	67 4 2	4 4 0	9 12 0	11 10 0	108 10 2
Greymouth ..	22 0 0	..	..	1,300 8 9	0 12 0	6 12 0	0 15 0	1,330 7 9
Ross	2 15 0	..	0 5 0	27 11 6	..	..	11 18 0	42 9 6
Stafford ..	6 5 0	0 5 0	..	229 7 6	..	8 6 0	..	244 3 6
Kumara ..	12 10 0	0 2 0	..	348 15 10	3 0 0	3 1 0	2 17 10	370 6 8
Okarito ..	1 0 0	..	..	17 15 6	0 10 0	..	1 13 0	20 18 6
Totals ..	60 10 0	0 7 0	0 5 0	1,991 3 3	8 6 0	27 11 0	28 13 10	2,116 16 1
CANTERBURY.								
Ashburton ..	1 0 0	..	..	..	..	..	..	1 0 0
OTAGO AND SOUTHLAND.								
Tapanui ..	..	..	..	1 0 0	..	..	..	1 0 0
Hindon ..	5 0 0	..	..	15 10 0	..	..	..	20 10 0
Naseby ..	7 10 0	..	..	181 14 2	..	..	2 12 0	191 16 2
Roxburgh / Alexandra / Clyde / Black's	23 0 0	4 0 0	6 15 0	726 1 1	5 6 0	12 17 0	0 6 0	778 5 1
Pembroke ..	1 0 0	..	0 5 0	0 15 0	0 1 0	..	..	2 1 0
Cromwell ..	7 15 0	3 2 1	0 5 0	197 13 10	1 19 0	6 12 0	6 9 0	223 15 11
Queenstown ..	12 15 0	0 3 0	..	126 6 3	..	5 1 0	..	144 5 3
Arrowtown ..	2 10 0	..	..	41 11 7	..	3 6 0	..	47 7 7
Lawrence ..	10 0 0	..	0 5 0	297 8 6	1 15 0	4 1 0	17 2 6	330 12 0
Waikaia ..	1 10 0	..	..	221 1 0	..	2 4 0	5 10 0	230 5 0
Orepuki ..	..	..	..	11 2 5	1 18 0	0 18 0	2 10 0	16 8 5
Riverton ..	7 5 0	4 10 0	..	98 12 11	0 16 0	2 1 0	3 0 0	116 4 11
Wyndham ..	0 10 0	..	..	3 0 0	..	..	..	3 10 0
Middlemarch ..	1 0 0	..	..	..	0 2 0	0 2 0	..	1 4 0
Gore	3 5 0	..	..	12 5 7	0 7 0	1 6 0	..	17 3 7
Totals ..	83 0 0	11 15 1	7 10 0	1,934 2 4	12 4 0	38 8 0	37 9 6	2,124 8 11
Grand totals ..	316 15 0	248 2 8	22 0 0	6,369 2 6	42 19 0	155 5 8	297 7 8	7,451 12 6

No. 3.

COMPARATIVE RETURN of REVENUE derived from the GOLDFIELDS in the several Districts of New Zealand during the Years 1907 and 1908, 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 1907	660	1,023	23	5,248	98	245	1,916	31,253	40,466
Year 1908	636	866	2	5,237	98	275	824	30,963	38,901
Increase	..	..	..	..	..	30	..	..	..
Decrease	24	157	21	11	..	..	1,092	290	1,565
NELSON—									
Year 1907	311	17	101	2,051	51	152	576	..	3,259
Year 1908	307	40	1	1,939	23	137	313	..	2,760
Increase	..	23	..	..	..	..	..	..	..
Decrease	4	..	100	112	28	15	263	..	499
MARLBOROUGH—									
Year 1907	28	3	2	216	6	14	27	..	296
Year 1908	22	..	1	141	1	5	29	..	199
Increase	..	..	..	..	..	..	2	..	..
Decrease	6	3	1	75	5	9	..	..	97
CANTERBURY—									
Year 1907	1	..	..	..	..	..	..	..	1
Year 1908	..	..	..	..	1	..	14	..	15
Increase	..	..	..	..	1	..	14	..	14
Decrease	1	..	..	..	..	..	..	..	..
WESTLAND—									
Year 1907	217	20	10	1,945	26	108	8,162	..	10,488
Year 1908	277	1	10	11,262	17	115	72	..	11,754
Increase	60	..	..	9,317	..	7	..	..	1,266
Decrease	..	19	..	..	9	..	8,090	..	..
OTAGO—									
Year 1907	416	59	26	5,200	76	326	191	..	6,294
Year 1908	396	53	15	4,625	68	183	222	..	5,562
Increase	..	..	..	..	..	..	31	..	..
Decrease	20	6	11	575	8	148	..	..	732
Total increase ..	5	..	..	8,544	..	..	..	..	..
Total decrease ..	..	162	133	..	49	130	9,398	290	1,613

No. 4.

COMPARATIVE RETURN of the TOTAL AMOUNTS of GOLDFIELDS REVENUE (exclusive of Gold Duty) collected in the several Districts during the Years 1907 and 1908 and the Quarters ending 31st March, 1908 and 1909 respectively, showing the INCREASE or DECREASE in respect of each District.

District.	Years 1907 and 1908.				Quarters ending 31st March, 1908, and 31st March 1909.			
	1907.	1908.	Increase.	Decrease.	1908.	1909.	Increase.	Decrease.
AUCKLAND.	£	£	£	£	£	£	£	£
Coromandel	554	556	2	..	171	94	..	77
Thames	2,859	2,128	..	731	652	555	..	97
Whangarei	..	..	..	..	..	..	..	..
Ohinemuri	1,669	1,654	..	15	532	735	203	..
Te Aroha	896	937	41	..	144	153	9	..
Tauranga	11	16	5	..	15	2	..	13
Waihi	3,185	2,605	..	580	991	755	..	236
Puhipuhi	39	41	2	..	15	8	..	7
NELSON.								
Motueka	..	38	38	..	15	4	..	11
Collingwood and Takaka	395	342	..	53	153	167	14	..
Westport	739	473	..	266	106	125	19	..
Charleston	61	44	..	17	20	10	..	10
Ahaura	695	624	..	71	227	110	..	117
Reefton	1,003	1,020	17	..	412	416	4	..
Wangapeka	..	14	14	..	..	3	3	..
Lyell and Murchison ..	366	205	..	161	105	9	..	96
MARLBOROUGH.								
Havelock	51	58	7	..	4	12	8	..
Blenheim	245	141	..	104	32	53	21	..
WESTLAND.								
Hokitika ..	332	328	..	4	126	108	..	18
Kanieri ..								
Greymouth	8,515	8,590	75	..	3,860	1,330	..	2,530
Ross	122	376	254	..	75	42	..	33
Stafford and Goldsborough	282	577	295	..	109	244	135	..
Okarito	62	95	33	..	4	21	17	..
Kumara	1,176	1,788	612	..	389	370	..	19
CANTERBURY.								
Ashburton	1	15	14	..	..	1	1	..
OTAGO AND SOUTHLAND.								
Hindon	100	87	..	13	50	21	..	29
Naseby	548	483	..	65	138	192	54	..
Alexandra ..								
Black's ..								
Clyde ..	2,118	1,814	..	304	692	778	86	..
Roxburgh ..								
Cromwell	874	909	35	..	414	224	..	190
Arrowtown	370	251	..	119	79	47	..	32
Queenstown	365	319	..	46	81	144	63	..
Pembroke	9	6	..	3	2	2	..	..
Lawrence	868	755	..	113	333	331	..	2
Waikaia	490	468	..	22	169	230	61	..
Tapanui	15	..	..	15	..	1	1	..
Orepuki, Preservation, Longwood, and Riverton	313	263	..	50	106	133	27	..
Wyndham	23	19	..	4	7	4	..	3
Middlemarch	21	25	4	..	1	1	..	..
Gore	179	164	..	15	31	17	..	14
Totals	29,551	28,228	..	..	10,260	7,452	726	3,534
Net decrease ..	..	..	..	1,323	..	..	..	2,808
Net increase ..	..	..	..	..	..	..	..	..

No. 5.

RETURN of GOLD DUTY credited to LOCAL BODIES for the Year ended 31st December, 1908, and Quarter ended 31st March, 1909.

Local Body.	For the Year ended 31st December, 1908.	For the Quarter ended 31st March, 1909.
COUNTIES—	£ s. d.	£ s. d.
Coromandel	128 12 11	42 0 2
Ohinemuri	7,318 5 0	1,252 10 7
Piako	..	..
Thames	482 15 2	165 13 0
BOROUGHS—		
Thames	1,096 17 9	80 2 6
Waihi	21,936 13 7	3,885 10 8
Totals	30,963 4 5	5,425 16 11

R. B. VINCENT,
Accountant to the Treasury.

The Treasury, Wellington, 3rd May, 1909.

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, 1908.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST DECEMBER, 1908.		ENTERED FOR EXPORTATION TO THE 30TH SEPTEMBER, 1908.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST DECEMBER, 1908.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	1,656	6,035				
" Ohinemuri ..		16,032	56,326				
" Coromandel		199	838				
Borough of Thames ..		801	3,377				
" Waihi ..		56,880	234,716				
		75,568	301,292	4,511,842	17,047,011	4,587,410	17,348,303
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	199	794	89,992	350,574	90,191	351,368
County of Collingwood	Nelson	835	3,339				
" Waimea ..		13	52				
" Takaka ..		34	136				
		882	3,527	1,720,786	6,821,997	1,721,668	6,825,524
County of Buller ..	West Coast	941	3,550				
" Inangahua ..		13,287	50,645				
" Grey ..		3,792	15,294				
" Westland ..		1,820	7,336				
Borough of Ross ..		276	1,104				
		20,116	77,929	5,390,677	21,447,310	5,410,793	21,525,239
	Canterbury ..	..	..	99	387	99	387
County of Taieri ..	Otago	405	1,625				
" Tuapeka ..		4,607	18,533				
" Vincent ..		4,235	17,097				
" Maniototo ..		1,565	6,142				
" Waihemo ..		69	206				
" Waitaki ..		466	1,795				
" Lake ..		549	2,211				
" Wallace ..		1,117	4,524				
" Fiord ..		28	112				
" Southland ..		6,174	24,907				
		19,215	77,152	6,895,332	27,404,400	6,914,547	27,481,552
Unknown	..	..	..	207	824	207	824
Totals ..	..	115,980	460,694	18,609,123	73,073,209	18,725,103	73,533,903

* 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, 1908 and 1907.

PRODUCE OF THE GOLDFIELDS IN THE DISTRICT OF	DURING THE QUARTER ENDED				TOTALS FOR YEAR 1908.		TOTALS FOR YEAR 1907.	
	31st March, 1908.	30th June, 1908.	30th September, 1908.	31st December, 1908.	Quantity.	Value.	Quantity.	Value.
	Oz.	Oz.	Oz.	Oz.	Oz.	£	Oz.	£
Auckland ..	74,634	71,251	75,518	75,568	296,971	1,171,375	298,101	1,187,079
Marlborough ..	35	..	63	199	297	1,145	795	3,009
Nelson ..	457	1,480	377	882	3,196	12,783	3,893	15,274
West Coast ..	23,267	18,610	24,059	20,116	86,052	335,722	87,069	343,146
Otago ..	35,710	29,373	35,609	19,215	119,907	483,900	118,352	478,982
Totals for 1908	134,103	120,714	135,626	115,980	506,423	2,004,925	..	..
Totals for 1907	118,118	108,752	155,211	126,129	..	..	508,210	2,027,490

Department of Trade and Customs,
Wellington, 25th January, 1909.

