1901.

NEW ZEALAND.

THE GOLDFIELDS OF NEW ZEALAND:

REPORT ON ROADS, WATER-RACES, MINING MACHINERY, AND OTHER WORKS IN CONNECTION WITH MINING.

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

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ERRATA.

Page 28, "Accidents—Southern District," *for* "7," under heading of "Alluvia Mines," *read* "6."

Page 33, 4th paragraph, 5th line, *for* "converged" *read* "conveyed."

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REPORT ON ROADS, WATER-RACES, MINING MACHINERY, AND OTHER WORKS IN CONNECTION WITH MINING.

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Mr. JOHN HAYES, F.S.Sc., Inspecting Engineer, to the Hon. JAMES McGOWAN, Minister of Mines.

SIR,— Mines Department, Wellington, 20th May, 1901.

I have the honour to present my report, covering those of Inspectors of Mines, Wardens, and other officers connected with the department. As recently passed regulations require returns, for the compilation of statistics, to be sent by holders of mining claims to the Inspectors of Mines made up to the 31st day of December in each year, instead of the 31st day of March, as formerly, the reports, statistics, &c., in connection with mining operations herewith submitted are for nine months—viz., from the 1st April to the 31st December, 1900. Future reports, &c., will be for the calendar year, in the same manner as has hitherto been the case in respect to the annual reports on coal-mines.

An exception to this rule will naturally occur in the case of tables showing expenditure on roads, bridges, tracks, prospecting, &c., by the Government, which will, as usual, be made conformable to the term of the financial year.

SUBSIDISED ROADS AND TRACKS.

The expenditure (as subsidies) authorised and the liabilities on outstanding authorities for the year ending the 31st March, 1901, are as follows:—

Name of Local Body.	Expenditure for the Year ending 31st March, 1901.	Liabilities on Authorities on 31st March, 1901.
	£ s. d.	£ s. d.
Coromandel County	878 1 0	180 0 0
Thames County	100 18 6	349 1 6
Thames Borough	434 12 6	100 0 0
Ohinemuri County	51 15 0	172 3 2
Piako County	290 0 0	...
Collingwood County	184 16 4	415 3 8
Buller County	370 0 0	375 0 0
Grey County	306 0 0	347 10 0
Westland County	8 17 0	170 6 6
Tuapeka County	10 0 0	240 0 0
Cromwell Borough	150 0 0	...
Lake County	450 0 0	744 0 0
Contingencies	29 12 9	...
Totals	3,264 13 1	3,093 4 10

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, 1901 :—

Name of Local Body.	Expenditure for the Year ending 31st March, 1901.	Liabilities on Authorities on 31st March, 1901.
	£ s. d.	£ s. d.
Whangarei County	...	200 0 0
Coromandel County	3,592 6 3	5,798 17 3
Thames County	4,098 18 2	2,598 9 6
Waitoa Road Board	...	150 0 0
Ohinemuri County	1,637 14 11	3,357 0 8
Piako County	275 0 0	118 0 0
Tauranga County	1,030 0 0	737 0 0
Picton Road Board	30 0 0	...
Pelorus Road Board	140 17 1	562 18 7
Wairau Road Board	11 18 10	600 0 0
Collingwood County	1,297 19 2	1,783 1 10
Waimea County	561 8 7	1,709 18 2
Buller County	2,400 0 0	4,895 0 0
Inangahua County	2,345 16 2	1,202 13 6
Grey County	4,686 4 0	1,765 0 0
Brunner Borough	200 0 0	...
Westland County	2,902 7 0	2,629 0 0
Ross Borough	...	200 0 0
Taieri County	...	400 0 0
Bruce County	162 0 0	218 0 0
Tuapeka County	1,800 0 0	1,325 0 0
Vincent County	488 0 0	1,912 0 0
Lake County	745 15 0	875 0 0
Southland County	1,250 0 0	1,600 0 0
Knapdale Road Board	...	150 0 0
Wallace County	326 10 7	150 0 0
Lands and Survey Department	9,176 13 3	4,079 7 9
Public Works Department...	5,993 5 2	7,111 17 1
Totals	45,152 14 2	46,128 4 4

PROSPECTING FOR GOLD.

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

Name of County.	Expenditure for Year ending 31st March, 1901.	Liabilities on Authorities on 31st March, 1901.
	£ s. d.	£ s. d.
Bay of Islands	85 2 0	164 18 0
Marlborough	177 16 6	18 4 6
Coromandel	20 0 0	4 0 0
Ohinemuri...	1 4 0	5 11 0
Buller	138 14 9	59 15 3
Grey	239 7 0	92 5 0
Westland	569 9 6	688 14 0
Tuapeka	9 17 10	...
Southland...	25 0 0	...
Totals	1,266 11 7	1,033 7 9

SCHOOLS OF MINES.

In the North Island the schools at Coromandel, Thames, and Waihi continue to be appreciated, and in the early part of this year a school was opened at Karangahake to meet the requirements of the locality.

In the Middle Island, the school in connection with the University of Otago at Dunedin and that at Reefton are doing good work. Some instruction is also given at Nelson by Mr. W. F. Worley.

The late Director of the school at Coromandel (Mr. P. J. McLeod) having recently obtained an important appointment in one of the other colonies, no full report has been received. I am, therefore, only able to present a very brief summary of the position of the school. The reports sent in from the several schools are as follows :—*

THAMES SCHOOL OF MINES.

Mr. F. B. Allen, M.A., B.Sc., Director, reports as follows :—

During the twelve months ending 31st March, 1901, several important changes have taken place in connection with the Thames School of Mines, and its sphere of usefulness has been extended by the erection of a handsome museum, well stocked with mineral exhibits.

In September, 1900, Mr. E. J. Williams, drawing-master, was suddenly called away to England on private business, and his place was taken and has since been held by Mr. A. B. Harding. Mr. Williams proved himself to be a careful, painstaking, and efficient teacher ; the students made quick progress under his tuition, and his departure was much regretted. Mr. Harding, however, has ably carried on the work, and has maintained a good average attendance at the classes. It is extremely satisfactory to see these drawing classes so well attended, and the students doing good work, for drawing, although of great importance to the mining engineer and every mining man, is often neglected.

At the end of January, 1901, Mr. W. H. Baker, B.Sc., severed his connection with the school to take charge of the newly formed Karangahake School of Mines, and he has since been appointed lecturer in assaying, chemistry, &c., at Launceston, Tasmania. Mr. Baker performed his duties as assistant here for two years zealously and well, and entirely to my satisfaction, and will, I have no doubt, in his new position, reflect credit on the Thames School, where he received part of his scientific training as well as his training as a teacher.

The following table is interesting as showing the positions now held by past assistants at the school :—

Former Assistants, Thames School of Mines.	Date.	Position now held.
A. Purdie, M.A.	1892	Director of Technical Education, Perth, W.A.
F. B. Allen, M.A., B.Sc. ...	1893–96	Director, Thames School of Mines.
P. G. Morgan, M.A.	1896–97	Director, Waihi School of Mines.
W. McLeod, B.A., B.Sc. ...	1897–98	Director, Charters Towers School.
W. H. Baker, B.Sc.	1899–1900	Launceston School of Mines.

One of my senior scholars, Mr. R. B. McDuff, has acted as temporary ssistant during February and March, and has performed his duties in a highly satisfactory manner ; so well, in fact, that at the end of March he was offered, and has accepted, the position of Director of the Karangahake School of Mines. As no assistant has been appointed to the Thames School in Mr. Baker's place, I am thus left without even temporary assistance in the meantime. For the sake of the efficient working of the school it is to be hoped that an appointment will be made in the near future.

During the year Mr. P. H. Grumitt has been engaged in the battery whenever parcels of ore have been received for treatment. He has performed his work faithfully and efficiently, and is still my battery-foreman. It was found necessary to erect a framework under the main driving-shaft in the experimental plant, owing to the development of a considerable amount of vibration, which was threatening mischief to the bearings and the general safety of the structure. The rocking motion has now been stopped, and the mill is in good working order. The outside of the battery building as well as all the school-buildings proper, both inside and out, have been repainted at considerable expense. This work has been well executed, and, besides greatly improving the general appearance of the school, will tend to preserve the buildings, and will certainly make the class-rooms far more attractive for the purposes of study and laboratory practice.

During the year I have been busily engaged collecting samples for the museum, and in naming, labelling, and classifying the exhibits, and by the end of the year had the whole collection in good order, so that in January, 1901, the museum was formally opened to the public by the Hon. the Minister of Mines. The museum itself, built by Messrs Lovatt Brothers twelve months ago, under the supervision and according to the designs of Mr. D. Mahoney, architect, measures 60 ft. by 25 ft., and is a lofty building, well lighted by high windows, and provided with gas-light. It occupies a good position facing the Beach Road, and bears the title " Thames School of Mines, 1885," that being the year the school was inaugurated on the Thames.

The approaches to the museum have lately been filled in and levelled off, and, as a suitable picket-fence has been erected in front of and along one side of the building, this part of the school property presents a good appearance. The whole of the school-buildings have been repainted, and it now only requires the erection of a new picket-fence in place of the present dilapidated paling-fence to make the whole of the school thoroughly presentable.

The show-cases, constructed according to plans and specifications drawn up by myself, have all been placed in position and filled with exhibits. They consist of 80 ft. of wall-cases 7 ft. high, and five large double centre-cases, all fitted with sloping shelves well calculated to afford an easy and unobstructed view of the exhibits. There are, besides, six flat wall-cases, which are held on trust for the Thames Public Library Committee.

I have personally collected, during the last two years, a very large number of the samples of rocks and minerals exhibited in the museum, and the collection as a whole is largely illustrative of the Hauraki Peninsula, and has been arranged with the object of being of practical utility to the student, the miner, and the prospector.

* It will be noticed that some of these reports are made for the year ending 31st March.

One section is devoted to the display of two hundred samples of rhyolite, showing various kinds of fluxion and spherulitic structure, and collected from Mercury Bay, Tairua, Waihi, Owharoa, Hikutaia, Omahu, and the headwaters of the Kauaeranga. This rock, which is younger than and overlies the gold-bearing andesites, is generally considered unfavourable for gold, but some samples of rhyolite are exhibited with quartz attached which shows gold freely. Underneath the rhyolites are set out about one hundred and fifty samples of andesites, showing hard bars, kindly country, tuffs, breccia, &c.; while there is a complete series showing all the gradations between hard blue and soft white decomposed andesite as met with in the mines. The classes of rock most and least favourable for gold are well illustrated.

One hundred and fifty samples of gold-bearing quartz, typical of the reefs of the Hauraki Peninsula and other parts of New Zealand, are shown. Many of these have attached to them their assay value in gold and silver, obtained in each case by actually crushing one ton of similar ore and extracting the bullion. The collection shows at a glance what kinds of quartz have been found to carry good values, and which have proved worthless, and should be useful to the prospector for purposes of comparison. Several specimens of quartz showing gold, and samples of New Zealand reefs are placed alongside of quartz from other parts of the world for comparison.

The minerals found associated with the gold in the reefs are illustrated by one hundred or more specimens, consisting chiefly of calcite, stibnite, blende, galena, copper, iron and manganese ores, barytes, &c.

One division of the show-cases is set aside for the exhibition of type samples of the ordinary rocks and minerals from all parts of the world. These include two hundred minerals and one hundred rock samples, all properly arranged and classified, while a separate case is devoted to the commonest rock-forming minerals. These, together with the four hundred fossils—two hundred New Zealand and two hundred foreign—are arranged so as to afford an easy object-lesson to mining students.

A few of the New Zealand coals are also shown, but I hope to be able to make this collection more complete as time goes on.

The museum also includes a fine collection of Tasmanian minerals and rocks, and a series of nickel and chrome iron ores, sent by Captain Maning, from New Caledonia.

An extremely interesting series of exhibits is that comprising one hundred samples of crude ore, fluxes, slags, skimmings, antimony dross, lead and bullion, in connection with the smelting process of ore-treatment, which was obtained through the courtesy of Mr. F. E. Wood, late refiner at Broken Hill. It will prove of great value to students, miners, and metallurgists.

Mention may be made of some of the other exhibits, viz.: Westland rocks, donated by the Government Geologist; a set of limestones given by Mr. George Wilson; oil-shale and other South Island samples forwarded by Mr. Hayes, Inspecting Engineer of Mines; and samples of cinnabar and fossil leaves sent by Mr. Stevenson from his mine at Maungakirikiri. The museum also contains models of shafts, pumps, &c., donated by the Mines Department, as well as models of underground workings, shafts, poppet-heads, and safety appliances constructed by the students of the school. Altogether there are about three thousand exhibits, all of which have been named and labelled, but it is my intention later on to affix to each specimen a properly printed ticket with descriptions of the different sets of exhibits. The museum is open to the public on Thursdays, and visitors at other times are shown over on application to myself. Already a large number of mining men and visitors have viewed the collection, and have expressed their appreciation of its value to the community.

The thanks of the council as well as my own are due to Messrs. Hayes, McKay, Wilson, Wood, Maning, Park, Morgan, and numerous other gentlemen who have contributed samples, as well as to my students, Messrs. Graham, Whitley, Hughes, Barrance, Clarke, and Grayden, who have from time to time forwarded collections of rocks and minerals.

Personally, besides collecting a large number of the exhibits now on view, I have had the pleasure of making a gift to the council for the museum of the whole of my own private collection of minerals, and I have great hopes that the museum will increase in size and usefulness, and prove a valuable addition to the educational power of the Thames School.

My thanks are due to Messrs. W. H. Baker and C. A. Banks for assistance in the arrangement of the exhibits, a matter which required much time and labour.

The number of assays made for the public for the year is as follows:—

Number of public asssays	148
Number of assays in connection with the experimental plant	156
Total assays	304

These assays were made in duplicate by the staff of the school in the separate assay-room specially built for public work, and which is entirely detached from the students' portion of the institution. During the last month, owing to the laboratory of the Government Analyst at Wellington undergoing repairs, a number of assays have been made for the Mines Department.

In the experimental plant attached to the school, eighteen parcels of ore, of an aggregate weight of 9⅘ tons, have been treated, viz.:—six parcels, weighing 12,880 lb., were pan-amalgamated; four parcels, weighing 6,560 lb., were cyainded; six, weighing 1,800 lb. were treated in berdans; and two parcels of amalgam from the Sheet Anchor Claim, Omahu, from which parcels of ore have been sent to the school for treatment, were cleaned and retorted. The total value of the bullion recovered amounted to £130 15s., and the bullion from each parcel was returned to the owner on completion of the experimental treatment along with the report. The average percentage extractions for the year were 88·6 per cent. of the value recovered by the pan-amalgamation process, and 70·5 per cent. by the cyanide process. The details of each parcel, the weight, assay value, and extraction of gold, silver, and value being shown in the table attached hereto.

TABULATED STATEMENT showing PARCELS of ORE treated at Thames School of Mines Experimental Plant during 1900–1.

Name of Mine or Owner, and District.	Description of Ore.	Dry Weight of Ore.	Assay-value of Ore per Ton.			Bullion saved.	Value per Ounce.	Percentage saved.		
			Gold.	Silver.	Value.			Gold.	Silver.	Value.
A.—BY PAN-AMALGAMATION.										
		Lb.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.	Oz. dwt. gr.	£ s. d.			
B. Nolan, Blenheim ...	White glassy quartz in schist	1,120	0 10 14	...	2 2 4	0 5 0	3 17 1	90·9	...	90·9
Sheet Anchor, Omahu ...	Hard glassy quartz and clay rubble	2,500	3 8 1	31 10 4	16 5 9	41 4 0	0 12 10	94·0	65·2	88·8
Sheet Anchor, Omahu ...	No. 2 parcel, similar ore	2,400	2 1 14	17 0 6	10 2 4					
Klondyke, Omahu ...	Quartz stringers, with veins of iron-oxide ...	2,200	0 9 10	1 0 4	1 19 8	1 5 0	1 5 4	81·1	85·9	81·3
T. Young, Blenheim ...	White quartz	2,100	1 3 22	0 0 20	4 15 9	1 0 6	3 6 19	88·1	...	88·1
Big Beetle, Kapowai ...	White flakey and flinty quartz	2,560	8 1 8	3 3 0	32 11 7	13 11 8	2 11 6	93·9	86·7	93·8
B.—BY CYANIDE.										
Imperial, Karangahake ...	Hard white quartz, with mullock	2,100	0 11 18	0 8 10	2 7 10	0 15 0	2 5 7	86·2	89·6	86·3
Cahill, Coromandel ..	Stringers of quartz in andesite	1,200	0 2 0	0 3 1	0 8 4	0 1 18	1 17 3	72·9	64·3	72·0
Imperial, Karangahake ...	White quartz and iron oxides and sulphides ...	2,500	0 3 21	3 5 5	1 2 0	3 2 12	0 4 11	73·7	36·8	62·7
Puru	Hard brownish quartz	960	0 10 9	0 11 1	2 2 7	0 6 0	1 17 2	61·0	66·0	61·1

The following parcels were also treated in the battery during the year, but from their nature did not pass through either the amalgamation or the cyanide process. They simply involved crushing, berdan treatment, and retorting and melting the bullion.

Owner, &c., and District.	Weight.	Yield in Bullion.	Value.
		Oz. dwt. gr.	£ s. d.
W. Woodward, Thames	5 lb. specimens	3 2 0	8 7 6
Gloucester, Thames	7 lb. specimens	2 10 0	6 5 0
School of Mines, Thames	20 lb. retort	0 18 0	2 3 2
Monowai, Waiomo	350 lb. slags	9 0 0	2 14 0
Monowai, Waiomo	150 lb slags	14 9 0	5 16 0
Sheet Anchor, Omahu	53½ oz. amalgam	13 6 0	21 19 0
Sheet Anchor, Omahu	31 oz. amalgam	7 12 0	12 10 0
Hikurangi	1,680 lb. fireclay	...	...

When the experimental plant has not been crushing for the public, the students have on several occasions made use of the battery as a means of gaining practical experience in the different processes of ore-treatment, and have gained thereby, besides considerable information, a confidence in the regulation of machinery which will be invaluable to them in the future

The shutting-down of most of the mines under protection has had the effect of causing a number of students to leave the district in search of work, but, although the number of individual students attending the classes has been somewhat less this year than last, the total attendances at the classes have been greater this year owing to students each taking more subjects of instruction, and consequently taking fuller advantage of the opportunities afforded by the school.

The following table shows the attendances at the various classes:—

Table of Attendances for the Year ending 31st March, 1901.

Name of Subject.	1900.			1901.
	First Term.	Second Term.	Third Term.	First Term.
Registered students—				
General and mining geology	6	9	7	12
Mineralogy and blowpipe	6	10	7	7
Land- and mine-surveying	17	26	15	11
Mathematics	17	20	19	11
Mining and applied mechanics	17	22	15	11
Metallurgy of gold and silver	...	18	19	...
Practical chemistry	21	28	22	14
Theoretical chemistry	20	23	18	14
Practical assaying	26	34	24	14
Mechanical drawing	19	24	16	13
Total	149	214	162	107
Saturday science class	45	50	70	50
Total attendance at classes	194	264	232	157
Individual registered students	50	70	50	36
Total individual students	95	120	120	86

The annual examinations were held during the second and third weeks of December, 1900, and were supervised by myself and my assistant, Mr. W. H. Baker, B.Sc. The papers, prepared and printed in Wellington, were received each day from Mr. Coutts, Inspector of Mines, at the hour appointed for the examination, and the answers handed in by the candidates were sealed in separate envelopes at the close of the examination and forwarded on to the examiners in Wellington. The examiners were Mr. Hayes, Inspecting Engineer of Mines; Mr. Aston, Government Analyst; Mr. Alexander McKay, F.G.S., Government Geologist; Mr. C. H. Pierard; and the Surveyor-General. The results were satisfactory, although the percentages obtained in some of the subjects were not as high as in some previous years. This was especially noticeable in the case of elementary chemistry, for which there was a new examiner. The paper set was beyond the capacity of those attending the class, which is held on Saturday, free to public-school pupils, and they were unable to attempt much of the paper. It is extremely gratifying that the attendance at the Saturday science class maintains a high average, for from these students the school hopes to draw much of the material upon which it is to work in the future. Many of the pupils will no doubt take up other work, in which they will probably be assisted to some extent by the elementary science they become acquainted with at these clssses, but others will in due course attend the regular classes of the school in mining, chemistry, metallurgy, &c., and they will be all the better for the groundwork now being laid by the instruction they are receiving every week.

The following table shows the results of the late annual examinations:—

RESULTS OF ANNUAL EXAMINATIONS, 1900.