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, 1909.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST MARCH, 1909		ENTERED FOR EXPORTATION TO THE 31ST DEC., 1908.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST MARCH, 1909.	
County or Borough.	District.	Qu'ntity	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	2,058	7,631				
" Ohinemuri ..		12,525	44,082				
" Coromandel ..		420	1,772				
Borough of Thames ..		1,003	4,171				
" Waihi ..		38,856	159,101				
		54,862	216,757	4,587,410	17,348,303	4,642,272	17,565,060
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	..	..	90,191	351,368	90,191	351,368
County of Collingwood ..	Nelson	602	2,408				
		602	2,408	1,721,668	6,825,524	1,722,270	6,827,932
County of Buller ..	West Coast	1,970	7,630				
" Inangahua ..		10,874	42,065				
" Grey ..		6,978	28,082				
" Westland ..		3,244	13,021				
Borough of Ross ..		405	1,618				
		23,471	92,416	5,410,793	21,525,239	5,434,264	21,617,655
	Canterbury ..	..	..	99	387	99	387
County of Taieri ..	Otago	1,038	4,149				
" Tuapeka ..		6,908	27,945				
" Vincent ..		12,376	49,835				
" Maniototo ..		1,847	7,339				
" Waihemo ..		320	1,249				
" Waitaki ..		943	3,771				
" Lake ..		1,032	4,154				
" Wallace ..		1,540	6,216				
" Bruce ..		59	234				
" Clutha ..		3	13				
" Fiord ..		27	108				
" Southland ..		12,108	49,202				
		38,201	154,215	6,914,547	27,481,552	6,952,748	27,635,767
Unknown	..	..	..	207	824	207	824
Totals ..	..	117,136	465,796	18,725,103	73,533,903	18,842,239	73,999,699

*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, 1909, and 31st March, 1908.

District of	Quarter ended 31st March, 1909.		Quarter ended 31st March, 1908.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Auckland	54,862	216,757	74,634	290,506
Marlborough	..	..	35	131
Nelson	602	2,408	457	1,828
West Coast	23,471	92,416	23,267	91,300
Otago	38,201	154,215	35,710	144,304
Totals	117,136	465,796	134,103	528,069

RICHD. CARTER,
Secretary and Inspector.

Department of Trade and Customs, Wellington, 13th April, 1909.

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, 1908.

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 9 6	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 4 0	0 10 0	..	..
	Tauranga	..	..	..	..
MARLBOROUGH—	Havelock	3 14 6	0 8 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 14 0	..	..	..
	Westport	3 17 6	..	..	..
	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	..	0 3 0	..
	Stafford	3 18 0	..	0 15 0	..
	Greymouth	3 19 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	0 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 6	..	0 10 0	40 in.
	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 0	..	..	..
	Roxburgh .. Clyde and Alexandra Black's	3 17 6	..	..	40 in.
	Gore	3 17 6	..	2 10 0	..

No. 11.

RETURN showing he AVERAGE PRICES of PROVISIONS and LIVE-STOCK for the Year ending 31st December, 1908.

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.
AUCKLAND—			d.							£		£			d.	d.	d.	d.	d.	d.	d.			
Thames	90/	27/	1¾	1/1	/7	/7	1/10	11/6	4/6	8	10/	12	15/	12/	5	4	6	4	2½	½	3	1/6	5/6	15/–20/
Paeroa..	80/	17/	2	1/2	/9	/7	1/6	15/	4/10	8	..	10–45	17/	30/	6	5	6	3	2½	1	2	1/6	5/6	18/
Coromandel	100/	27/	2	1/2	/10	/7	1/6	11/	4/8	10	10/	5–40	10/	30/	6	5	6	4	2½	1	3	1/4	5/6	26/
Tauranga	105/	30/	2	/10	..	/9	1/6	14/	4/	5–10	..	5–40	6/–18/	10/–35/	3	4	5	3	3	1	2½	1/	5/	10/–50/
Te Aroha	80/	17/	2	1/2	/9	/7	1/6	15/	4/6	8	..	8–40	15/–25/	30/	6	5	6	4	2½	1	2	1/6	5/6	18/
Waihi	86/	26/	1¾	1/2	1/	/8	1/6	12/	5/	3–10	..	5–50	12/–28/	10/–60/	6	6	7	4	2½	1	2½	2/	5/	18/
Puhipuhi	100/	30/	2	1/	/10	/8	1/6	15/	5/9	3–9	10/	15	10/	25/	8	7	8	3	2½	1	2½	1/6	5/6	14/
MARLBOROUGH—																								
Blenheim	84/	28/	1¾	1/3	..	/7½	2/	12/6	5/	8	..	17	12/	30/	5½	5	6	4	2½	1	3	1/10	6/	17/6
Havelock	100/	25/	1¾	1/	..	/8	1/10	12/6	4/6	6	15/	15	15/	30/	4	4	5	4	3	1	3	2/	6/	20/
NELSON—																								
Wangapeka	100/	35/	2	1/	/10	/9	2/	17/	7/	7	..	15–50	21/	20/–70/	6	6	6	5	4	2	4	2/	7/	25/
Collingwood	95/	24/	2	/10	/9	/8	2/	14/	6/6	4–6	7/6	10–25	12/	20/–40/	4½	4½	5	3	3	1	2½	1/3	5/6	15/
Takaka	..	..	2	/10	/8	/9	2/	13/6	6/	6	20/	14–35	12/6	45/	5	4	5	3	3	1	3	2/	6/	8/
Inangahua	80/	27/	2	1/1	/10	/9	1/9	14/	6/	7	..	20–60	20/	30/	5–8	5–7	5–7	4	3	1	2½	1/10	6/	15/
Lyell	80/	25/	2½	1/3	1/	/10	2/	16/6	6/6	5	5/	16	15/	40/	6	6	6	6	3	1	1	2/	6/	15/
Murchison	96/	42/	2½	1/	/11	/9	2/	16/	8/6	6	..	18–35	12/	40/	5	5	5	4	3½	2	3½	2/	6/6	20/
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	2½	1/6	5/6	15/
Charleston	80/	35/	2	1/6	/11	/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/	/9	/9	2/	12/6	6/	7–12	5/	10–50	12/6-18/	30/–100/	6	6	8	4	3	2	3	2/	5/6–6/6	15/
WESTLAND—																								
Stafford ..	100/	30/	2	1/3	1/	/8	1/9	14/	6/	5	5/	20	20/	15/	6	6	6	6	3	1	3	2/	6/	26/
Waimea ..																								
Hokitika and Kanieri ..	85/	24/	1¾	1/2	1/	/7	1/6	16/	6/	5–10	..	20–45	17/6	30/	6	6	7	5	2½	1	3	2/6	5/6	12/
Ross	85/	24/	2	1/3	/10	/8	1/6	13/	6/6	8	..	30–50	18/	50/	6	6	6	4	3	1	2½	2/	6/	20/
Okarito	120/	30/	3	1/3	1/	/11	2/	17/6	7/	8	..	15	15/	30/	5	5	1/	4	4	2	3½	2/3	6/6	18/
Greymouth	90/	27/	2	1/2	1/1	/8	1/9	11/6	6/	3–10	..	9	12/–25/	10/	6	5	7	4	2½	1¼	3	2/	5/6	18/
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	2/	5/6	12/
OTAGO—																								
Hindon	..	..	2	1/3	/10	/9	1/9	16/	5/	6–12	..	10–35	12/–17/	45/	6	5	5½	4	3	1½	2½	2/	6/	..
Tuapeka	90/	27/	1½	1/	1/	/6	1/6	14/	5/	5–8	..	15–45	17/6	20/	6	6	6	4	2	1	3	1/8	5/	21/
Tapanui	..	42/	1½	/10	/10	/11	1/6	18/	4/	5–10	..	10–50	10/–25/	18/–60/	6	6	6	4	2½	1	2½	1/7	8/6	24/
Cromwell	100/	28/	2	1/1	1/4	/8	1/6	12/9	5/	8	..	40	18/	50/	6	5	6	4	3	1	2¼	1/–2/	5/6	20/
Clyde ..																								
Alexandra ..	90/	30/	2	1/2	1/2	/8	1/9	12/	5/	2–6	..	5–45	18/	30/	6	4	8	5	2½	1½	3	2/	6/	20/
Roxburgh ..																								
Black's ..																								
Queenstown	90/	28/6	1¾	1/	/10	/8	1/9	10/	3/	3–4	..	25–50	11/	30/	6	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	12/	22/6	6	5½	6	2	2½	2	3	1/10	6/	15/
Mount Ida ..	84/	28/6	2	/11	/8	/11	2/	15/	4/6	5–9	10/	20–50	15/-22/6	50/	4	4½	6	4	3	1	2¼	1/	5/6	12/6
Nenthorn ..																								
Waikaia	90/	36/	2	1/3	1/	/9	2/	16/	4/	6–11	..	10–45	18/	17/–55/	7	6	6	5	4	2	3	2/	6/6	20/–36/
Riverton and Orepuki ..	92/	24/6	1¾	/10	/10	/8	1/6	12/9	5/6	6	..	25–40	16/6	38/	6½	5	8½	4	2½	1	2	1/10	5/	16/
Gore	80/	45/	1¾	/10	/8	/8	1/8	12/6	4/6	5	22/6	20	12/6	40/	2¾	3	5	4	2¼	1	2½	1/9	5/6	25/
Wyndham	90/	35/	2	1/	1/	/8	1/9	11/	3 /6	6	..	25	12/	30/	5	5	6	2	3	1	2	1/9	5/	26/

No. 12.

TABLE showing the AVERAGE RATE of WAGES per Week for the Year ending 31st December, 1908.

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	3 0 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 to £7	£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 18/
Tauranga	4 0 0	1 0 0	4 10 0	3 10 0	3 0 0	2 10 0	2 10 0	3 0 0	3 0 0	2 16 0	1 10 0	..	2 0 0	22/
Waihi	..	..	£6 to £8	3 6 0	3 0 0	2 11 0	2 17 0	2 17 0	2 14 0	2 5 0	1 10 0	..	45/ and keep	10/
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	..	..	..	..	3 0 0	..	3 0 0	3 0 0	2 8 0	2 2 0	10/ and found	..	2 2 0	12/ to 15/
Charleston	4 15 0	..	4 0 0	..	..	..	3 10 0	3 0 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	6 0 0	6 0 0	4 10 0	3 10 0	3 0 0	3 0 0	3 0 0	3 0 0	2 14 0	0 15 0	2 7 0	25/ 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	3 0 0	2 14 0	1 5 0	1 0 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	2 15 0	3 0 0	3 0 0	3 0 0	2 14 0	2 0 0	1 0 0	1 0 0	12/
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	10/ to 20/
Ross	6 0 0	1 10 0	4 10 0	5 0 0	3 10 0	..	3 10 0	3 12 0	3 6 0	3 0 0	0 12 6	..	..	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	5 0 0	4 0 0	2 10 0	3 12 0	3 10 0	3 0 0	2 14 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 15 0	1 0 0	1 5 0	10/ to 14/
Tapanui	..	..	5 0 0	3 10 0	3 0 0	2 8 0	3 0 0	3 10 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 8 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	3 0 0	2 8 0	2 8 0	1 10 0	..	2 8 0	12/

No. 13.

NUMBER of MACHINES employed in ALLUVIAL and QUARTZ MINING, and the VALUE thereof, for the Year ending 31st December, 1908.

District.	Machinery employed in Alluvial Mining.														Machinery employed in Quartz-mining.									Approximate Value of all Mining Plant included in this Return.
	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.	
	No.	Aggregate h.p.													No.	Aggregate h.p.								
AUCKLAND—																								
Paeroa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	1,380	11	305	10	..	..	..	..	160,703
Coromandel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24	706	..	..	5	..	..	..	..	94,896
Thames	..	..	..	..	..	..	..	..	..	..	..	..	..	..	29	1,337	40	530	25	..	..	..	149	196,556
Te Aroha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	2,500
Waihi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	8,947	11	375	34	..	1	..	..	..
Totals ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	119	12,370	62	1,220	74	..	1	..	149	454,655
MARLBOROUGH—																								
Wakamarina ..																								
Cullen's Creek ..																								
Waikakaho ..																								
Blenheim																								
	..	..	..	..	..	3	..	1	1	1	..	..	20	1	..	10	2	20	..	..	..	..	..	14,131
Totals ..	..	..	..	..	..	3	..	1	1	1	..	..	20	1	..	10	2	20	..	..	..	..	..	14,131
NELSON—																								
Collingwood ..	..	..	..	..	..	3	..	5	..	..	..	1	..	2	1	5	2	28	1	..	..	..	..	39,500
Inangahua ..	..	..	..	..	..	..	..	..	..	6	..	..	5	..	10	300	10	200	3	4	..	..	..	250,000
Charleston ..	..	..	..	..	..	..	3	2	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	350
Lyell	2	32	..	..	..	..	..	..	1	2	..	..	..	1	..	..	1	20	5	..	..	..	..	3,200
Murchison ..	..	..	..	..	..	312	..	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,300
Westport	..	..	..	..	..	35	5	20	..	..	..	..	17	..	..	..	4	14	3	..	..	..	..	6,500
Ahaura	..	..	..	..	..	750	..	2,500	..	8	..	1	..	..	..	..	2	11	2	..	..	..	..	50,000
Totals ..	2	32	..	..	..	1,100	8	2,540	1	16	..	2	37	3	11	305	19	273	14	4	..	..	..	352,850
WESTLAND—																								
Stafford	..	..	..	3	5	6,000	4	200	2	1	2	1	..	..	..	..	..	..	..	..	..	..	..	25,000
Ross	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	1	..	..	..	..	200
Hokitika and Kanieri	..	..	..	..	..	65	..	4	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	12,000
Greymouth ..	..	..	..	..	..	100	..	50	..	3	2	..	..	..	..	..	..	..	..	..	..	..	..	20,000
Kumara	..	..	..	..	..	25	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	20,000
Totals ..	..	..	..	3	5	6,190	4	254	2	8	4	1	..	..	..	..	..	5	1	..	..	..	..	77,200
OTAGO AND SOUTHLAND—																								
Tapanui	1	14	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1,000
Hindon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	16	1	10	..	..	..	..	..	750
Tuapeka	..	..	..	..	..	375	..	60	..	5	..	..	..	..	2	16	3	15	2	..	..	..	..	40,000
Cromwell	..	..	..	..	..	..	..	16	..	20	..	..	..	..	4	30	4	30	1	..	..	..	..	90,000
Clyde and Alexandra																								
Roxburgh ..																								
Black's	..	..	..	..	..	650	1	26	2	39	..	..	..	2	..	..	3	15	2	..	..	..	..	298,000
Orepuki, Waiau, and Roundhill Preservation	3	200	..	..	..	145	1	115	12	..	..	..	..	1	1	14	2	10	4	2	..	..	11	..
Waikaia (Switzers)	..	..	..	..	..	120	..	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	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	..	..	..	..	..	30,000
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.																								
	..	..	..	..	..	145	1	523	..	1	..	37	..	..	3	96	4	40	3	..	1	..	4	103,195
Gore	..	..	..	..	..	..	..	..	..	26	..	..	..	..	..	..	..	..	..	..	..	..	..	91,000
Totals ..	5	218	..	..	..	1,855	3	825	18	93	..	38	..	4	14	184	26	202	12	2	1	1	15	745,945

SUMMARY.

Auckland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	119	12,370	62	1,220	74	..	1	..	149	454,655
Marlborough ..	..	..	..	..	..	3	..	1	1	1	..	..	20	1	..	10	2	20	..	..	..	..	..	14,131
Nelson	2	32	..	..	..	1,100	8	2,540	1	16	..	2	37	3	11	305	19	273	14	4	..	..	..	352,850
Westland	..	..	..	3	5	6,190	4	254	2	8	4	1	..	..	..	..	..	5	1	..	..	..	..	77,200
Otago	5	218	..	..	..	1,855	3	825	18	93	..	38	..	4	14	184	26	202	12	2	1	1	15	745,945
Totals ..	7	250	..	3	5	9,148	15	3,620	22	118	4	41	57	8	144	12,869	109	1,720	101	6	2	1	164	1,644,781

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, 1908.

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	27	180	59,110	8	370	71	820	2	5,000	..	..	65,300
Te Aroha ..	3	2	13	2,500	..	..	2	200	..	..	..	..	2,700
Paeroa	168	199	2,468	122,446	1	1,000	35	5,000	3	3,000	..	..	131,446
Waihi	18	39	386	..	7	..	20	..	..	..	..	..	..
Totals ..	214	273	3,068	188,556	16	1,370	131	6,530	8	8,050	..	..	204,506
MARLBOROUGH—													
Blenheim ..	37	25	185	2,000	8	..	6	..	..	..	..	..	2,000
Havelock ..	16	11	24	320	..	..	1	30	..	..	..	..	350
Totals ..	53	36	309	2,320	8	..	7	30	..	..	..	..	2,350
NELSON—													
Wangapeka, Baton, and Sherry	5	4	22	400	2	100	..	..	..	..	2	50	550
Collingwood ..	117	140	1,224	140,766	71	7,850	79	11,030	..	..	9	..	159,646
Inangahua ..	175	108	1,150	57,000	30	10,000	44	26,000	..	..	..	..	93,000
Charleston ..	18	98	200	2,000	20	120	20	2,900	..	..	5	280	5,300
Westport ..	276	185	1,430	14,220	183	22,457	424	14,589	..	..	..	..	51,266
Lyell	2	2	13	150	..	..	..	..	..	..	..	..	150
Murchison ..	49	102	623	27,750	20	386	11	108	..	..	14	160	28,404
Ahaura	200	400	1,550	150,000	75	14,000	60	2,000	..	..	..	..	166,000
Motueka ..	5	8	31	3,750	..	..	..	..	..	..	..	..	3,750
Takaka	4	4	14	120	1	30	1	100	1	100	1	50	400
Totals ..	851	1,051	6,257	396,156	402	54,943	639	56,727	1	100	31	540	508,466
WESTLAND—													
Hokitika & Kanieri	354	259	617	162,327	151	2,975	361	3,963	..	..	..	..	169,265
Ross	6	19	50	30,000	6	1,900	14	7,000	1	300	2	200	39,400
Kumara ..	40	39	285	16,710	32	17,300	28	6,150	..	..	..	..	40,160
Greymouth ..	439	313	1,759	29,282	70	1,200	100	3,000	..	..	..	..	33,482
Okarito	..	..	..	..	..	..	..	..	..	..	..	..	..
Stafford.. ..	200	300	600	20,000	180	5,000	300	5,000	6	1,000	100	600	31,600
Totals ..	1,039	930	3,311	258,319	439	28,375	803	25,113	7	1,300	102	800	313,907
OTAGO AND SOUTHLAND—													
Hindon	25	25	100	5,000	5	70	3	350	..	..	5	30	5,450
Tuapeka ..	290	895	1,790	18,700	100	5,000	332	9,950	..	..	..	..	33,650
Tapanui ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clyde, Alexandra, Black's, and Roxburgh	575	1,675	2,025	92,000	250	8,000	165	11,000	2	8,000	..	..	119,000
Arrow	230	290	626	14,283	228	2,197	55	1,555	..	..	..	..	18,035
Cromwell ..	610	1,477	2,412	108,395	317	14,828	257	12,645	..	..	..	..	135,868
Waikaia ..	337	450	860	53,000	200	2,000	128	3,000	..	..	8	500	58,500
Riverton and Orepuki	185	270	950	63,586	26	4,750	62	2,322	..	..	..	..	70,658
Queenstown ..	205	256	13,246	63,569	134	44,456	72	5,433	..	..	..	..	113,458
Naseby													
Kyeburn & Clarke's													
Hamilton's and Sowburn													
Hyde & Fullerton's													
Macrae's, Strath-Taieri, and Shag Valley	1366	3,784	3,217	82,732	796	24,097	358	19,575	..	..	..	..	126,404
Serpentine ..													
St. Bathan's and Ida Valley													
Wyndham ..	3	3	18	700	..	..	..	..	..	..	..	..	700
Gore	17	24	..	1,960	2	2,500	5	232	..	..	..	..	4,692
Totals ..	3,843	9,149	25,244	503,925	2,058	107,898	1,437	66,062	2	8,000	13	530	686,415

SUMMARY.

Auckland ..	214	273	3,068	188,556	16	1,370	131	6,530	8	8,050	..	..	204,506
Marlborough ..	53	36	309	2,320	8	..	7	30	..	..	..	..	2,350
Nelson	851	1,051	6,257	396,156	402	54,943	639	56,727	1	100	31	540	508,466
Westland ..	1,039	930	3,311	258,319	439	28,375	803	25,113	7	1,300	102	800	313,907
Otago	3,843	9,149	25,244	503,925	2,058	107,898	1,437	66,062	2	8,000	13	530	686,415
Totals ..	6,000	11,439	38,189	1,349,276	2,923	192,586	3,017	154,462	18	17,450	146	1,870	1,715,644

No 15.

RETURN of CASES in the WARDENS' COURTS, and COSTS AWARDED, for the Year ending 31st December, 1908.

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	15	174 17 8	18 11 8	8 19 0	..
Thames	2	453 2 10	..	175 9 2	..
Te Aroha	1	32 9 0	31 13 9	1 2 0	..
Paeroa	21	345 3 7	37 11 0	10 4 0	5*
Waihi	12	242 14 0	108 3 0	32 9 4	7
MARLBOROUGH—					
Blenheim	..	..	..	..	..
NELSON—					
Inangahua	8	184 6 3	31 16 3	28 13 3	3†
Collingwood	2	..	..	14 14 0	..
Lyell and Murchison	5	42 5 0	42 5 0	6 6 0	..
Westport	12	43 16 1	17 3 9	26 11 6	8
Charleston					
Takaka	..	..	..	..	..
Wangapeka	..	..	..	..	..
WESTLAND—					
Kumara	32	200 13 2	29 7 3	27 13 0	..
Greymouth	..	..	..	..	..
Hokitika and Kanieri	3	155 1 3	42 1 3	14 16 0	..
Stafford	4	275 8 6	4 10 0	3 9 0	74‡
Ross	..	..	..	..	..
Ahaura	6	565 13 9	10 3 9	47 12 2	..
Okarito	1	3 15 0	3 15 0	0 9 0	1†
OTAGO AND SOUTHLAND—					
Tuapeka	5	..	..	4 11 0	..
Cromwell	29	175 8 6	58 2 0	46 4 4	1
Black's	1	50 0 0	10 0 0	9 16 0	..
Roxburgh	69	151 18 0	36 6 0	49 9 3	10*
Clyde and Alexandra ..					
Waikaia	10	578 11 0	107 10 0	5 5 10	..
Orepuki, Longwood, and Riverton ..	2	..	..	14 1 0	..
Arrow (Wakatipu Goldfield) ..	1	16 0 0	..	..	..
Queenstown	..	..	..	..	..
Gore	2	..	..	..	..
Naseby	2	25 0 0	5 0 0	8 17 0	1§
Wyndham	..	..	..	..	..
Totals	245	3,716 3 7	593 19 8	536 11 10	110

* Forfeiture decreed. † Cancellation of license. ‡ Seventy-four mining applications dealt with. § Injunction as prayed.