Subject of Examination.	First Class.	Second Class.	Third Class.	Failed.	Total.
General and mining geology	3	...	1	...	4
Pumping and winding	...	...	2	3	5
Ventilation and explosives	2	2	1	1	6
Mining and applied mechanics	1	...	5	...	6
Theoretical chemistry (senior)	2	2	...	1	5
Theoretical chemistry (junior)	...	1	2	...	3
Practical chemistry (senior)	1	3	1	1	6
Practical chemistry (junior)	1	1	..	...	2
Practical assaying, dry (senior)	7	3	2	...	12
Practical assaying, dry (junior)	1	...	2	1	4
Practical assaying, wet (senior)	2	2	1	...	5
Practical assaying, wet (junior)	...	...	2	...	2
Surveying (land and mine)	...	...	2	3	5
Map-drawing	2	...	1	...	3
Mineralogy and blowpipe	2	...	...	...	2
Metallurgy	3	2	2	...	7
Mechanical drawing	5	1	2	...	8
	32	17	26	10	85
Saturday science	1	1	6	7	15
Totals	33	18	32	17	100

There were two candidates for the University scholarship—Mr. J. E. Brown and Mr. R. B. McDuff—but neither was successful. The previous winners of the scholarship have all had a high-school training before attending the School of Mines, whereas neither of the present candidates has received any such training, and the absence of this groundwork made their work, and also that of the teaching staff, so much the more difficult, and in some measure accounts for their want of success, especially when it is considered that the high average of 75 per cent. is required in each of eight subjects. Mr. Brown secured an average of 69·2 per cent., and Mr. McDuff an average of 71·7 per cent. Mr. Brown carried off the President's medal for the highest aggregate of marks in all subjects with an average of 69·1 per cent. in thirteen subjects, Mr. McDuff being second with an average of 70·7 per cent. in eleven subjects.

During 1900 the following Government certificates have been granted to Thames School of Mines students, after examination and on proof of the necessary practical experience: Two first-class mine-managers', two first-class coal-mine managers', and twelve battery-superintendents' certificates, making a total of sixteen; while another candidate passed the examination, but has not yet had the requisite practical experience of cyanide-work.

In January, 1901, I supervised the annual Government examination, for which there were fifteen candidates. The Thames School this year presented seven candidates for first-class mine-managers' and eight for battery-superintendents' certificates. The results of the examination have not yet been declared. These results are a proof that the Thames School is doing good useful work, and that the advantages of combining theoretical with practical training are being recognised.

DISTRIBUTION OF PRIZES AND CERTIFICATES.

The annual distribution of prizes and certificates took place on Tuesday, 12th February, before a moderate gathering of students and their friends. The President, Mr. E. McDonnell, presided, and the secretary read the annual report and balance-sheet of the Council, showing a credit balance of £5 13s. 4d., and assets estimated at £3,500.

GOVERNING BODY.

At the annual meeting regret was expressed at the resignation of Mr. T. A. Dunlop, President of the Council, owing to pressure of business, and the following officers and members of Council were elected for the ensuing year: President, Mr. E. McDonnell; vice-president, Mr. George Denby; hon. treasurer, Mr. J. Hague Smith; Council, Messrs. E. F. Adams, W. Baker, T. C. Bayldon, W. Eddowes, H. Haszard, M. Paul, and W. H. Paltridge; hon. secretary, Mr. Albert Bruce.

It gives me much pleasure that the Council have all along taken such a keen and intelligent interest in the school, and have taken every opportunity of improving it; and I have thankfully to acknowledge the able assistance of Mr. W. H. Baker, B.Sc., Assistant Lecturer; of Mr. R. B. McDuff, temporary assistant; of Mr. A. B. Harding, drawing-master; of Mr. E. McLean, late laboratory assistant; and of Mr. C. A. Banks, who is now acting in that capacity; and I am glad to say that the students have throughout the year conducted themselves in an orderly manner, and have shown an earnest desire to take advantage of the courses of instruction.

Syllabus of Instruction.

The syllabus of lectures and instruction was fully given in the report of last year, the several subjects and their divisions being as follows:—

General and Mining Geology.—Physical geology, dynamical geology, structural geology, geological surveying, stratigraphical geology.

Mineralogy and Blowpipe Determination.—Systematic mineralogy, descriptive mineralogy, crystallography.

Mathematics.—Arithmetic, algebra, Euclid.

Land- and Mine-surveying.—Adjustments of instruments, mine-surveying, mathematics, levelling.

Mining, Applied Mechanics, and Hydraulics.—Mining, pumping and pit-work, ventilation, explosives, hauling and winding, water-power.

Practical Assaying.—Dry assaying, wet assaying.

Practical Chemistry.—Junior class, senior class.

Theoretical Chemistry.—Principles of chemistry and chemical philosophy, the elements.

Metallurgy of Gold and Silver; Physics; Practical Astronomy; Mechanical Drawing.

Special classes are held for the instruction of candidates for the Government mine-managers', battery-superintendents', and engine-drivers' certificates. First term, first Monday in February to 30th April; second term, 9th May to 20th August; third term, 9th September to 20th December. Registration of membership, 10s. per annum; class fees, 5s. per term for each subject taken up.

Scale of Charges for Public Assays and Analyses.

	£	s.	d.
Bullion assays	0	5	0
Assays of quartz, tailings, or concentrates	0	5	0
Examination and determination of rocks and minerals	0	5	0
Assay of lead- and tin-ores, each	0	5	0
" iron- and manganese-ores	0	10	0
" copper- and antimony-ores	0	10	0
" zinc-, mercury-, and bismuth-ores	0	10	0
" gold- and silver-ores, with parting assay	0	5	0
Analysis of limestone and calcareous freestone, complete	1	0	0
Analysis of limestone and calcareous freestone, partial	0	10	0
" coals and fuels, each	0	10	0
" rocks and soils, complete	2	0	0
" rocks and soils, partial	1	0	0
" fireclays and slags	1	0	0
" manures	2	0	0
" waters, complete	3	0	0
" waters, partial	2	0	0
" nickel-, cobalt-, and chrome-ores	0	10	0
" concentrates	1	10	0
" complex sulphide-ores, &c.	1	10	0

Experimental Plant.

Reports of working-tests of parcels of gold- and silver-ores, concentrates, and tailings, from 1 to 3 tons:—

(1.) By the cyanide process: Dry crushing—(*a*) by percolation; (*b*) by agitation. (2.) By amalgamation in pans: Wet or dry crushing—(*a*) by raw amalgamation in charges; (*b*) by Washoe process with chemicals—1, hot pan-amalgamation; 2, after chloridizing roasting. (3.) Chlorination—small barrel tests.

Cost of treatment (minimum charge): £5 per parcel not exceeding 1 ton.

Students are permitted to work in the experimental plant under special conditions.

COROMANDEL SCHOOL OF MINES.

Mr. P. J. McLeod, B.A., B.Sc., Director.

Notwithstanding the decrease of population in and around Coromandel in consequence of the closing-down of some of the mines, the number of students was well maintained during the year 1900 in comparison with previous years, and the average attendance at the classes has been exceptionally good. At the commencement of the first term sixty-eight students were enrolled, and in the second and third terms the attendance was sixty-two and fifty-nine respectively.

At the annual Schools of Mines Examination, held in December, several of the students acquitted themselves very creditably, but the two scholarship candidates failed to pass owing to their not obtaining 75 per cent. of marks possible in every subject.

The total number of public assays made during the year 1900 was eighty-six, an advance on the record of any previous year. Many of these were on samples sent from various parts of the colony.

The mineral collection of the school has been considerably added to by specimens from Tasmania and various parts of New Zealand, also by valuable specimens of Abyssinian rocks and materials presented by Mr. H. P. Hornibrooke, and Triassic fossils from the Nelson District presented by Mr. James Park, F.G.S.

Valuable services have been rendered to the school by the Rev. C. F. R. Harrison, instructor in mechanical drawing, and Mr. A. H. Gatland, lecturer in mathematics.

Sundry repairs and additions have been made during the year to school fixtures and apparatus, but, the stock of necessary chemicals having got low, special representations as to the requirements of the school in this respect have been made to the Hon. the Minister of Mines, with favourable results.

The public battery was formally opened on the 16th August, 1900. The plant consists of one single stamp for small tests, and a five-head set of stamps, together with four berdans. Motive-power is obtained by an oil-engine. This battery is found very useful by tributers and small parties of miners, and the charges for crushing have been arranged on a basis which merely defrays working-expenses, *plus* a fair allowance to cover wear-and-tear. It is hoped that a small cyanide plant may be added. This would very materially enhance the value of the battery for testing purposes.

Receipts in connection with school amount to £301 17s. 2d.; the expenditure has been £292 15s.; leaving a credit balance of £9 2s. 2d. Receipts in connection with battery amount to £272 10s. 5d.; Government grant, £700; County Council donation, £200: making a total of £1,172 10s. 5d. The expenditure has been £1,135 0s. 5d.; liabilities amount to £117 13s.: total, £1,252 13s. 5d.; leaving a deficit of £80 3s.

WAIHI SCHOOL OF MINES.

Mr. P. G. Morgan, M.A., Director, reports :—

During the past year the various classes have been well attended, and good work has been done by the great majority of the students. As in the previous year, however, the number of students, though quite sufficient fully to employ myself and the assistant lecturer, has hardly been so large as one might expect in a town of the size of Waihi, where, probably, well over a thousand men are employed in connection with the mines and batteries. Under these circumstances one might well expect a hundred students, instead of half that number. The average number of registered students on the roll during 1900 was forty-nine, and the average class-attendance 148. In addition, a Saturday science class was carried on during the first two terms, which was attended principally by children from the higher standards of the public school. The attendance, which was large during the first term, fell away during the second, and the class was therefore discontinued. During the first term of this year the attendance shows a substantial increase over the corresponding period of last year, the number of registered students being fifty-six, and the class-attendance 172.

The following table shows the attendance at the various classes during the past twelve months:—

TABLE of ATTENDANCES for the Year ending 31st March, 1901.

Name of Subject.	1900.			1901.
	First Term.	Second Term.	Third Term.	First Term.
Mining	9	14	17	13
Advanced mining	...	...	21	...
Mathematics	23	18	22	23
Theoretical surveying	9	16	17	17
Practical surveying	9	10	9	11
Geology	...	9	11	11
Mineralogy and blowpipe analysis	...	...	...	12
Theoretical chemistry	23	21	15	18
Practical chemistry	24	25	15	21
Assaying	26	27	27	26
Metallurgy	7	3	3	8
Drawing	3	8	3	12
Totals	133	151	160	172
Saturday science class	26	7	...	...
Individual registered students	46	47	55	56
Total individual students	72	54	58	56

It will be noticed that assaying and chemistry, as in former years, are the most popular subjects.

The following is a summary of the work done during 1900 in the various classes :—

Mining.—(*a.*) The sinking of shafts, construction of main drives, &c. (*b.*) The timbering and support of mine-workings. (*c.*) The drainage of mines, pumping appliances, &c. (*d.*) Hauling and winding. (*e.*) Mine-ventilation. (*f.*) Tapping water in mines; modes of constructing dams. (*g.*) Blasting and explosives. (*h.*) Strength of materials.

Advanced Mining and Mining Geology.—(*a.*) Nature and mode of occurrence of mineral deposits. (*b.*) The formation of lodes. (*c.*) The dynamics of lodes. (*d.*) Dredging rivers and alluvial flats—the different types of dredges, their construction, mode of working, saving the gold, &c. (*e.*) Mine accounts.