No. 16.

RETURN of the NUMBER of MINING LEASES or LICENSES in Force on the 31st December, 1908, 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	117	4,167 3 32	476 0 0
Thames	20	971 0 14	312 7 6
Te Aroha	172	10,611 2 13	1,702 14 0
Paeroa	81	4,982 0 3	1,350 7 6
Puhipuhi	31	3,314 0 0	242 1 0
Waihi	55	4,458 3 25	1,276 12 0
MARLBOROUGH—			
Havelock	4	55 0 0	16 18 9
Blenheim	32	1,564 0 0	173 13 0
NELSON—			
Collingwood	11	7,082 0 0	544 0 0
Reefton	169	5,190 0 30	1,000 17 3
Charleston	9	60 0 0	17 0 0
Lyell	19	389 0 0	109 5 0
Murchison	25	593 2 0	135 2 0
Westport	37	503 0 0	119 5 0
Motueka	3	194 0 0	47 4 7
WESTLAND—			
Kumara	2	327 3 11	173 14 6
Hokitika and Kanieri	80	925 0 0	201 3 9
Ahaura	250	6,000 0 0	1,500 0 0
Greymouth	123	17,090 0 0	1,115 0 0
Ross	17	194 0 0	55 12 6
Okarito	10	829 0 0	64 7 6
OTAGO AND SOUTHLAND—			
Cromwell	120	2,381 0 0	602 6 8
Wyndham	4	58 0 0	18 0 0
Waikaia	49	1,250 0 0	438 0 0
Black's	10	408 0 0	116 10 0
Clyde and Alexandra .. Roxburgh	107	4,686 0 0	1,327 12 6
Naseby	79	1,419 2 39	389 10 0
Arrow (Wakatipu Goldfield) ..	556	2,206 0 0	251 8 6
Queenstown	300	3,746 2 0	341 17 0
Riverton and Orepuki	58	2,387 1 9	244 7 0
Tuapeka	85	2,450 0 0	760 0 0
Middlemarch	1	52 0 0	6 10 0
Livingstone	18	98 0 7	29 12 6
Totals	2,654	90,644 2 23	15,159 0 0

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with "The Companies Act, 1908."

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid 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.	£	£	£	£
Bendigo Gold-mining Co. (Ltd.)	26/3/08	10,000	1,076	1,424	100,000	0 0 6	..	90	4	..	..	873	..	..
Bonanza Gold-mining Co. (No Liability)	22/10/06	10,000	1,650	500	100,000	0 0 5	..	119	..	..	..	1,663	..	..
Brilliant Block (Ltd.)	26/3/08	12,000	1,500	750	120,000	0 0 4	237	79	5	..	..	1,143	..	21
Champion Mines (Ltd.)	5/12/05	22,500	11,875	8,250	150,000	0 2 6	695	270	36	65	160	12,136	..	2,064
Comstock United Gold-mining Co. (Ltd.)	2/3/06	12,750	4,814	2,250	85,000	3/, 2/1, 11d.	..	44	5	..	..	3,290	..	..
Coromandel (Ltd.)	3/7/08	10,000	680	625	100,000	0 0 3	258	103	6	..	..	701	..	52
Dixon's Consolidated Gold-mining Co. (Ltd.)	22/6/08	4,500	950	500	100,000	1/ & 3d.	175	52	6	..	..	870	..	454
Dominion Gold-mining Co. (Ltd.)	3/3/08	10,000	1,167	750	100,000	0 0 4	..	102	4	..	..	1,022	..	4
Durbar Gold-mining Co. (Ltd.)	27/6/07	8,000	659	4,000	80,000	0 1 2	8	74	..	..	149	953	..	10
Golden Belt Gold-mining Co. (Ltd.)	12/8/02	36,065	23,699	5,250	360,645	Various	660	285	7	5,748	12,385	42,363	..	3,734
Golden Cross Gold-mining Co. (Ltd.)	12/11/06	9,350	3,006	..	93,500	0 0 9	..	150	8	62	143	2,998	..	80
Golden Pah Gold-mining Co. (Ltd.)	20/3/08	5,000	875	375	100,000	0 0 3	..	111	..	17	53	887	..	13
Halcyon Gold-mining Co. (Ltd.)	31/7/06	5,000	2,131	..	100,000	7d. & 1d.	..	118	3	..	..	2,098	..	..
Hardy's Mines (Ltd.)	23/7/07	6,811	4,734	1,551	54,491	2/6 & 2/3	90	72	8	..	..	4,013	..	132
Hauraki Freeholds (Ltd.)	25/1/99	20,000	1,275	18,725	100,000	0 3 0	..	..	..	1,373	4,291	5,840	..	52
Kapanga Gold-mining Co. (Ltd.)	12/12/08	10,780	503	1,250	107,800	1d. & 2d.	187	75	5	..	..	189	..	871
Kapowai Gold-mining Co. (Ltd.)	10/5/00	10,500	3,792	4,000	105,000	0 1 2	..	190	8	810	1,892	5,385	..	20
Karangahake Gold-mining Co. (Ltd.)	6/9/07	10,525	3,019	750	105,250	0 0 9	178	122	10	..	..	3,022	..	75
Kuranui Gold-mining Co. (Ltd.)	12/9/95	22,394	12,231	3,450	89,575	0 3 7	367	105	6	..	1,831	13,481	..	87
Lanigan's Antimony and Minerals (Ltd.)	20/8/07	5,725	1,857	..	114,505	Various	52	64	4	..	62	2,481	..	446
Last Shot Gold-mining Co. (Ltd.)	26/6/08	5,500	1,800	..	110,000	0 0 4	33	17	..	556	816	2,149	..	553
Magnet Gold-mining Co. (Ltd.)	24/4/06	5,500	2,363	1,000	100,000	0 0 9	367	85	4	..	..	2,560	..	50
Maharahara Copper-mines (Ltd.)	13/12/06	32,130	1,598	30,000	32,130	0 15 0	..	80	..	..	..	2,260	..	..
May Queen Extended Gold-mining Co. (Ltd.)	12/11/95	15,000	11,232	1,000	100,000	0 2 7	..	114	6	..	2,568	14,062	..	..
May Queen Gold-mining Co. (Ltd.)	15/5/07	61,500	9,187	25,392	246,000	0 2 10	271	487	30	1,857	5,260	18,261	..	661
Maoriland Gold-mining Co. (Ltd.)	15/6/07	10,600	4,019	..	93,168	0 1 7½	48	120	2	..	1,548	6,041	..	273
Mount Zeehan Gold-mining Co. (Ltd.)	—/2/07	11,100	3,704	3,600	74,000	0 3 0	64	94	6	..	..	3,682	..	83
Mountain King Gold-mining Co. (Ltd.)	15/2/08	12,000	2,000	2,000	120,000	0 1 6	..	90	7	..	..	1,629	..	50
Neavesville Mines (Ltd.)	7/10/08	12,000	934	750	120,000	0 0 3	191	91	6	..	..	718	..	..
New Dart Gold-mining Co. (Ltd.)	23/10/05	7,209	5,531	17	144,185	Various	..	124	..	21	57	5,282	..	150
New Maratoto Gold-mining Co. (Ltd.)	3/10/04	10,000	5,000	2,500	200,000	3d. & 9d.	..	25	1	5,039	1,313	8,309	..	46
New Monowai Gold and Silver Mines (Ltd.)	4/10/04	7,500	7,500	..	100,000	0 1 6	..	180	..	..	..	8,268	..	50
New Occidental Gold-mining Co. (No Liability)	7/9/05	6,300	1,889	..	63,000	10d., 4d.	..	41	2	..	..	1,992	..	..
New Plymouth Petroleum Co. (Ltd.)	17/8/06	7,500	6,848	2,500	2,000	5 0 0	5	114	2	..	..	7,249	..	458
New Sylvia Gold-mining Co. (Ltd.)	24/10/05	15,000	5,581	1,208	120,000	Various	211	163	6	..	..	5,702	..	26
New Waitekauri Gold-mining Co. (Ltd.)	12/9/06	12,500	6,369	1,500	100,000	Various	256	142	9	657	897	7,079	..	305
Ngatiawa Gold-mining Co. (Ltd.)	25/4/07	5,747	5,444	..	114,942	Various	..	99	1	..	..	5,573	..	116
Old Alburnia Gold-mining Co. (Ltd.)	25/7/03	15,697	12,575	..	156,969	Various	383	198	20	..	802	19,371	..	290
Old Hauraki Gold-mines (Ltd.)	3/8/07	21,000	6,158	..	210,000	7d. & 8d.	842	271	10	265	793	6,513	..	637
Phœnix Gold-mining Co. (Ltd.)	12/3/08	9,670	2,501	1,500	93,700	0 0 9	..	102	9	..	..	2,345	..	59
Pride of Waihi Gold-mining Co. (Ltd.)	15/1/01	50,000	2,500	1,250	100,000	9d. & 3d.	..	238	2	..	..	2,405	..	20
Ready Bullion Gold-mining Co. (Ltd.)	12/2/08	11,100	950	1,750	111,000	0 0 3	..	48	4	..	..	849	..	..
Reliance Gold-mining Co. (Ltd.)	20/12/06	5,500	2,332	..	110,000	6d. & 4d.	418	42	2	77	210	2,247	..	255
Royal Oak Gold-mining Co. (Ltd.)	22/3/04	12,500	..	6,875	100,000	Various	..	42	6	3,474	9,586	11,769	..	65
Saxon Gold-mining Co. (Ltd.)	2/12/07	17,448	1,219	4,985	99,700	3d. & 2d.	27	128	4	..	..	1,020	..	..
Silver Hill Gold-mining Co. (Ltd.)	18/2/08	16,000	2,500	1,500	160,000	0 0 6	..	161	..	..	..	2,452	..	..
Southern Queen Gold-mining Co. (Ltd.)	8/2/06	4,250	2,423	..	85,000	8½d. & 9½d.	140	113	..	398	1,087	3,503	..	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with "The Companies Act, 1908"—*continued*.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
AUCKLAND DISTRICT—*continued*.														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
South Kapanga Gold-mining Co. (Ltd.) ..	5/12/06	6,800	3,025	1,400	136,000	0 0 8	92	44	..	..	3	2,728	..	8
Sunbeam Gold and Silver-mines (Ltd.)	30/6/03	15,000	8,854	2,750	200,000	0 1 6	..	107	..	..	1,007	10,313	..	130
Taihoa Gold-mining Co. (Ltd.)	11/10/06	2,500	2,483	..	100,000	0 0 6	17	58	6	..	..	2,540	..	60
Tairua Broken Hills Gold-mining Co. (Ltd.) ..	12/7/99	14,550	14,550	..	145,550	0 2 0	..	244	66	49,558	88,827	83,759	24,710	1,147
Tairua Conqueror (Ltd.)	23/6/08	12,000	1,142	750	120,000	0 0 4	358	114	5	..	..	1,117	..	..
Tairua Consols Gold-mining Co. (No. Liability)	5/12/07	10,000	993	750	100,000	0 0 4	174	32	..	..	..	967	..	..
Tairua Dawn (Ltd.)	24/7/08	6,000	851	575	60,000	0 0 6	74	86	3	..	..	536	..	..
Tairua Extended Gold-mining Co. (Ltd.) ..	20/9/07	3,575	1,783	..	71,500	0 0 6	..	72	6	..	..	1,737	..	70
Tairua Golden Hills Gold-mining Co. (Ltd.) ..	7/1/08	15,000	5,625	1,875	150,000	0 1 0	..	47	30	..	..	5,215	..	75
Tairua Monarch (Ltd.)	29/9/08	12,000	973	750	120,000	0 0 3	153	99	6	..	..	592	..	32
Tairua Triumph Gold-mining Co. (Ltd.) ..	1/2/07	12,765	3,787	1,000	127,650	0 0 6	..	59	9	22	59	3,266	..	27
Tairua Reefs Gold-mining Co. (Ltd.)	21/10/08	14,000	1,250	1,000	140,000	0 0 3	..	113	4	..	..	360	..	..
Tangiaro Gold-mining Co. (Ltd.)	19/10/07	11,000	2,291	..	110,000	10d. & 2/6	292	155	6	..	..	2,236	..	70
Te Puke Gold Reefs (Ltd.)	4/5/98	12,865	12,865	..	101,478	..	..	102	..	..	..	12,685	4,545	42
Thames Foreshore Dredging Co. (Ltd.) ..	16/5/08	5,000	2,350	..	10,000	5/ & 3/	25	9	6	22	46	2,093	..	797
Thames Gold-mining Co. (Ltd.)	16/12/05	15,000	10,000	..	150,000	0 1 4	..	205	..	60	177	10,051	..	52
Tokatea Gold-mining Co. (Ltd.)	28/1/08	5,000	1,091	1,000	100,000	0 0 5	159	58	5	..	45	1,122	..	..
Trafalgar Gold-mining Co. (Ltd.)	20/2/06	7,500	1,758	2,500	100,000	0 0 5½	203	40	..	4	10	1,849	..	96
Waihi Beach Gold-mining Co. (No Liability) ..	7/4/05	14,000	12,816	..	140,000	0 1 10	..	205	2	..	..	12,773	..	149
Waihi Consolidated (Ltd.)	23/3/00	25,000	5,625	15,000	100,000	0 4 1½	..	150	1	..	..	13,330	..	30
Waihi Extended Gold-mining Co. (Ltd.) ..	12/8/95	149,967	31,708	5,498	149,967	0 4 1½	1,223	440	14	..	..	32,502	..	308
Waihi Gladstone Gold-mines (Ltd.)	29/5/06	25,000	1,875	12,500	100,000	0 0 4½	..	24	..	..	..	1,722	..	1
Waiotahi Gold-mining Co. (Ltd.)	28/7/71	18,000	15,000	..	240,000	0 1 3	..	597	32	..	655,226	247,414	397,800	55
Waitangi Consolidated Gold-mining Co. (No Liability)	23/10/08	85,000	625	..	85,000	0 0 2	84	143	10	..	..	322	..	..
Watchman Gold-mining Co. (Ltd.)	11/12/06	7,500	2,247	250	100,000	0 0 6	3	89	5	6	17	2,138	..	15
Whangaroa Amalgamated Copper Co. (Ltd.) ..	10/1/07	12,500	3,651	5,000	50,000	0 2 6	..	129	2	..	..	9,293	..	17
Totals	..	1,159,673	344,868	196,325	8,338,705	..	9,020	9,055	482	70,091	791,320	721,358	427,055	15,443
NELSON DISTRICT (INCLUDING WEST COAST).														
Addison's Long Tunnel Gold-mining Co. (Ltd.)	24/9/98	1,857	1,747	83	1,857	Various	27	24	4	2,325	9,168	10,137	828	165
Blackwater River Gold-dredging Co. (Ltd.) ..	27/4/00	9,475	5,892	3,000	9,475	0 18 0	..	92	11	8,407	33,017	30,166	7,813	..
Britannia Gold-mining Co. (Ltd.)	3/3/99	10,000	2,782	7,160	20,000	0 8 0¾	22	15	3	4,367	16,491	15,905	3,342	76
Dominion Gold and Ironsand Co. (Ltd.) ..	19/4/00	100,000	4	65,108	100,000	1 0 0	..	104	10	..	..	1,793	..	2,842
Golden Arch Gold-mining Co. (Ltd.)	24/9/08	3,625	862	2,763	14,500	0 5 0	..	28	8	..	..	607	..	530
Keep-it-Dark Quartz-mining Co. (Ltd.) ..	2/3/74	20,000	6,208	10,000	20,000	0 16 2½	..	45	60	111,565	429,171	298,879	158,667	50
Minerva Gold-mining Co. (Ltd.)	24/2/90	12,000	6,856	400	17,248	0 6 4½	..	8	1	821	2,947	11,272	..	49
Mont D'Or Gold-mining and Water-race Co. (Ltd.)	25/7/82	12,000	10,800	..	12,000	0 18 0	..	32	14	32,849	125,931	93,414	45,600	..
Montgomery Sluicing Co. (Ltd.)	3/1/06	3,000	3,000	..	3,000	1 0 0	..	44	6	528	2,105	4,866	..	1,853
Nelson Creek Gold-dredging Co. (Ltd.) ..	1/7/99	10,929	8,429	2,500	10,929	1 0 0	..	93	9	14,668	57,468	54,792	23,375	796
New Ulster Quartz-mining Co. (Ltd.)	11/3/08	5,365	827	1,250	10,730	5/ & 3/	33	43	9	99	370	1,068	..	181
No Town Creek Gold-dredging Co. (Ltd.) ..	9/3/00	8,500	8,500	5,500	12,000	1 0 0	..	127	10	14,663	56,340	37,298	23,400	160
Ross Goldfields (Limited)	18/9/07	35,000	21,000	35,000	70,000	0 12 0	704	79	30	..	..	29,209	..	1,367
Worksop Gold-dredging Co. (Ltd.)	20/3/07	4,500	4,500	1,500	6,000	1 0 0	..	73	11	1,755	6,758	8,198	2,700	144
Totals	..	236,251	81,407	132,264	307,739	..	786	807	186	192,047	739,766	597,604	265,725	8,213