Text-books: Le Neve Foster's "Ore- and Stone-mining"; Gordon's "Mining and Engineering."

Mathematics.—(*a.*) Arithmetic—the whole subject. (*b.*) Algebra—elementary rules; simple equations; factors; use of formulæ; problems; square and cube root; H.C.F.; L.C.M.; fractions; quadratic equations; cyclic order, &c. (*c.*) Geometry—Euclid, Book I.

Text-books: Hudson and Smith's "Arithmetic"; Hall and Knight's "Elementary Algebra"; Todhunter's "Euclid."

Theoretical and Practical Surveying.—Nature and use of logarithms; the trigonometrical ratios; solution of triangles; adjustments of theodolite, miners' dial, and dumpy level; chaining; traversing, connecting underground and surface meridians; calculation of traverses; plotting survey; plan-drawing; mine-surveying problems.

Text-book: Brough's "Mine-surveying."

Geology. — (*a.*) Physical geography. (*b.*) Dynamical geology. (*c.*) Structural geology. (*d.*) Classification and mode of formation of rocks.

Theoretical Chemistry. — Fundamental principles; the non-metallic elements; the alkali metals.

Text-books: Roscoe's "Elementary Chemistry"; Jago's "Inorganic Chemistry."

Practical Chemistry.—(*a.*) Manufacture of oxygen, hydrogen, chlorine, &c. (*b.*) Making up laboratory solutions. (*c.*) Qualitative tests for metals and acids. (*d*). Separation of the metals. (*e.*) Manipulation and manufacture of chemical apparatus. (*f.*) The various operations connected with chemical analysis, such as solution, precipitation, filtration, washing, drying, ignition, weighing, &c. (*g.*) Analysis of simple substances.

Text-book: Park's "Assaying and Practical Chemistry."

Wet and Dry Assaying.—(*a.*) Furnaces, materials, and appliances. (*b.*) Dry assays of gold, silver, mercury, tin, lead, copper, and antimony ores. (*c.*) Assay of gold and silver bullion. (*d.*) Problems and calculations. (*e.*) Gravimetric assays of silver, lead, antimony, bismuth, copper, iron, zinc, manganese, mercury, chromium, nickel, and cobalt. (*f.*) Volumetric assays of copper, iron, zinc, and potassium cyanide. (*g.*) Colorimetric estimation of copper. (*h.*) Making up standard solutions. (*i.*) Estimation of chlorine, hydrochloric acid, sulphur, sulphuric acid, phosphorus, phosphoric acid, arsenic, and tungsten. (*j.*) Analysis of limestone, complex sulphide-ores, and silicous rocks.

Text-books: Park's "Assaying and Practical Chemistry"; Beringer's "Assaying.".

Metallurgy of Gold and Silver.—(*a.*) Crushing machinery. (*b.*) Concentrating machinery. (*c.*) Amalgamation processes. (*d.*) Chlorination and bromination processes. (*e.*) Cyanide process. (*f.*) Miscellaneous lixiviation processes. (*g.*) Smelting processes. (*h.*) Roasting- and smelting-furnaces. (*i.*) Chemistry of the cyanide, chlorination, and other processes.

Text-books: Park's "Cyanide Process"; Rose's "Metallurgy of Gold"; Louis's Gold-milling.

Drawing.—(*a.*) Use of drawing instruments and scales. (*b.*) Lettering. (*c.*) Elementary geometrical drawing. (*d.*) Elementary mechanical drawing. (*e.*) Plan-drawing.

Saturday Science Class.—Chemistry of the non-metallic elements oxygen, hydrogen, nitrogen, and carbon.

The school-year is divided into three terms, as follows: First term, from the first Monday in February to the 30th April; second term, 9th May to 20th August; third term, 9th September to 20th December.

In mathematics, mineralogy, geology, and drawing the fees are 5s. for each class per term; in mining, surveying, practical chemistry, assaying, and metallurgy the fees are 7s. 6d. for each class per term. In addition to the class-fees there is a membership-fee of £1 per annum.

The school-building contains five rooms—namely, lecture-room and library, laboratory, furnace-room, balance-room, and store-room. The total floor-space is about 1,800 square feet.

Sixteen students presented themselves for the annual Government examinations for schools of mines students last December, and took between them forty-one papers. Three first-class certificates were obtained, twenty-one second class, and twelve third class; while there were five failures, four of them in theoretical chemistry. Charles Moore, who did the best papers in assaying and chemistry, was awarded a gold medal, given by Mr. E. G. Banks, metallurgist to the Waihi Gold-mining Company. Thomas Thomson, the only student who took the mining and surveying papers, obtained a prize, given by myself, for proficiency in these subjects.

Last January nine of our students sat for mine-managers' and battery-superintendents' certificates, but the results of the examination are not as yet to hand. At the previous examination seven out of the eight Waihi School of Mines students who sat were successful. Four of these obtained first-class mine-managers' certificates, and three battery-superintendents' certificates. In consequence of their success a majority of the students referred to obtained almost immediate promotion from their employers.

During the year forty-one assays and analyses have been made for the public. Twenty-nine of these were for gold and silver, six for copper, and six for lead. A number of experiments were made in the laboratory in connection with the testing of cynide solutions. Experiments were also made in order to ascertain the best and quickest method of dealing with the analysis of a complex sulphide-ore, containing gold, silver, copper, lead, zinc, iron, &c.

The following three analyses may be of some interest:—(1.) Sulphide-ore from Waiorongomai: Lead, 47·08 per cent.; copper, 7·24; iron, 6·87; zinc, 0·84; sulphur, 17·28; silica, 17·11; undetermined and loss, 3·58. In addition to the above constituents the sample contained gold at the rate of 3 dwt. 6 gr. to the ton, and silver at the rate of 4 oz. 11 dwt. 1 gr. per ton.

(2.) White substance deposited in the pipes used for carrying cyanide solutions, Waihi battery: Carbonate of calcium ($CaCO_3$,) 90·90 per cent.; carbonate of iron ($FeCO_3$), 3·31;

alumina (Al_2O_3), 0·93; carbonate of manganese ($MnCO_3$), 2·12; carbonate of zinc ($ZnCO_3$), 1·54; nickel and cobalt, doubtful traces; residue insoluable in hydrochloric acid (mainly silica), 1·40.

(3.) Hard but slightly decomposed andesite, from No. 5 level, Waihi Mine: Silica (SiO_2), 61·69 per cent.; alumina (Al_2O_3), 16·21; protoxide of iron (FeO), 4·74; oxide of calcium (CaO), 3·40; oxide of magnesium (MgO), 2·09; oxide of potassium (K_2O), 1·52; oxide of sodium (Na_2O), 4·81; loss on ignition, 5·25.

A considerable number of minerals and fossils have, as in past years, been presented to the school by various donors. Our thanks are particularly due to the Rev. Joseph Campbell, M.A., F.G.S., who has given a large number of European, Australian, and New Zealand minerals and fossils; to Mr. James Park, F.G.S., for a collection of characteristic New Zealand Triassic fossils, and a number of mineral specimens; and to Mr. Maurice Casey, of Auckland, for a collection of ores from New Caledonia. Owing mainly to these and other gifts made from time to time, the school has become possessed of fairly good collections of minerals and fossils, but at present we have no proper accommodation for them, and much of their value is therefore lost. I hope it will not be long before the committee see their way towards adding a room to be used as a museum to the present building.

No additions have been made to the school-buildings during the past year, but the Committee have added to the apparatus and laboratory-fittings as far as the limited means at their command would allow. A special grant from the Mines Department enabled the Committee to procure a small but useful library, and to fence and plant the school-grounds.

It gives me great pleasure to thank the Committee for the great attention they have given to the requirements of the school, especially the financial part, and for their willing assistance in various matters connected with the working of the school. I have also to thank the assistant lecturer, Mr. K. M. Barrance (who is about to take up a similar position at the Thames School of Mines) for the energetic and faithful performance of his duties, and Mr. A. B. Hardinge, who during the past two months has given his services as drawing-master.

In conclusion, I am glad to say that the Waihi School of Mines has continued to progress during the past twelve months, and will, I am confident, not fail to make similar progress during the coming year.

NELSON SCHOOL OF MINES.

Mr. W. F. Worley, Instructor, reports as follows:—

Blowpipe Analysis Classes.

Two classes for the study of this subject met weekly throughout the year. Class A consisted of sixteen boys, who had had no previous experience in the work. Class B consisted of eleven boys, who had received one or more years' previous instruction in the subject. In Class A manipulative skill with the blowpipe, and the testing of such minerals as are easily identified by simple blowpipe-tests, was all that was attempted. In Class B the elements of mineralogy were taught, and the blowpipe-work extended so as to include the testing of all the common ores of commerce. By the end of the year most of the boys in this class were able to identify any simple common ore, and one or two of the brighter boys could test successfully fairly complex ores containing three or four elements. All the boys in this class were taught to pan-off a dish of washdirt, and to test quartz for gold by grinding and panning. Both classes were taken on to the Dun Mountain mineral-belt to collect specimens of ores and rocks, and some of the specimens thus gathered were afterwards tested in the class.

An examination in blowpipe-analysis was held at the close of the year's work. Nine boys entered for the examination, and five of them succeeded in passing. Six test-substances, all differently marked, were used at the examination, and at least four of these had to be named correctly to secure a pass.

Assaying.

During the year thirty-three assays and tests were made for the public. Two of these were samples of tailings from the Golden Blocks Mine, the rest being new finds of quartz. Three samples of quartz brought from Collingwood yielded 6 oz., 9 oz., and 28 oz. of gold per ton respectively, and free gold could be easily seen in some of the stone. When, however, fresh samples were obtained from the same locality, by persons not the original prospectors, the assay results were nil. Some more samples were obtained from the same spot, and they also proved barren. How the gold got into the first samples is an unsolved problem.

Miscellaneous Tests.

In the course of the year several qualitative tests were made for the public, but only a few of these were recorded. One of them, however, is of special interest. This was a test to find out how much manure is likely to be washed out of soil by heavy rains. Some land had been planted with potatoes, and heavily manured with artificial manures, consisting of bone superphosphate, nitrate of potash, and lime. After the application of these manures heavy rains set in, and it was feared that a good deal of the manure would be washed away. Some experiments were therefore made to ascertain how much manure is likely to be washed out of soil by heavy rains. A large flower-pot was filled with loamy soil, and the soil was afterwards manured with 20 grammes of superphosphates, 10 grammes of nitre, and 15 grammes of lime. One litre of water was then passed through the soil, and the water tested for the amount of solids held in solution, only small quantities of the water being used for the purpose. It was found that out of 45 grammes of manure added to the soil only 5 grammes had been washed out of the soil by an amount of water that would represent a very heavy rainfall. The remaining portion of the water was then passed

ten times in succession through the flower-pot, and the water again tested. This time it was found that the water contained *less* solids in solution, showing clearly that the soil had exerted a retentive influence over even perfectly soluble manures. One expected from these experiments that at least all the nitre would have been washed away, but such certainly was not the case. Whether the lime had anything to do with fixing the nitre in the soil I am not prepared to say. Some further experiments to test this would be interesting. I had not time at my disposal to make a complete analysis of the solids held in solution by the water, but a careful examination convinced me that a good deal of it was organic matter that was in the soil before the manures were added. Reactions for soda, potash, and lime were readily obtained from a concentrated portion of the water, but the reaction for sulphates was only slight, showing that not much of the lime-part of the superphosphate had been washed away. A drop of the concentrated water was evaporated to dryness and examined under the microscope, but nothing very definite could be made out. A few very small crystals—probably nitre—could be seen in a glutinous mass. As large quantities of chemical manures are used in New Zealand, the subject here treated is of great importance, and should be thoroughly investigated by able chemists.

CONCLUSION.

No adult classes have been held during the year, owing to my time being taken up with agricultural experiments. A suitable room for holding adult classes is badly needed. I intend to build one myself as soon as I have the means. My thanks are due to the town School Committee for the use of the schoolroom on two afternoons a week for the blowpipe classes.

REEFTON SCHOOL OF MINES.

Mr. J. W. Lee, Director, reports:—

Classes have been held regularly throughout the year, and satisfactory progress has been attained. A number of students presented themselves in January, 1901, for examination as battery superintendents and mine-managers, but, unfortunately, results are not, as yet, available.

At present the number of individual attending students is thirty, with good prospects of an increase very shortly. During the year the average attendance has been as under:—

Class.	Number of Students.	Average Attendance.
Mining and mathematics	... 18	15
Surveying	... 19	15
Theoretical and practical chemistry	... 12	8
Practical assaying	... 12	9

The instruction given in each class has been as follows:—

Mining (including Mining Geology).—Construction and timbering of shafts, tunnels, stopes, &c.; hauling and winding; strength of materials; blasting and explosives; mineral deposits, their nature, occurrence, and classification; metalliferous ores, occurrence and identification; rocks and rock-forming minerals described; kinds of strata in which metallic ores occur; faults and fault rules; tapping water in mines; dams.

Some work has also been done in mine-ventilation, mine-drainage, and pumping-appliances, steam, steam-engines and boilers.

Mathematics.—Arithmetic, comprising the simple rules, weights and measures, proportion, vulgar and decimal fractions, square and cube roots, averages and percentage, timber measurement, practical questions in mensuration of plane surfaces, as circles, triangles, &c.; solidity of bodies; mine accounts—wages in mine and battery, time-sheets, costs per ton, statements, &c.

Text books: H. A. Gordon's "Mining and Engineering," C. Pamely's "Colliery Managers' Handbook."

Surveying.—Logarithms, plane trigonometry, chaining, traversing, recording in field-book, and computing by rectangular co-ordinates of practical field-work; computation of omitted lines and areas; reduction of magnetic to true meridian; adjustments, care, and uses of theodolite, compass, and miners' dial; methods of connecting underground and surface traverses, plotting plans and sections; problems in mine-surveying *re* dip, underlie and strike of reefs, also cross cuts or tunnels, and shafts required to intersect reefs and beds at certain positions; methods of underground traversing; dialling.

The Y theodolite granted to the school in January last by the Hon. the Minister for Mines has been a most useful instrument for this class; most of the students are now fairly proficient in instrumental work, and can accomplish very good work with it.

Theoretical Ch mistry.—General principles; atoms; molecules; quantivalence; combining weights, &c.; non-metallic elements; metric system of weights and measures; chemical formulæ and percentage compositions; chemical combination, salts, acids, bases, radicals, and their physical and chemical properties.

Text-books: Bloxham's "Chemistry," Lupton's "Chemical Arithmetic."

Practical Chemistry.—Reagents; qualitative tests for metals; group separations and detail separations, proceeding step by step to simple analysis; principles of volumetric analysis and processes connected thereto; standard normal solutions; tests of potassium-cyanide solutions; manipulation and laboratory operations. All instruction is shown and illustrated by practical experiment, students being encouraged to verify results by personal observation and experiments.

Practical Assaying.—Fluxes and principles of fluxing; reagents used; furnaces; dry assays of gold, silver, lead, tin, mercury, and antimony ores; problems and calculations; wet assays and tests of metalliferous minerals and ores.

Metallurgy of Gold and Silver.—Special classes in this subject have been held, for the benefit of students preparing for battery superintendents' examinations, dealing with the following

branches: Crushing and concentrating machinery; amalgamation of gold and silver ores; use and properties of mercury, with descriptions of machinery and appliances used for amalgamation; chlorination and cyanide processes; other lixiviation processes; testing and assaying ores; chemistry of the various processes.

Text-books: Park's "Practical Chemistry and Assaying"; Rose's "Metallurgy of Gold"; Eissler's "Gold" and "Silver"; Louis's "Gold Milling"; Park's "Cyanide Process."

In connection with the chemistry and assaying classes, the school is urgently in need of a larger stock of materials and apparatus, which, owing to, at present, limited funds, cannot be obtained.

Class-fees are: Mining, 7s. 6d.; surveying, 5s.; chemistry, assaying, and metallurgy of gold and silver, each 7s. 6d. per quarter. No members' fees are required from students, but any persons other than students can become members on payment of a fee of 10s.

The number of assays performed during the year has been forty, berdan tests, fifteen. A number of samples of various minerals have been submitted for analysis, but no results of special interest have been obtained.

In conclusion, I may remark that a renewed and lively interest is felt in the district in the school. Most of the present students have attended since I reopened the school in December, 1899, the majority of them coming considerable distances to attend classes, often at great personal inconvenience. The fact of the mines and batteries, in which students are mostly employed, being situate at a distance from the school, is no doubt a drawback to its work.

A branch class at the Inkerman mines is at present inaugurated, under control of Mr. B. Sutherland, which I purpose visiting at intervals as circumstances permit. Other classes could be instituted in different localities, under suitable control, if the means at my disposal were adequate. Such classes would certainly augment the students' roll, and, further, assist the school funds in a substantial manner.

OTAGO SCHOOL OF MINES.

(In connection with the University of Otago, Dunedin.)

Mr. D. B. Waters, A.O.S.M., Acting Director, reports:—

The total number of students in attendance was fifty-nine, made up as follows: Forty-six were regular students taking full session's work, the other thirteen were only taking special classes, and of these latter seven were attending an evening class in assaying. Out of the forty-six students in full attendance, ten entered the school for the first time, the remainder being students of one, two, or three years' standing.

The following table shows the attendance at the various classes, and also the results of the annual examinations.

Subjects.	Attendance.	Results of Examinations.			
		First Class.	Second Class.	Third Class.	Failures.
University classes—					
Mathematics	...	1	3	5	...
Theoretical mechanics	...	...	1	7	...
Theoretical physics	...	...	2	5	...
Practical physics	...	1	5	3	...
Theoretical chemistry	...	4	4	6	...
Practical chemistry	...	5	3	2	...
School of Mines classes—					
Mining, first	13	9	3	1	...
Mining geology	12	3	6	3	...
General geology	13	7	3	3	...
Mineralogy	8	2	2	5	1
Petrography	11	...	6	5	...
Chemical analysis	18	7	8	3	...
Metallurgy, first	13	4	4	5	...
Metallurgy, second	13	2	3	3	5
Assaying, first	9	5	1	3	...
Assaying, second	15	4	4	7	...
Blowpipe analysis	7	3	1	2	1
Surveying, first	7	2	...	5	...
Surveying, second	11	11	...	...	...
Applied mechanics	14	3	6	5	...
Palæontology	2	2	...	...	...
Drawing—					
Model	11	3	6	2	...
Plane geometry	12	5	2	5	...
Solid geometry	9	3	4	2	...
Machine drawing	5	2	1	2	...

The attendance at all the classes in the School of Mines building was very satisfactory.

With the close of this session a large number of students have completed the full course, seventeen students having passed all the examinations entitling them to receive one or more of the diplomas or final certificates granted by the University. The following is a list of those students who handed in their class certificates for inspection:—Allen, Herbert Edmund; Barron, William Ernest; Beilby, Charles Spurgeon; Buckland, Arthur Channing; Buckland, Herbert John; Fisher, Norman Richard; Gow, George Aubery; Lusk, Basil Roberton; McDonald, James Baillie; Mosley, Oswald; Riddell, Walter Alexander; Royse, George H.; Street, Sydney Parker; Thomson, George Watt; Watt, William Shand; Wilkie, James Macgregor.

Applications for diplomas or final certificates were also received from the following former students of the school:—Adams, Ormsby Gore; Campbell, Colin; de Lautour, Arthur Edward.

The following students having fulfilled all the conditions entitling them to diplomas or final certificates, have since had them granted, as shown by this table:—Associateship in Mining: Allen, H. E.; Barron, W. E.; Beilby, C. S.; Buckland, A. C.; Buckland, H. J.; de Latour, A. E.; Lusk, B. R.; Riddell, W. A.; Royse, G. H.; Street, S. P.; Thomson, G. W.; Watt, W. S.; Wilkie, J. M. Associateship in Metallurgy: Campbell, Colin. Certificate of Metallurgical Chemist and Assayer: Allan, H. E.; Barron, W. E.; Beilby, C. S.; Buckland, A. C.; Buckland, H. J.; Campbell, C.; Fisher, N. R.; Gow, G. A.; Lusk, B. R.; Macdonald, J. B.; Mosley, O.; Riddell, W. A.; Royse, G. H.; Street, S. P.; Thomson, G. W.; Watt, W. S.; Wilkie, J. M. Certificate of Land and Mine Surveyor; Adams, Ormsby, G.