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with "The Companies Act, 1908"—*continued.*

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										Quantity.	Value.			
OTAGO DISTRICT (INCLUDING SOUTHLAND).														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Alexandra Eureka Gold-dredging Co. (Ltd.) ..	14/11/99	12,000	..	12,000	12,000	1 0 0	..	54	9	11,635	44,988	26,358	18,447	268
Alexandra Lead Gold-dredging Co. (Ltd.) ..	26/7/99	17,521	14,521	3,000	17,521	1 0 0	..	188	10	8,906	34,386	38,072	14,032	3,286
Allen's Hydraulic Sluicing Co. (Ltd.)	26/6/08	2,000	785	..	2,000	0 12 0	5	17	7	..	..	911	..	299
Alpine Consols Dredging Co. (Ltd.)	18/10/07	1,600	1,600	3,400	5,000	1 0 0	..	118	8	77	300	839	..	898
Arrow River Hydraulic Mining Co. (Ltd.) ..	15/1/07	2,007	1,007	1,000	2,007	1 0 0	..	18	10	1,036	4,023	2,827	1,505	130
Bakery Flat Sluicing Co. (Ltd.)	10/9/96	2,500	2,013	..	2,500	0 18 6	..	28	..	3,425	12,946	13,646	1,063	159
Barewood Gold-mining Co. (Ltd.)	24/12/03	7,900	7,900	..	7,900	1 0 0	..	52	21	6,369	24,748	22,648	2,800	163
Ben Nevis Sluicing Co. (Ltd.)	13/3/07	2,750	2,750	..	2,750	1 0 0	..	8	10	721	2,786	2,682	..	139
Central Charlton Dredging Co. (Ltd.)	8/12/99	5,300	5,300	1,700	7,000	1 0 0	..	100	8	7,862	30,991	27,546	8,400	..
Charlton Creek Gold-dredging Co. (Ltd.) ..	5/5/99	4,000	4,000	1,000	5,000	1 0 0	..	70	9	7,622	29,906	31,188	5,974	155
Chicago Gold-dredging Co. (Ltd.)	1/11/99	2,500	6,750	2,500	5,000	1 0 0	..	60	7	8,306	32,262	25,798	4,457	112
Come-in-time Mining Co. (Ltd.)	6/6/08	1,500	1,025	500	2,000	0 18 0	475	27	6	2	8	885	..	150
Craig's Freehold Gold-dredging Co. (Ltd.) ..	20/8/00	6,342	4,770	2,500	8,842	0 16 0	323	116	..	12,810	..	5,250	..	108
Criffel Lead Sluicing Co. (Ltd.)	30/9/05	8,000	6,500	1,500	8,000	1 0 0	..	74	2	171	668	8,164	..	717
Deep Stream Gold-mining Co. (Ltd.)	19/11/06	2,500	500	2,000	2,500	1 0 0	..	7	6	365	1,406	2,613	125	20
Delabaybay Gold-dredging Co. (Ltd.)	2/10/08	7,600	638	2,500	7,600	0 2 6	1,275	11	1	..	..	507	..	..
Earnscleugh Gold-dredging Co. (Ltd.)	15/7/01	8	8	10,992	11,000	1 0 0	..	14	40	29,674	114,624	94,187	9,625	446
Electric Gold-dredging Co. (Ltd.)	2/9/99	26,000	..	26,000	26,000	1 0 0	..	270	20	47,615	185,148	64,208	122,843	238
Enterprise Gold-dredging Co. (Ltd.)	24/8/91	7,000	3,500	3,500	7,000	1 0 0	..	134	8	20,748	80,366	55,574	26,885	124
Gabriel's Gully Sluicing Co. (Ltd.)	2/5/07	600	180	..	600	0 6 0	..	6	5	565	2,172	1,752	480	90
Golden Bed Dredging Co. (Ltd.)	5/5/99	11,000	10,694	2,000	12,794	1 0 0	..	171	10	10,978	42,454	35,405	8,906	..
Golden Crescent Sluicing Co. (Ltd.)	26/11/98	3,500	3,500	..	3,500	1 0 0	..	25	8	4,989	19,372	14,731	7,263	49
Golden Gate Dredging Co. (Ltd.)	13/3/95	2,500	2,500	..	2,500	1 0 0	..	56	7	14,583	56,171	33,659	24,500	21
Golden Gem Dredging Co. (Ltd.)	30/10/07	1,500	1,200	300	1,500	1 0 0	..	16	8	601	2,326	2,701	..	665
Golden Treasure Dredging Co. (Ltd.)	11/7/93	1,500	1,384	1,500	3,000	1 0 0	..	43	9	17,035	65,635	44,708	23,439	418
Golden Vein Gold-dredging Co. (Ltd.) ..	4/12/07	1,000	1,000	..	1,000	1 0 0	..	17	7	240	926	2,124	..	554
Hartley and Riley Beach Dredging Co. (Ltd.) ..	14/7/97	6,500	6,300	200	6,500	1 0 0	..	324	8	29,783	115,229	38,902	81,250	105
Havelock Sluicing Co. (Ltd.)	3/3/08	4,000	3,400	600	4,000	1 0 0	..	9	7	14	55	3,445	..	2,700
Hit-or-Miss Water-race Co. (Reg.), Mount Ida ..	19/6/67	6,020	..	..	301	20 0 0	..	3	..	..	..	..	..	..
Hydraulic Motor Dredging Co. (Ltd.)	–/2/04	300	..	..	300	1 0 0	..	4	..	..	..	1,311	..	437
Island Block Gold-dredging and Sluicing Co. (Ltd.)	26/2/00	24,030	12,030	12,000	25,000	1 0 0	..	104	..	7,207	28,110	32,815	2,403	49
Jutland Hydraulic Sluicing Co. (No Liability) ..	28/6/01	5,000	4,100	900	5,000	1 0 0	..	8	7	4,276	16,436	17,474	2,750	286
Kia Ora Victoria Gold-dredging Co. (Ltd.) ..	10/8/01	9,100	5,915	..	9,100	0 13 0	..	37	16	16,719	67,815	49,296	23,888	..
King Dredging Co. (Ltd.)	16/7/08	1,025	913	1,000	2,025	1 0 0	112	47	9	6	23	1,227	..	387
Koputai Gold-dredging Co. (Ltd.)	9/1/06	3,200	3,200	300	3,500	1 0 0	..	51	7	3,686	14,519	12,215	14,813	..
Kura Gold-dredging Co. (Ltd.)	24/8/05	4,800	4,800	..	4,800	1 0 0	..	41	7	1,728	6,526	12,997	240	870
Lady Roxburgh Gold-dredging Co. (Ltd.) ..	3/3/00	9,000	4,885	2,000	11,000	0 14 0	..	105	8	5,259	20,207	22,567	3,593	62
Ladysmith Gold-dredging Co. (Ltd.)	19/4/00	12,000	3,964	3,000	14,500	0 10 0	..	75	9	5,792	22,326	20,222	6,451	306
Lammermoor Mining Co. (Ltd.)	6/7/08	3,600	525	1,000	4,600	£1 & 5/	375	16	18	..	..	532	..	226
Lee and Party, Waikaka (Ltd.)	14/7/06	5,180	3,680	1,500	5,180	1 0 0	..	14	8	1,709	6,879	4,157	2,072	69
Lower Nevis Dredging Co. (Ltd.)	29/9/06	600	600	600	1,200	1 0 0	..	7	7	917	3,530	4,194	..	268
Magnum Bonum Gold-dredging Co. (Ltd.) ..	1/3/06	2,500	2,500	..	2,500	1 0 0	..	10	8	2,310	11,287	9,017	3,187	123
Main Chance Co. (Ltd.)	28/3/06	1,200	1,200	..	1,200	1 0 0	..	6	8	2,241	8,956	8,279	1,920	19
Manuherikia Gold-dredging Co. (Ltd.)	1/8/99	12,000	6,000	6,000	12,000	1 0 0	..	163	9	14,713	56,281	30,956	30,588	110
Manuka Mining Co. (Ltd.)	26/5/04	200	200	..	200	1 0 0	..	7	3	421	1,636	2,214	120	50
Masterton Gold-dredging Co. (Ltd.)	6/1/04	5,000	3,500	1,500	5,000	1 0 0	..	80	8	10,246	40,375	18,412	25,000	..