During last session many changes were made in the teaching-staff. Owing to the illness of the late Professor Ulrich at the beginning of the session it was necessary to appoint temporary lecturers to overtake his work, and on account of the late professor's death on the 26th May, it was necessary to retain the services of these lecturers to the end of the session. The classes in mineralogy and petrography were taken by Mr. W. S. Watt, one of the senior students, and those of mining and mining geology by Mr. Murray Russell, A.O.S.M., a former student of the School of Mines. Mr. Watt had shown special ability as a student in the subjects of mineralogy and petrography, and during the previous session had acted as demonstrator to the late Professor Ulrich in petrography, so that he was well qualified to carry on the classes. Mr. Murray Russell since leaving the school has had a considerable amount of practical mining experience which enabled him to take up and carry on the mining and mining geology classes successfully. Both of these gentlemen carried out their duties with zeal and a desire to uphold the standard set by the late Professor Ulrich. The position of lecturer on assaying and metallurgy having become vacant, through the resignation of Mr. F. B. Stephens, A.O.S.M., was filled by the appointment of Mr. D. B. Waters, A.O.S.M. Mr. Stephens had held the position for a period of three years, and resigned to take the directorship of the Stawell School of Mines, Victoria. Mr. Walter Cutten, who had held the lectureship in applied mechanics almost continuously since 1887, also found it necessary to resign owing to the requirements of his own business. His place was filled by the appointment of Mr. J. E. L. Cull, of the Canterbury School of Engineering. The other classes—viz., general geology and snrveying were carried on as usual by Dr. Don and Mr. Matthew Begg. Dr. Don, with his well known energy and interest in his work, took his class for several field excursions, including one into the Oamaru district, extending over three days. Mr. Begg also took the opportunity during the mid-winter recess of taking the senior class out daily for continuous practical work, this being in addition to the regular weekly class held throughout the whole session.

Owing to the death of the late Director of the school, Professor G. H. F. Ulrich, the end of the present session will mark a distinctive point in the history of the School of Mines. It might be as well, therefore, to place on record a very brief outline of the work and results attained since the inception of the school when Professor Ulrich was appointed in 1877. Though Professor Ulrich was appointed in 1877 and a curriculum of work drawn up, it was not carried out in its entirety for some years. The more important subjects were carried on by Professors Ulrich and Black, and in 1887 the full course was provided for, by the appointments of Messrs. L. O. Beal, W. Cutten, and G. J. Binns as lecturers on surveying, applied mechanics, and general geology respectively. In 1891 the staff of the school was again enlarged by the appointment of a permanent lecturer on assaying and metallurgy, Mr. D. Wilkinson, A.R.S.M., taking over these subjects rom Professor Black, a new building having in the meantime been erected for the increased requi ements of the school. The attendance at the Mining School was small for some years, and up to 1889 only five students had gone through a full course entitling them to a diploma or a final certificate. In that year, however, the number of students increased considerably, the total number in regular attendance being twelve. Since then the numbers have gone on increasing, and for the last two years the number of regular students has been forty-three and forty-six respectively. In regard to results, the number of diplomas and final certificates granted to date is as follows: Associateship—Mining division, 45; metallurgical division, 14; geology division, 10. Certificate—Chemist and assayer, 50; land and mine surveyor, 14. The actual number of individual students who have passed through the school, and obtained either a diploma or a final certificate, is sixty-two. As showing the success of the standard of teaching of the curriculum prepared by the late Professor Ulrich, out of these sixty-two associates, &c., of the School of Mines, eleven are at present in charge of, or on the staff of ten schools of mines in six colonies—viz., Tasmania, Victoria, South Australia, Western Australia, Queensland, and New Zealand. Besides these in teaching positions, nearly the whole of those who left the school up to the end of 1899 (forty-five in number) hold responsible positions in many of the various branches of mining-work, and in many countries.

Regretting as I do the incident which has necessitated my making up this report, it has been a pleasing duty to tabulate and place on record the results obtained by the school since its inception, and under the directorship of the late Professor Ulrich. I wish also to express my thanks to the other members of the staff who assisted me in every way in carrying on the work of the school.

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
1990–1901 ...	866 10 11	56 3 4	98	77 7 10	1,098 2 1
Totals ...	6,854 11 4	1,190 6 5	448	14,446 19 8	22,939 17 5

The above statement shows the amount expended on the different schools of mines throughout the colony; but, in addition to this, the sum of £8,553 6s. 2d. has to be added, as that has been paid to the School of Mines attached to the University of Otago, £500 being paid last year towards maintaining the school, which makes the total expenditure up to the 31st March last to be £31,493 3s. 7d. This expenditure has extended over a period of sixteen years.

PRODUCTION OF GOLD AND SILVER.

In the North Island the production of precious metals is confined as yet to the operations of quartz-mines, and the subsequent treatment of the ore. Traces of loose gold between Te Puke and Roturua have been followed up, and a bed of alluvial deposit containing coarse gold of good quality has been discovered. This is referred to in the reports of Mr. Roberts (Warden) and Mr. Coutts (Inspector of Mines).

Gold-mining in the Middle Island comprises quartz-reefing and every variety of alluvial-mining. During the last year much interest has been centred in dredging-operations—to (in a few instances) the neglect of other systems of work better adapted for the treatment of some areas—and the feverish haste with which, from one to two years ago, many people invested in dredging-claims insufficiently prospected, is now being felt in the reaction.

The following comparative statements show the quantity and value of gold entered for exportation for the last two calendar and financial years:—

Name of District.	Year ended 31st December, 1900.		Year ended 31st December, 1899.		Increase for 1900.	Decrease for 1900.
	Oz.	Value.	Oz.	Value.	Oz.	Oz.
		£		£		
Auckland ...	166,342	605,398	168,769	624,737	...	2,427
Marlborough ...	535	2,147	...	...	535	...
Nelson	3,718	14,605	419	1,571	3,299	...
West Coast ...	73,923	295,733	90,031	360,149	...	16,108
Otago	129,075	521,629	130,311	526,605	...	1,236
Canterbury ...	23	90	28	111	...	5
Totals ...	373,616	1,439,602	389,558	1,513,173	...	15,942

Name of District.	Year ended 31st March, 1901.		Year ended 31st March, 1900.		Increase for 1901.	Decrease for 1901.
	Oz.	Value.	Oz.	Value.	Oz.	Oz.
		£		£		
Auckland ...	166,049	604,018	168,836	625,207	...	2,787
Marlborough ...	247	970	344	1,382	...	97
Nelson	5,126	19,238	2,589	10,251	2,537	...
West Coast ...	85,779	343,728	94,081	376,076	...	8,302
Otago	135,753	548,444	126,791	513,341	8,962	...
Canterbury ...	22	84	22	87	...	...
Totals ...	392,976	1,516,482	392,663	1,526,344	313	...

QUARTZ-MINING.

I have to report that a considerable amount of prospecting and development work has been accomplished during the year in various parts of the colony. On the other hand, I have to report the stoppage of several mines.

In the North Island operations of an important character, having for their object the development of the several mines and properties, have been carried out vigorously in several instances, and at my visit to the Hauraki Goldfields in August and September last, I noted with much pleasure the manner in which some of the large mines were being opened up and the provisions which were being made for the treatment of material. As the several mines are fully described in the report of Mr. Coutts, Inspector of Mines, it will be sufficient for me to mention the principal features at some of the mines which I visited.

At Waihi, where the most extensive quartz-mining operations in the colony are carried on, considerable progress has been made during the year. The Waihi Gold-mining Company have been engaged in deepening their Nos. 1, 2, and 3 shafts, and have sunk two other shafts, Nos. 4 and 5. The reefs in this company's property are numerous, and mostly of large size. One, the Martha lode, sometimes attains a width of 60 ft.; others, the Empire and Welcome, vary somewhat up to 30 ft. in width. The latter reef branches, and thus forms the Victoria lode. The Albert, Prince, and Princess reefs are also of good size, and shortly after I visited the mine another reef of considerable width was cut. The general trend of the reefs is north-east and south-west, with an underlie to the south-east as a rule, but subject to local variation, some of the reefs dipping in an opposite direction as far as proved. In regard to this an opinion has been expressed to the effect that what appear as separate reefs may really be splits or divisions, with "horses" of mullock intervening. At No. 5 level the continuity of the reef-line has been proved for nearly 4,000 ft. To the west a slide cuts the reefs out, and another slide is seen near the eastern end; but as this runs to some extent in the direction of the strike of the reef system, crossing at an obtuse angle, it appears probable that the reefs will carry for a considerable distance before being cut out. A large amount of stone is opened up in the mine, and the battery-power now consists of 290 stamps—viz., 90 at Waihi and 200 at the Victoria battery, Waikino, the latter being connected with the mines by a narrow-gauge railway.

The Union-Waihi and the Waihi-Silverton Mines are now amalgamated, and are under one management. At the former mine there are three distinct lines of reef, one of which is opened up at different levels, and varies in width up to 8 ft., its average being probably a little over 4 ft. It is also variable in quality. At my visit the shaft was being deepened, and a very promising-looking reef cut. The strike of the reef system is about north-east by east and south-west by west, that at the Waihi-Silverton Mine being practically north and south, and the reefs almost vertical. From observation it looks as though the reefs of the two mines may junction. Sinking was also in progress at the latter mine, and the joint properties being developed so as to produce a considerable output of ore, for the treatment of which the Waihi-Silverton battery has been remodelled and arranged for wet crushing.

At the Grand Junction Mine, Waihi, considerable difficulties have had to be encountered owing to water. This mine was not a producer of quartz during the year.

Other properties in the district have been or are being exploited. None of these can be put on the list of productive mines for the year.

The Waitekauri Gold-mining Company's mines are at Golden Cross, about five miles above Waitekauri Township, the principal battery being at the latter place. Two shafts have been sunk at Golden Cross, No. 1 shaft being the principal opening. The main lode or reef sometimes attains a width of 50 ft., its strike being north-north-east and south-south-west. The shafts are on opposite sides of the reef. Another reef, the Southern Cross, is thought to be a loop or branch off the main lode. It varies in width, and shows a good assay value. With a view to the development of the property on a good scale, a long low-level adit-tunnel is being constructed, which will allow of stone being produced and drainage effected down to the present working-level without winding and pumping machinery, thus rendering the latter available for the exploitation of deeper levels. When this tunnel is connected with No. 1 shaft it is, I understand, to be continued west of the main lode, to thoroughly test and drain the entire reef system down to that level. Other development-work is also in progress.

In this company's mine a considerable quantity of calcite (and also some aragonite) is met with. It was found that with the process of dry crushing only 40 per cent. of the bullion could be extracted, the reason assigned being that where the calcite was associated with the ore the burning set free the CO_2 from the calcite, thus producing lime, and this, amalgamating with the clayey matter, formed a strong cement sufficient to bind the ore to some extent, and so prevent the free penetration and action of the cyanide solution. Wet crushing has been adopted in the main, there being a plant of forty heads of 1,050 lb. stamps and twenty-nine cyanide-vats at Waitekauri, and a small plant (ten heads) for dry crushing and cyaniding at the mine.

Karangahake is now an important part of the Upper Thames Mining District. During the year considerable developments have been effected at the New Zealand Crown, the Woodstock, and the New Zealand Talisman and Talisman Extended Mines. These two latter are now amalgamated under the title of "The Talisman Consolidated (Limited)," and the system of dry crushing hitherto in vogue is being superseded by that of wet crushing, a battery of forty stamps, with amalgamating, concentrating, and cyanide plants, being in course of erection at my visit.

At the Crown Mine, Karangahake, recent improvements consist in the sinking of a new underlay shaft on the reef, and opening out on the latter, which is of considerable width (often attaining 20 ft.), and lies at an angle of about 45°. The ore has a value of about £2 7s. per ton. Hoisting and pumping machinery have been erected at this shaft, the power being compressed air, generated near the mouth of the mine by a two-stage compressor, built on the Reidler system by Messrs. Fraser and Chalmers. Compressed air is also used for working rock-drills in the mine. The compressor is worked by a 10 ft. diameter Pelton wheel, under a pressure of water due to a head of 80 ft., or, say, 34 lb. per square inch.

Improvements in the plant connected with the Woodstock Company's battery have been effected during the year, also a shaft for the purpose of winning the reefs at deeper levels has been started. Other mining operations on a small scale are conducted in the locality. I understand recent discoveries at the Imperial Mine are of a satisfactory character, and that it is intended to erect machinery to treat the ore.

At Waiorongomai, near Te Aroha, Mr. E. H. Hardy is working the Empire and New Find Nos. 1 and 2. The reef worked is nearly vertical, its course being a little east of north and west of south. The ground is hard and costly to work, and only a portion of the reef is extracted—viz., a band of about 4 ft. wide near the middle, the value of which is about £2 5s. per ton. The battery comprises a small but very complete plant, consisting of ten stamps, six berdans, one Watson and Denny and one Fraser amalgamating-pans, one Union vanner, one Wilfley concentrator, and cyanide appliances.

At the Thames mining matters have been very quiet during a good portion of the year. Much interest was taken, and considerable expectation centred, in the pumping and sinking operations at the Thames-Hauraki Company's shaft, but owing to financial considerations the work here was suspended. Owing to this the question as to the existence of payable ground at deeper levels than have yet been reached is still unsettled. The circumstance is greatly regretted, and especially so in face of the fact that a very substantial subsidy has already been paid by the Government as a contribution towards the erection of heavy pumping machinery, and the prospecting of the ground at depth (by sinking), with a view to the further development of this part of the goldfield.

Mines in the immediate neighbourhood—viz., the May Queen (Hauraki), Moanataiari, Waiotahi, Kuranui-Caledonian, Fame and Fortune, New Whau, as well as those at Tapu Creek, Waiomo Creek, Tararu Creek, &c., were visited. They are fully reported on by Mr. Coutts, Inspector of Mines.

I cannot say I was very favourably impressed with the prospects of mining in the locality as regards the future, unless ground of a remunerative character is found at greater depth. In the interests of the industry, and of the district generally, it appears most desirable that the sinking of the Thames-Hauraki shaft should be resumed as quickly as possible, and carried down to a depth which will, once and for all time, settle the question as to the existence or otherwise of payable reefs below the line at which operations have hitherto stopped, and which forms the top of what has been described as "an unproductive zone."

At Coromandel mining matters are also very dull. It is well known that much of the ground in this locality is patchy, gold being found in pockets of considerable richness rather than in general distribution through the quartz. Owing to this feature narrow leaders and stringers have been worked on to a considerable extent, and quality (specimen stone) rather than quantity (general quartz) sought after. Near the township the Hauraki, Golden Pah, Hauraki Main Lode, Bunker's Hill, Blagrove's Freehold, Kapanga, Scotty's, Hauraki, and Success Mines were all working at my visit. On inspection of the underground workings of several mines I found that the prospects of some of them were not of an encouraging character so far as the ground had been proved. Since then at least four of the mines named have suspended operations, but it is quite possible that under a scheme of amalgamation and concentration of operations some of them may be again worked.

The Hauraki Freehold Gold-mining Company have a considerable area of freehold property on which comparatively little work has as yet been done, and this will afford a good field for prospecting. The old Welcome Find shaft has been reopened for the purpose of affording facilities for the development of the field. Taken as a whole this company's ground appears to present the greatest local potentialities.

At Tokatea and in the neighbourhood of Kennedy Bay prospects appear fairly good. The Royal Oak of Hauraki Mine, Tokatea, has been put under new management, and I understand that developments of a somewhat comprehensive character are being undertaken. The Four-in-hand Mine, near Kennedy Bay, has been successful, and gives promise of a good future. The stone is yielding a return of, approximately, £4 15s. per ton.

By far the largest undertaking in the Coromandel district is that of the Kauri Gold Estates Company at Opitonui. Here there are three mines—viz., Lannigan's, Maiden, and Carvall—and three distinct reefs, almost vertical, and varying in thickness up to a maximum of about 8 ft. The stone is of low grade. Taken altogether the reef system appears well defined, and I was informed that sinking operations were about to be commenced with the object of proving and opening out the ground at deeper levels than those to which the shafts have already been sunk. A very complete steam-driven battery plant, consisting of forty stamps of 1,150 lb. each, amalgamating-plates, and cyanide plant, has been erected, and a filter-press for the treatment of slimes is being added. Hitherto the value obtained per ton of stone treated has been about £1 14s.; but it is expected that by the addition of the extra plant a greater percentage of gold and silver will be extracted and the returns per ton enhanced correspondingly. A narrow-gauge railway connects the mines and battery, and is extended to the harbour at Whangapoua.

Mining at Kuaotunu has practically been at a standstill owing to the cessation of operations at Mariposa Mine and the limited amount of work done at the Kapai-Vermont Mine. As these two properties join, and the lowest level of the latter is entered from the adit-tunnel of the former—both mines being on the same line of reef—the recent amalgamation of the two ought to prove a decided advantage. At my visit I found that a vertical shaft had been sunk from the level in the Mariposa Mine to a depth of 130 ft. From information supplied me by the former manager I learned that it was opened out at 110 ft. and the reef driven on in both directions for a total length of nearly 500 ft. Although the reef was said to be poor at the shaft, it was reported to be improving in the faces of this lower level, the width being given at from 3 ft. to 4 ft. In the worked ground above it is said to have varied from 1 ft. 6 in. to over 10 ft. wide, with a north and south strike and an underlay averaging about 70° from the horizontal, the value of the ore being fully £2 per ton. In the Kapai-Vermont Mine the low level was being extended. The reef is variable up to 10 ft. in width, and at my visit was quite narrow at the face, but appeared to be making again. This joint property appears to have the possibilities of a good future if it is properly developed and worked on a comprehensive scale.

The discovery of gold-bearing reefs at Gumtown has caused no little interest to be centred in that locality. So far operations have consisted chiefly of prospecting, and the results are said to be very encouraging. No great progress can be made until roads are formed to enable machinery to be conveyed to the claims. I regret that, owing to other engagements, I was unable to visit this locality, the Barrier Island reefs and several other mines on the northern goldfields.

Turning to the Middle Island, the principal centre of quartz-mining is the Reefton district, where operations, having for their object the development of several properties on a fairly large scale, have been under way during the last three or four years, and are still in progress. Notable instances are the Progress, Wealth of Nations, Golden Fleece, Keep-it-Dark, and New Inkerman Mines, and, as a result of the operations of the last few years, this locality may be looked to for steady returns. Success has attended the work at a few other mines in the district, but with these exceptions the reports to hand are not of a very encouraging character, and operations are suspended at the Alpine Extended (Lyell), Just-in-Time (Boatman's), Cumberland, and some small mines. Encouraging results are reported from the two mines at Taitapu (Collingwood), and quartz-mining operations are now being carried on at the Britannia Mine, near Waimangaroa (Westport), on a small scale.

In the Marlborough district there are two quartz-mining properties situated in Top Valley, a tributary of the Wairau River. At one of these, the Jubilee, operations have been suspended for some time, but are about to be resumed. The other mine, named the "Wellington," is being opened up on the Dundee reef and a battery plant of ten heads of stamps erected. The general trend of the reef is north-west and south-east, with a dip or underlay to the east. So far as proved, the reef varies from 1 ft. 8 in. to 3 ft. in width, it is fairly oxidized, but carries a proportion of foreign minerals and may require concentration. At my visit I was favourably impressed with the character of the stone, &c., but owing to the small amount of prospecting done in the locality I am not in a position to give much information as to the probabilities of the extent to which work may be undertaken in the future. At the same time, I quite think the locality is well worth the attention of intelligent and experienced prospectors.

In his report on the quartz-mines of his district, Mr. Tennent, Inspector of Mines for Marlborough, Nelson, and Westland, gives some interesting details of the work done at the several mines.

Quartz-mining in the South (Otago and Southland) is a small factor in the production of gold in comparison with the various forms of alluvial mining which are carried on throughout that district.

At the old and well-known Phœnix Mine at Bullendale—Achilles Gold-mines (Limited)—considerable sums of money have been spent during the last two or three years in developments, improvements to plant, &c., and, although the reef is proved to live down to a considerable depth, the indications, so far as recent work has gone, do not appear immediately promising. One feature of the reefs in the Wakatipu district, and indeed throughout Otago generally, is that rich and poor stone alternate, the average yield of gold often being satisfactory.

Near Skipper's Point, on the Shotover River, the Shotover Quartz-mining Company have been driving a low-level tunnel to intersect a block of quartz which was known to exist below the level formerly worked (Gallant Tipperary Mine). This has, I understand, been cut at a distance of 1,316 ft., two other blocks of quartz being cut through by the tunnel. The main block is reported to be of good width and quality.

At Macetown, the Premier Mine—Glenrock Consolidated (Limited)—is the only place at which quartz-mining is being carried on. The incline tunnel has been continued on the grade at which the reef is found to floor. This tunnel forms the winning heading of the mine, and from it the reef

is worked. In common with other parts of the Wakatipu district, the reef is variable and patchy, but this feature has not prevented the mine from more than paying its way. There is nothing fresh to report in this part of the district. In my report of last year a full account was given of the reefs of this locality, and I am of opinion that if these were systematically opened out on a fairly large scale, and the most approved labour and gold-saving arrangements adopted, payable results would be obtained.

The Bendigo reefs on the Dunstan Range (Cromwell Proprietary) have been practically idle for some time. Very rich returns were obtained here some years ago from mines worked on a small scale, and I cannot but think that if the ground were worked somewhat on the lines hinted at in my report of 1898, the undertaking could be made a very profitable one. The closing remarks on the Macetown reefs are, I think, equally applicable in the case of the Bendigo.

On the Carrick Range very little is being done, the mines here being on quite a small scale, but on the Old-man Range the two mines above Bald Hill Flat continue to yield payable returns. In the district comprising Mount Highlay, Macrae's, Nenthorn, and Hindon there are a few small mines at work.