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										Quantity.	Value.			
OTAGO DISTRICT (INCLUDING SOUTHLAND)—*continued.*														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Matakanui Gold-mining Co. (Ltd.)	22/1/02	7,000	7,000	7,000	7,000	1 0 0	..	8	7	2,998	11,475	11,158	2,099	..
Molyneux Hydraulic Dredging Co. (Ltd.)	25/5/00	5,896	5,896	..	5,896	1 0 0	..	85	7	10,695	40,160	45,962	6,781	372
Mount Morgan Sluicing Co. (Ltd.)	2/7/02	800	800	2,000	2,800	1 0 0	..	7	3	1,112	4,277	5,746	..	70
Muddy Creek Co. (Ltd.)	2/11/01	1,120	..	725	1,845	1 0 0	..	23	10	8,445	29,612	23,794	8,025	365
Muddy Terrace Sluicing Co. (Ltd.)	4/10/06	14,400	12,240	5,600	17,350	1 0 0	2,160	94	60	..	..	19,796	..	8,000
Mystery Flat Gold-dredging Co. (Ltd.)	16/7/00	5,512	4,512	1,000	5,512	1 0 0	..	102	8	11,129	43,933	27,516	20,119	413
Naseby Dredging and Hydraulic Sluicing Co. (Ltd.)	16/10/97	5,000	2,288	2,000	5,000	0 15 3	..	24	4	3,724	14,339	15,201	3,125	57
New Clyde Dredging Co. (Ltd.)	5/12/07	1,465	1,209	1,465	2,930	0 16 6	..	38	1	..	..	1,205	..	46
New Golden Run Dredging Co. (Ltd.)	21/10/07	2,000	2,000	..	2,000	1 0 0	..	3	8	66	250	1,494	..	1,495
New Perseverance Gold-dredging Co. (Ltd.)	21/4/04	17,000	2,996	14,000	17,000	1 0 0	4	179	9	7,355	28,520	35,487	3,500	405
New Roxburgh Jubilee Dredging Co. (Ltd.)	22/1/02	2,500	2,489	5,000	7,500	1 0 0	..	173	9	9,288	36,123	21,505	17,241	166
New Skipper's Sluicing Co. (Ltd.)	16/9/02	4,831	2,244	861	4,831	1 0 0	..	28	6	926	3,538	7,364	..	319
New Trafalgar Dredging Co. (Ltd.)	13/4/04	6,500	2,500	2,000	6,000	1 0 0	..	98	9	4,118	16,200	19,084	3,250	207
Nokomai Hydraulic Sluicing Co. (Ltd.)	26/3/08	24,000	7,000	17,000	24,000	1 0 0	..	64	48	20,810	78,697	62,095	23,484	79
Olrig Dredging Co. (Ltd.)	13/3/99	9,955	8,955	1,000	9,955	1 0 0	..	70	8	6,415	24,919	27,424	4,173	626
Otago Gold-dredging Co. (Ltd.)	20/5/95	5,000	2,000	3,000	5,000	1 0 0	..	59	17	18,525	71,607	62,295	16,000	752
Ourawera Gold-mining Co. (Ltd.)	23/5/95	3,000	3,000	..	3,000	1 0 0	..	17	9	9,690	38,564	30,067	12,415	..
Paracale Gold-dredging Co. (Ltd.)	7/9/06	6,233	6,233	1,200	6,233	1 0 0	..	29	40	2,959	..	..	..	..
Pahia Sluicing Co. (Ltd.)	6/9/07	2,000	1,200	800	40	50 0 0	..	16	6	..	339	798	..	758
Paterson's Freehold Gold-mining Co. (Ltd.)	15/7/99	8,000	8,000	4,000	12,000	1 0 0	..	32	16	12,770	51,080	59,360	13,200	75
Phœnix Water-race Co. (Ltd.), (Reg.)	12/10/67	1,500	1,500	..	1,000	1 10 0	..	18	1	..	..	1,085	7,893	5
Punt Gold-dredging Co. (Ltd.)	10/10/04	3,000	1,750	1,250	3,000	1 0 0	..	30	9	3,354	12,982	16,653	..	2,025
Quartz Reef Point Sluicing Co. (Ltd.)	20/7/08	1,200	561	800	1,100	0 12 6	126	23	..	..	..	377	..	711
Riley's Revival Gold-dredging Co. (Ltd.)	27/4/07	2,350	2,350	650	3,000	1 0 0	..	29	8	933	3,596	6,029	..	625
Rise-and-Shine Gold-dredging Co. (Ltd.)	24/2/00	10,000	9,746	2,000	12,000	1 0 0	254	167	19	19,101	73,978	67,170	15,600	759
Rising Sun Gold-dredging Co. (Ltd.)	16/2/01	8,000	5,500	2,500	8,000	1 0 0	..	81	10	8,692	33,564	27,915	7,600	204
Round Hill Mining Co. (Ltd.)	30/7/02	28,245	6,753	21,491	5,649	5 0 0	..	180	38	28,963	115,747	121,320	3,248	400
Roxburgh Amalgamated Mining and Sluicing Co. (Ltd.)	2/3/99	29.153	13,121	15,000	29,152	0 18 6	..	173	14	25,941	96,985	80,729	29,515	193
Sailor's Bend Dredging Co. (Ltd.)	1/9/99	8,000	6,500	1,500	8,000	1 0 0	..	170	9	4,150	16,042	19,529	3,587	12
Sailor's Gully (Waitahuna) Gold-mining Co. (Ltd.)	3/6/96	2,000	200	1,800	2,000	1 0 0	..	11	4	2,902	10,919	8,205	3,150	41
Sandy Point Gold-dredging Co. (Ltd.)	20/2/03	8,000	8,000	..	8,000	1 0 0	..	44	11	7,962	31,083	33,528	7,200	1,550
Scandinavian Gold-mining Co. (Ltd.)	9/10/06	4,558	1,683	751	60,767	0 0 10	38	56	5	..	16	1,698	..	30
Scandinavian Water-race Co. (Ltd.)	10/12/07	7	3	9,750	9,757	1 0 0	..	18	22	984	3,847	4,504	..	6,500
Shetland Consolidated Sluicing Co. (Ltd.)	16/8/07	2,400	1,760	1,200	3,600	0 18 0	400	13	5	53	209	2,026	..	54
Shotover Consolidated Mining Co. (Ltd.)	13/7/06	3,000	2,701	8,000	11,000	£1 & 18s.	..	63	..	486	1,981	5,183	..	56
Shotover Gold-mining Co. (Ltd.)	24/6/08	10,000	1,155	750	100,000	6d. & 4d.	12	95	5	..	..	921	..	31
Stafford Gold-dredging Co. (Ltd.)	17/5/05	289	289	1,734	2,023	1 0 0	..	7	7	3,232	12,647	10,824	708	227
Stanley Paracale Gold-dredging Co. (Ltd.)	4/8/08	6,000	3,193	3,000	8,850	Various	225	108	2	..	..	2,926	..	1,605
Taieri Falls Sluicing and Electric-power Transmission Co. (Ltd.)	9/10/06	4,000	1,625	2,000	4,060	1 0 0	55	51	6	..	..	2,624	..	1,015
Tallaburn Hydraulic Sluicing Co. (Ltd.)	3/12/04	1,200	1,200	..	1,200	100 0 0	..	7	6	948	3,651	4,427	1,380	..
Tamaiti Gold-mining Co. (Ltd.)	17/8/05	3,000	2,250	250	3,000	1 0 0	..	19	4	685	2,674	5,421	250	630

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with "The Companies Act, 1908"—*continued.*

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										Quantity.	Value.			
OTAGO DISTRICT (INCLUDING SOUTHLAND)—*continued.*														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Tinker's Gold mining Co. (Ltd.)	10/6/02	15,000	15,000	15,000	15,000	1 0 0	..	12	8	4,407	16,955	18,811	7,688	111
Undaunted Gold-mining Co. (Ltd.)	1/3/98	15,000	15,000	..	1,500	10 0 0	..	35	8	9,467	37,020	22,861	13,125	97
United M. and E. Water-race Co. (Reg.) ..	23/4/72	7,600	7,600	..	152	50 0 0	..	7	8	14,489	55,850	63,111	3,078	625
Victoria Gold-mining Co. (No Liability) ..	8/12/06	22,166	1,385	..	110,829	0 0 3	..	228	6	745	2,082	3,361	..	18
Vinegar Hill Hydraulic Sluicing Co. (Ltd.) ..	23/9/00	6,000	6,000	..	6,000	1 0 0	..	11	6	..	8,975	8,383	1,050	..
Waikaka Gold-dredging Co. (Ltd.)	20/10/03	3,500	1,750	1,750	3,500	1 0 0	..	46	9	6,437	25,471	18,153	10,500	308
Waikaka Queen Gold-dredging Co. (Ltd.) ..	6/7/99	6,560	6,560	1,050	6,560	1 0 0	..	100	8	6,779	27,242	28,682	4,628	152
Waikaka Syndicate (Ltd.)	20/12/01	7,000	3,000	4,000	7,000	1 0 0	..	22	16	11,188	44,618	34,251	13,000	..
Waikaka United Gold-dredging Co. (Ltd.) ..	11/2/99	4,700	4,700	6,500	11,200	1 0 0	..	35	16	19,409	76,664	81,219	33,600	189
Waipori Consolidated Gold-dredges (No Liability)	22/3/99	2,500	2,275	225	2,500	1 0 0	..	7	7	4,989	19,201	18,899	2,813	66
Waitahuna Dredging Co. (Ltd.)	22/2/02	1,380	1,380	..	1,380	1 0 0	..	22	..	605	2,330	4,118	1,622	..
Waitahuna Hydraulic Sluicing Co. (Ltd.) ..	10/11/04	2,000	1,200	..	2,000	0 12 0	..	8	6	2,346	9,156	7,268	3,150	50
Welcome Quartz-mining Co. (Ltd.)	18/8/08	4,000	..	2,500	6,500	0 3 0	70	29	4	..	..	467	..	70
Totals	..	621,403	361,989	282,594	889,591	..	5,909	5,885	955	644,134	2,447,930	2,059,244	786,816	47,840
Grand totals	..	2,017,327	788,264	611,183	9,536,035	..	15,715	15,747	1,523	906,272	3,979,016	3,378,206	1,479,596	71,496

STATEMENTS of AFFAIRS of MINING COMPANIES, published in accordance with "The Companies Act, 1908."

Foreign Companies.

Name of Company.	Date of Registration of Office in Dominion.	Subscribed Capital.	Amount of Capital actually paid up in Dominion.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares on Dominion Register.	Amount paid up per share: Dominion Register.	Arrears of Calls: Dominion Register.	Number of Shareholders on Dominion Register.	Number of Men employed in Dominion.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid in Dominion.	Amount of Debts owing by Company.
										Quantity.	Value.			
AUCKLAND DISTRICT.														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
New Zealand Crown Mines Co. (Ltd.)	27/6/96	200,000	..	100,000	94,479	1 0 0	..	291	131	284,787	680,672	627,268	12,242	6,148
OTAGO DISTRICT.														
Bluespur and Gabriel's Gully Consolidated Gold-mining Co. (Ltd.)	1/2/88	91,266	..	48,268	130,000	..	..	..	30	48,647	185,352	122,748	..	170
Totals	..	291,266	..	148,268	224,479	..	..	291	161	333,434	866,024	750,016	12,242	6,318

ANNEXURE F.

EXAMINATIONS UNDER "THE MINING ACT, 1908."

QUESTIONS ASKED AT THE 1909 EXAMINATION FOR FIRST AND SECOND CLASS CERTIFICATES OF COMPETENCY AS MINE-MANAGERS.

SUBJECT A.—*The Laying-out and Construction of Shafts, Chambers, Main Drives, Adits, Rises, Stopes, &c.*

1. Describe fully the work required to be done before commencing to sink a shaft.

2. A shaft is to be timbered with planking: the length of the shaft in the clear is 11 ft.; the shaft is to be divided into three compartments. Give (*a*) the size (in the clear) of each compartment, (*b*) the width and thickness of planking; also, show by sketch how you would fit the end and side planks so that battens or pegs would not be required, and give the width and thickness of the centre pieces. The width of the shaft is 4 ft.

3. A winze is sunk on a lode to a depth of 300 ft. on an underlie of 25° to the east; a perpendicular shaft is to be sunk to touch the bottom of the winze. Give the distance from the centre of winze at the surface to the centre of the shaft, and also the depth of the shaft. The shaft is at a right angle to the course of the lode, and the shaft and winze are on the same level at the surface.

4. A lode outcrops on the top of a spur having an underlie of 25° from the perpendicular, to the west, and an adit level is to be constructed from the eastern side of the spur; the angle of depression from the outcrop on this side is 60°. Show by calculation the length of adit required to cut the lode at a depth of 200 ft. below the outcrop.

5. Describe fully how you would sink a shaft through wet ground until you touched country rock impervious to water, and the steps you would then take to make sure that no water followed down the shaft as the sinking proceeded.

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. Give height, width, and length of a chamber where the output is 100 tons per shift of eight hours, sizes and description of timbers, and distance of sets apart (centre to centre)—(*a*) in hard rock; (*b*) in loose rock.

2. The crosscut from the chamber to the lode requires timbering: give sizes of timbers and distance of sets apart, also dimensions of sets in the clear, for a single line of rails.

3. The walls along the lode are heavy, and the material swells and crushes the usual timbering: give sketch showing the best method of fitting the sets, sizes and description of timbers, number of pieces in the set, distance of sets apart (centre to centre); also, show side and top lathing.

4. The width of the lode in the stopes is 60 ft.; the usual style of timbering collapses: show by sketch and explain fully how you would timber the stopes to insure perfect safety; state when you would fill in, and show by sketch your method of doing it.

5. Give the position and distance apart of passes on the above lode, and state whether single or double, or the proportion of each.

6. Give sketch showing how you would timber the passes (*a*) with logs, (*b*) with slabs. Figure sizes on sketch.

7. Give the breaking-strain of a black-birch cap-piece: the length between the legs is 4 ft., and the diameter of the cap is 20 in.

8. If you were constructing a level on alluvial ground through black sand containing water, describe fully how you would keep the material from running, and the precautions necessary to keep the level secure.

SUBJECT C.—*Ventilation of Mines and Composition of Gases.*

1. What gases are met with in metalliferous mines? Give their symbols, specific gravities, and characteristic effects on the human system. Explain how each gas may be detected in the mine.

2. Explain the reason why Atkinson's formula is $p = \frac{ksv^2}{a}$, where

p = pressure per square foot;
a = square feet of sectional area;
s = the area of the rubbing-surface exposed to the air;
v = the velocity of the air in thousands of feet per minute (being the unit of velocity);
k = the coefficient of friction in the same terms or unit as p is taken in.

3. How would you ventilate (*a*) a drive 8 ft. wide and 6 ft. high, rising 1 in 4, and making CH_4 freely; (*b*) the face of an underlie of 1 in 4 giving off a large quantity of CO_2?

4. Describe, and illustrate by diagram, the action of a Roots' blower, and state under what conditions its employment is advisable.

5. In the case of two ventilating-shafts, each 600 ft. deep, the temperature in the downcast is 60° Fah. and in the upcast shaft 180° Fah., and the barometer reads 30 in.: state the height of motive column in feet.

6. What is the horse-power, in the air, of a fan running 110 revolutions per minute and producing 50,000 cubic feet of air per minute with a water-gauge of 2 in.? If the quantity of air is increased to 70,000 cubic feet per minute, what will the water-gauge then be; also the horse-power in the air, and the number of revolutions of the fan?

SUBJECT D.—*Tapping Water in Mines, and Mode of constructing Dams in Underground Workings to keep the Water back.*

1. At 450 ft. from the collar of shaft a crosscut 520 ft. in length connects with old workings full of water. We are now to open up the old workings by driving from the present bottom of the shaft, which is 1,100 ft. below the collar of shaft, and 130 ft. below the old workings. The length of tunnel to connect is 640 ft., and 130 ft. of uprise to break through. What precautions would you take before breaking through, and what risks, in your opinion, have you to provide against? Describe fully.

2. Show, by sketch, how you would construct a breastwork dam to dam back water in a crosscut; the dimensions of the crosscut are 7 ft. by 6 ft., and the water is to rise to a height of 300 ft. above the centre of the breastwork. Describe fully the whole process and the materials you would use.

3. Show by calculation the pressure in pounds on the above breastwork.

4. If you only had to dam the water back to a height of 4 ft., state the materials you would use and your mode of construction.

SUBJECT E.—*Blasting, and the Use of Explosives.*

1. The diameter of a breasthole in a level is 2 in., the depth of the hole is 5 ft.: what weight of blasting-gelatine would you use for the charge?

2. Give the formulæ for the weight of explosives in small blasts.

3. A borehole is 3 in. in diameter, and filled with gelignite to a depth of 8 in.: what is the weight of the charge?

4. In charging a hole bored at an angle of 45° above the horizontal the plugs sometimes slip back with the tamping-bar: what do you do in this case?

5. During frosty weather how do you prepare the charge if you are using nitro-glycerine compounds?

6. In selecting a site for a magazine for explosives, what contingencies would you provide for? Would you keep the explosives, fuse, and caps in the same building? If not, give your reasons.

7. Give a list of the appliances required for blasting by electricity.

8. How would you test low-tension fuses, and how would you know that the fuse was good?

9. In blasting by electricity you have a missed shot: describe fully the steps you would now take.

SUBJECT F.—*A Knowledge of Arithmetic and the Method of keeping Mining Accounts.*

1. The area of a circle is 24052·875 square feet: what is (*a*) the diameter, and (*b*) the circumference, in feet.

2. A bar of gold as produced from a mine contained 976 oz., which, after melting at the Mint, was worth 720 oz. of fine gold: what is the money value per ounce of the gold as produced from the mine?

3. Given the following assays and measurements of a gold-bearing reef taken 10 ft. apart, what s the correct average width and cash value of the total lengths sampled?—

Width,	12 in.;	assay per ton,	20 dwt. fine.
"	18 in.;	"	26 dwt. "
"	15 in.;	"	20 dwt. "
"	18 in.;	"	25 dwt. "
"	10 in.;	"	18 dwt. "
"	3 in.;	"	6 dwt. "

4. The monthly expenditure at an important metalliferous mine is divided under seven headings: state what these would be, and specify the chief items chargeable to each.

SUBJECT H.—*Pumping Appliances and the Drainage of Mines.*

1. To deal permanently with an inflow of 2,000 gallons of water per minute from a depth of 400 ft., describe the plants you would install under the following conditions: (*a*) At a metalliferous mine where steam-power is used; (*b*) at a deep-lead alluvial mine where the water contains some sand and the supply is irregular: the pump to be electrically driven by a motor of 85 per cent. efficiency.

State the horse-power necessary of the engine in case (*a*), and of the motor in case (*b*); also the principal dimensions of the pumps.

What provisions should be made in case (*a*) for breakdown, and in case (*b*) to prevent inundation of the pump and motor?

2. Describe, and illustrate by diagram, the action of a three-throw plunger pump. State (*a*) what is the usual piston-speed, (*b*) revolutions per minute. Is it a single- or double-acting pump?

3. What is meant by the brake horse-power of an engine? How is it ascertained, and by what formula calculated?

4. What would be approximately the loss of efficiency of a pumping plant for every additional set of multiplying or reduction gear wheels?

SUBJECT I.—*The Haulage in Shafts and on Underground Planes; also the Strength of Haulage Ropes and Chains.*

1. How would you test a safety cage?

2. When two coupled drums are employed to wind from two compartments, what provision would you make that the actual position of each cage should be known to the driver at all times?

3. Describe, and illustrate by sketch, the winding-engine you would recommend for raising 500 tons per day from a mine 1,200 ft. deep. What steam-pressure would you use, and what type of valve?

Briefly discuss the advantages, if any, of using in the above case—

(*a*) Compound engines,
(*b*) Expansion valves,
(*c*) Some form of "trip" gear in lieu of slide valves,
(*d*) Friction-clutches.

4. What size of plough-steel wire rope would you recommend to lift 6 tons from 400 yards (live load)?

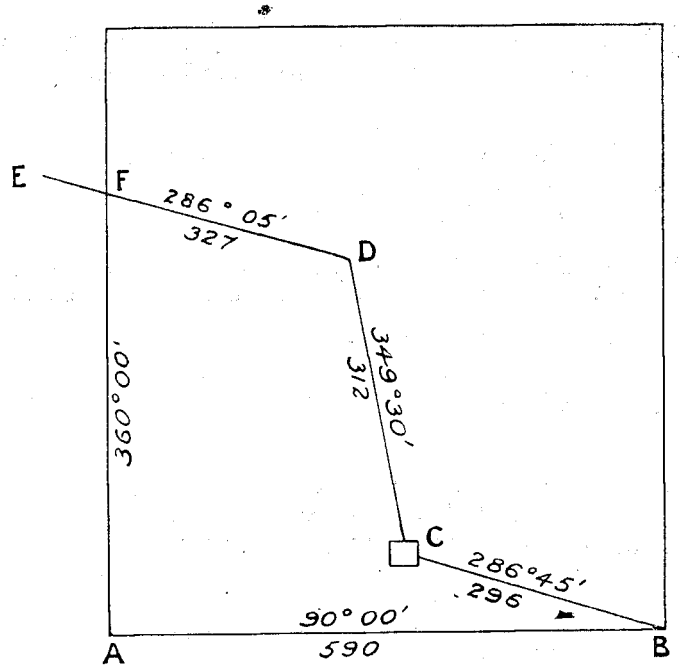
SUBJECT J.—*The Effect that Faults, Slides, and Mullock-bars have on Lodes, and how to ascertain the Direction of Slides and Heavals.*

1. Give diagrams illustrating the effect that is exercised on mineral lodes by faults, slides, and mullock-bars.

2. Describe fully (*a*) masses of ore, (*b*) stockworks, (*c*) pipes, and (*d*) churns, and give instances where they occur.

3. Suppose your lode was cut off by a heave or slide, what steps (if any) would you take to recover the lode again?

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: C the position of a shaft, and CDE an underground drive. Distances in links.

1. Compute the distance FE—*i.e.*, the encroachment on the adjoining claim; the distance AF also required.

2. The rise in the drive from C to D was found to be 3° 18', and from D to E 2° 8'; compute the difference of level, in feet, between the bottom of the shaft and the floor of the drive at F.

3. Calculate the area of the figure ABCDF.
4. Describe the "dip" and "strike" of a reef, and give diagrams.
5. Explain how you would transfer true bearing to the underground traverse in the case of only one shaft, and also when there are two.
6. Describe in their proper order the complete adjustments of a Y theodolite.

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.*

1. Where do the following metals of commercial importance occur in New Zealand, and what is the nature of the rock in which the metals are found: Iron, copper, tin, and antimony?
2. What is the character of the rock enclosing the gold-bearing quartz veins in the following localities: Coromandel, Karangahake, Waihi, Blackwater, Reefton, and Skipper's?
3. What is meant by the terms "pay-streak," "ore-shoot" and "bonanza"?
Give examples of each in mining localities familiar to you, and discuss how they have been formed.
4. Give an account of the gold-bearing veins of a New Zealand locality familiar to you, discussing their dimensions, their general trend, the nature of the enclosing rock, the minerals associated with the gold, and the distribution of the precious metals (whether in shoots or of uniform distribution).

QUESTIONS ASKED AT THE 1909 EXAMINATION FOR BATTERY-SUPERINTENDENTS' CERTIFICATES.

SUBJECT A.—*The Different Modes of reducing and pulverising Ore.*

1. State in what capacity you were employed in crushing-batteries where bullion was extracted by means of cyanide-solutions. Give the dates of your employment, and the battery superintendents you were under.
2. Describe the whole of the machinery, appliances, and plant required to treat with KCN solutions 90 tons of ore per day of 24 hours. In using stamps, give the weight and drop you would recommend; also state the maximum number of drops per minute the stamps would make without striking the cams, and give your reasons for same.
3. Show by sketch and also describe fully how you would construct a crushing-battery with all modern appliances, giving the position of machinery and appliances, with heights and distances from each other; also show by sketch and describe fully how you would construct the foundation for a stamp mill.
4. If an electric generating plant were erected beside a fall of water two miles distant from the crushing-battery, what class of motor would you erect—continuous current, alternating current, multipolar, or polyphase machine? Give your reasons for same.
5. If 120 brake horse-power had to be conveyed from a dynamo to the motor at a battery two miles distant, with a current of 100 amperes, the resistance on the cable being 0·45 ohms per mile, what would be the loss in watts in the total length of the cable?
6. Describe fully the construction and use of a tube mill. Give its dimensions, capacity, with fineness of ore operated on, the speed the mills are driven, and the horse-power required to work them.

SUBJECT B.—*Amalgamating-machines.*

1. (*a.*) Describe the action of a Wifley concentrator. (*b*) State the quantity of tailings that it will treat in twenty-four hours; (*c*) the speed that it has to work at, and the horse-power required to work it.
2. What effect has heat when applied to amalgamating-pans? What chemical substances are used in pan amalgamation? What are their actions, and what advantage, if any, is there by using them?
3. How is amalgamation of gold and silver produced? What advantage has pan amalgamation over tables covered copper plates coated with quicksilver? Describe fully.
4. What is meant by a settler? State the difference between a settler and a combination pan, and describe fully their action.

SUBJECT C.—*The Use of Quicksilver, and Methods of using it in connection with the Extraction of Gold and Silver from Ores.*

1. Describe fully how to remove all impurities from quicksilver.
2. How are copper plates cleaned and prepared to receive a coating of quicksilver; and, when used at a battery, how is the bullion removed?
3. What thickness of copper or Muntz-metal plates would you use for covering amalgamating-tables? Give your reasons for same.
4. After copper plates are coated with quicksilver, what should be done to keep the plates always in good condition when they are being used?
5. What action has antimony, lead, zinc, and tin on quicksilver when used for amalgamation of gold and silver, and how do you know when quicksilver is charged with those metals?
6. How is quicksilver retorted, and what steps are taken to prevent the fumes from the heated quicksilver arising during the retorting operations?
7. What effect has a current of electricity on quicksilver which is charged with antimony, and how is electricity applied?

SUBJECT D.—*Cyanide, Chlorination, and other Chemical Processes of recovering Gold and Silver from Ores.*

1. How is cyanide of potassium made? What are its impurities, and how do they affect the extraction of gold and silver? What advantage or disadvantage is there in using crude as compared with pure KCN?
2. What causes deterioration of cyanide-solutions, and what compounds are the result?
3. In treating tailings, is there any limit to the weakness of a KCN solution where zinc is the precipitant used? If so, state why.
4. What substitute for zinc can be used where the KCN solutions are very weak?
5. Describe fully the method of testing the strength of KCN solutions—(*a*) by standard silver-nitrate; (*b*) by standard mercurial-chloride solutions; (*c*) by standard iodine-solutions. State how these solutions are made up.
6. State how you would make up a stock solution of 2 tons, to contain 15 per cent. KCN, by using crude cyanide containing 63 per cent. of KCN.
7. How many pounds of crude cyanide containing 71 per cent. KCN would be required to make up 20 tons of a sump solution containing 0·04 per cent. KCN to 0·3 per cent. KCN?
8. What quantity of a standard solution containing 15 per cent. KCN would be required to make up 40 tons of a sump solution containing 0·08 per cent. KCN to 0·22 per cent. KCN?
9. What is meant by agitation of KCN solutions? How is it produced—(*a*) mechanically, and (*b*) by compressed air? Why is agitation required? Explain fully.
10. What means are adopted for extracting the cyanide liquor from slimes? Describe fully the different systems.
11. What antidote would you use in case of KCN poisoning? How would you apply it, and what steps would you take to relieve the sufferer?
12. (*a.*) What class of ore is best suited to be subjected to chlorination? (*b.*) How would you prepare it for chlorination? (*c.*) How is chlorine gas made, and how is it applied? (*d.*) How is gold precipitated in chlorine solutions?
13. How is gold and silver precipitated by zinc from KCN solutions; also, by an electrical process? State what advantage, if any, is gained by precipitation by electricity.
14. (*a.*) How is the bullion prepared for market? (*b.*) What process does it go through after precipitation? (*c.*) How is the gold separated from silver?

SUBJECT E.—*Sampling and Testing of Ores.*

1. How would you take a sample for assay (*a*) from a large heap of tailings, (*b*) from several truck-loads of ore?
2. Shortly describe the fire assay of a sample of quartz for gold and silver, and carefully explain the chemistry of the various processes involved.
3. How would you determine the percentage of lead in a sample of ore containing galena and copper-pyrites?
4. How would you identify arsenic, bismuth, cadmium, lead, mercury, nickel, tin, and zinc when occurring singly in rocks?
5. Describe how you would prove the presence of the following in a sulphide ore: Zinc, silver, bismuth, antimony.

SUBJECT F.—*A Knowledge of Arithmetic and the Method of keeping Battery Accounts.*

1. A steam-engine with double cylinders gives 200 indicated horse-power; the initial pressure of steam is 90 lb. per square inch, which is cut off at $\frac{2}{3}$ of the stroke; the piston-speed is 375 ft. per minute. Required, the mean pressure and diameter of cylinders, neglecting the area of the piston-rod.
2. A cylindrical vat 5 ft. in depth holds 9,801 imperial gallons of KCN solution. Required, the diameter of the vat, and the number of square feet in its internal surface.
3. The diameter of a nozzle delivering water on to a Pelton wheel is $3\frac{5}{8}$ in.; the water at the nozzle is under a pressure of 52 lb. per square inch. Required, the number of cubic feet of water per minute, and the horse-power developed by the Pelton wheel, allowing it to give 80 per cent. of the theoretical power of the water.
4. An incline tramway 2,000 ft. in length has a rising gradient of 1 in 9 against the load; the tramway is worked with an endless rope; trucks weighing 18 cwt. each are placed along the whole length of the rope 30 ft. apart; the weight of the rope is 25 lb. per fathom, and the rope is travelling at the rate of two miles per hour. Required, the strain on rope in tons, neglecting friction.
5. The value of bullion containing 46·8 per cent. of gold and 53·2 per cent. of silver was £1,476 10s. 6d.; the value of the gold was £4 3s. per ounce, and the silver 2s. 7d. per ounce. How many ounces were there of gold and silver?

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

First-class Mine-managers' Certificates.

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

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 MINE-MANAGERS' CERTIFICATES—*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.
Bell, O., Waihi.
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.
Katz, C. A., Waihi.
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.
Smith, Walter, Karangakake.
Spearing, J. R., Waihi.
Stewart, F., Waihi.
Stewart, R. A., Reefton.
Thomson, Thomas, Waihi.
Thorne, G. M., Waihi.
Tucker, E. S., Coromandel.
Turner, G. W. E., Reefton.
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 MINE-MANAGERS' CERTIFICATES.

Certificates of Service 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.
Hornibrooke, 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 MINE-MANAGERS' CERTIFICATES—*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.
Fry, Sidney, Westport.
Fuller, John P., Kuaotunu.
Fyfe, A., Dunedin.
Gardner, E. A., Reefton.
Gibson, William, Waihi.
Gilpin, J., Waihi.
Gow, E. A., Crushington.
Grayden, J., Waitekauri.
Grayden, Peter, Thames.
Grumitt, P. H., Thames.
Gwilliam, 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.

* Deceased since issue of certificate.

BATTERY-SUPERINTENDENTS' CERTIFICATES—*continued.*

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

Hutchison, R. M., Karangahake.
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.

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, 1905, and 1908.

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.
Campbell, G. W. T., Alexandra.
Carnegy, A., Three-channel Flat.
Carr, W., Alexandra.
Carter, W. W., Sandy Point.
Chapman, Robert, Maori Point.
Clark, D., Callaghan's Creek.
Clarke, R. S. B., Alexandra 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—*continued.*

Dredgemasters Certificates, after Examination, issued under the Mining Acts, 1898, 1901, 1902, 1905, and 1908 continued.

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.
Moncrieff, 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.
Spooner, A. E., Alexandra.
Steele, Thomas, Alexandra.
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, T. R., Cromwell.
Weir, W., Nevis.
Wescombe, Alfred L., Island Block.
Westcott, P. A., Miller's Flat.
Williams, Frederick, Alexandra.
Wilson, George, Marsden.
Wilson, Stephen L., Inangahua Junction.
Wood, W. W., Cromwell.
Woodhouse, F., Bannockburn.
Woodhouse, G. G., Waitiri.
Wylde, G. R., Inangahua Junction.

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