At Waipori, the O.P.Q. Waipori Gold-mines (Limited) have got their mine into good working-order. During the year a crosscut was driven west from the lowest level for a distance of 37 ft., when a vein of quartz, which on being opened up has been found to be 10 ft. in width in places, was cut. As this vein was also cut at 2 ft. from the ground, being stoped out at a distance of 60 ft. above the level, it naturally has the appearance of being a branch from the main reef. The whole of the quartz opened out at the low level is reported to be good, and this has given encouragement to the company, who intend to sink the shaft 150 ft. deeper and open up the reef at a lower level. From the 80 ft. level a winze 50 ft. in depth has proved the quartz to increase in thickness from 1 ft. 3 in. to 8 ft. A considerable quantity of ore has been obtained from the adit below the level of some old workings. Additions in the shape of two Union vanners have been made to the battery, and there is a probability that the crushing plant will be increased to twenty stamps. The present stamps are 1,250 lb. in weight, and have a short, quick drop. This is found to answer very well with the class of ore which has to be treated, and a recent crushing is reported to have averaged 4½ tons per stamp per day. Gold to the value of over £9,000 has been obtained for twelve months, and a lot of concentrates are on hand which are to be sent to New South Wales for treatment. The average yield of quartz in this mine is given as 8½ dwt. of gold to the ton. The best crushing the company have yet had realised 190 oz. 11 dwt. of gold from 193 tons of stone. Occasional patches assay as high as 5 oz. to the ton.

The Bella Mine, reported by me last year as working on a small scale, has, I understand, been proved to be rich; but the ore requires chemical treatment in addition to amalgamation. In consequence of this the mine was shut down, pending arrangements for raising the capital necessary to erect plant, &c.

At Preservation Inlet a small amount of work has been done, but there are no developments of any importance to report, and the mining population has very considerably decreased.

Taking the future character of quartz-mining operations into consideration, it appears more than probable that the bulk of the output of gold from this source will be obtained from ores of low grade. This being the case, it is quite evident that the question of working-costs must receive very careful thought, and every effort made to produce the ore at the lowest possible price per ton, consistent, of course, with the safe and efficient working of mines. To work low-grade ores economically it is necessary that the output should be large, and winding and pumping operations, as well as the handling of the ore, concentrated as much as possible. To do this the old-fashioned ideas of numerous shafts, geared winding-engines of small power, light loads and slow speeds, with the necessary staff of enginemen, brace- and chamber-men, truckers, &c., comparatively idle during a good portion of their time, will have to be superseded by works laid out on a thoroughly comprehensive system. So far as my observation has yet gone, there are very few quartz-mining properties in New Zealand where the whole output could not be raised in one shift, and from one shaft, if the mine were laid out with a view to the highest possible degree of efficiency and economy. With a good roomy shaft, sunk in a suitable position, reefs intersected at convenient levels by a system of crosscuts, ore from intermediate levels tipped into passes or shoots connecting with the winding-level below (so as to obviate too many "hanging-on" places in the shaft), large cages, direct winding-engines, a plentiful supply of trucks, and winding from different levels carried on during stated hours, a very large output could easily be maintained, with a minimum cost for labour in raising and handling the ore. In illustration of this I would point to the many collieries in England where from one shaft an output of over 100 tons per hour is maintained from depths exceeding 1,000 ft. Systematic and reliable ventilation could also be provided for by means of an independent air-shaft and ventilating-fan, the shaft being sunk on the underlay if only one reef is worked, or, if vertical, connected with the reefs by means of crosscuts, and the air conveyed through the workings much in the same manner as is done in coal-seams lying at fairly high angles, and worked on the long-wall system.

The reports of the several Wardens contain much interesting and useful information concerning quartz-mining in their respective districts.

ALLUVIAL AND HYDRAULIC MINING.

The working of alluvial deposits of an auriferous character has been carried out from one end of the Middle Island to the other, and, to a limited extent, in Stewart Island also. At the present time alluvial mining is responsible for the employment of a very large number of persons, apart altogether from the system of dredging in rivers and on alluvial flats, a method which will be treated under its own heading.

In Marlborough rough alluvial gold is obtained in Top Valley Creek and tributary creeks; also in creeks from the Devil's Arm-chair (Richmond Ranges), and in tributaries of the Wairau River for a distance of some sixteen miles above the confluence of Top Valley Creek with the Wairau. Digging to a shallow depth has been carried on in a desultory fashion for some years by individual miners and small parties fossicking about the creeks which empty into the Wairau River from Blenheim upwards. A dredge is being built in Top Valley. At and in the locality of Wakamarina about two dozen miners make a living, the Gorge and Yukon Claims employing about half that number. The gold is coarse, and the ground patchy. The auriferous drift bottoms on schist rock, and much of the ground is shallow. Dredging has been commenced on the Wakamarina River. About thirty men are employed in alluvial mining in the neighbourhood of Cullensville and Mahakipawa.

The Nelson and West Coast districts contain large areas of alluvial-mining country, upon which digging and sluicing operations are actively pursued, work on an extensive scale being conducted in the localities of Collingwood, Westport, Greymouth, Kumara, Hokitika, and Ross. Work on a small scale is also in progress at many other places throughout the district. In the neighbourhood of Takaka a number of miners have found employment for several years, and I understand that a scheme is under way for working the alluvial deposits near the Bubu Stream by hydraulicking. There is an area of flat here which, if profitably auriferous, might possibly be worked to advantage by dredges.

At Parapara, near Collingwood, the operations of the Parapara Hydraulic Sluicing Company find employment for twenty men. The results obtained for the period under review appear to have been satisfactorily profitable, but from appearances some dead-work may have to be faced in the near future.

The Collingwood Goldfields Company's claim is at Quartz Ranges, some miles above Bainham. It comprises an area of considerably over 200 acres, and the head-works for the water-supply have been carried out in a most workmanlike style. The source of supply is Boulder Lake, 120 acres in extent, and which has a discharge by a narrow gorge into the Boulder River. Across this gorge a masonry dam has been built, which raises the water in the lake 17 ft., thus forming a large reservoir. After its discharge from the lake the water flows down the Boulder River for a mile and a half, and is then taken by a race four miles and a half in length to the claim. The race, which has a carrying-capacity of sixty Government heads, had to be constructed under conditions of considerable difficulty, and consists of open wood fluming—supported, where necessary, by trestle-work and trusses—for the greater part of its length. From the penstock the main pipe-line is 30 in. in diameter for some distance, then gradually diminished to 15 in. at the paddock, the service pipes being from 9 in. to 13 in. in diameter. The pressure here is due to a height of 270 ft., or, say, 117 lb. per square inch. About £15,000 has been expended. At the working-face the wash is variable in depth—the average being about 33 ft.—and consists of somewhat coarse gravels. It is said to be patchy as regards its auriferous qualities. The provision made for gold-saving consists of tail-races paved with wood blocks to some extent, and also provided with iron ripples. I am of opinion that this method is open to considerable improvement. From seventeen to twenty-five men find employment here, the number being regulated by requirements, and it is intended to open out another face of work which will employ an additional dozen men. The works have been in progress for some four years, but sluicing only commenced in November last.

In the locality of Westport, operations at the claim formerly held by the General Exploration Company have been resumed. The property is now held by a local syndicate. With the exception of the progress being made by the Virgin Flat Gold-mining Company (Limited) in the completion of their constructive work, there is practically nothing to report in the way of developments. At Addison's, Charleston, and the outlying claims around Westport alluvial mining for the year does not call for special comment.

The auriferous nature of the ground contained in the valley of the Grey River has long been recognised, and the deposits worked to some extent. At Ahaura there is a possibility of extensive sluicing operations being undertaken if trial prospecting is satisfactory. Nelson Creek gives profitable employment to a number of miners, but operations were much retarded owing to a recent scarcity of water. For the more efficient supply and storage of water for working their claim, extensions are being carried out by the Bell Hill Sluicing Company. The German Gully Company and the Roaring Meg Company have suspended operations. Sulky Gully Claim is worked by a party of Chinese.

Fifty-four men are employed in connection with the hydraulic claims at Barrytown. Extensive works are in progress for sluicing; also sluicing and elevating, and dredging is proposed. In this locality (as elsewhere on alluvial goldfields) a few miners are to be found working individually or in small parties. They are reported to make satisfactory wages.

In the locality of Kumara—including Dillmanstown and Waimea—sluicing claims, employing a gross number of 237 men, have been supplied with water from the Government races. From these claims 9,518 oz. of gold, valued at £37,120 4s., was obtained from the 1st April to the 31st December, 1900, the labour employed and amount of gold obtained from the claims supplied by each race being as under:—

Race.	Men employed.		Gold obtained.	Value of Gold.
	Maximum.	Average.		
			Oz.	£ s. d.
Waimea-Kumara	116	107·5	4,759	18,560 2 0
Callaghan's	8	7·6	423	1,649 14 0
Kumara	78	70	3,056	11,918 8 0
Waimea	35	31·5	1,280	4,992 0 0
	237	216·6	9,518	37,120 4 0

Further details of operations are given in the report of Mr. Aitken, Manager of Government water-races at Kumara.

Near Hokitika, Craig's Freehold employs twelve men. Mining is carried on by tunnel-workings. No fresh developments are reported from Kanieri; and the constructive works in connection with the large undertaking at Humphrey's Gully are still incomplete.

At Ross the Mount D'Or Sluicing Claim employs about thirty men. The ground being sluiced away forms part of a hill, and a face of 250 ft. in depth is not unusual. Gold is caught in paved tail-races much in the same manner as at Kumara. Good returns are made, and the claim gives promise of successful life for some years to come. The Ross United Claim is still worked on tribute, ten men being employed. A few small parties of men are working about the creeks and gullies. It is reported that efforts are being made to form a company to work Ross Flat on an extensive scale. Dredging has been commenced in the locality, and very satisfactory returns obtained.

Further south, good prospects are reported from Waiho and Waitaroa, and there are indications that operations may be conducted on a more extensive scale than at present.

Details of the claims in the Marlborough, Nelson, and West Coast districts will be found in the report of Mr. Tennent, Inspector of Mines.

Gold-mining in Canterbury is practically confined to a little work on the Ninety-mile Beach. Some time ago it was proposed to adopt the method of dredging, but I have not heard whether anything is being done to carry the proposal into effect.

In Otago alluvial and hydraulic mining is carried on very extensively. For many years the Maruwhenua and Livingstone Diggings supported a large community of mining-people, the Maruwhenua River (which is a proclaimed tailings-channel) and Awamoko Stream being the outlets for the *débris*. In consequence of damage to land some miles lower down, the farmers some years ago obtained an injunction restraining the miners from using the Awamoko as a tailings-channel, and thereby a considerable area of ground, said to be payably auriferous, became, to all intents and purposes, locked up. As the mining-ground at Livingstone—from which an outlet for tailings can be obtained low enough to give fall into the Maruwhenua River bed—is becoming rapidly exhausted, the miners of the district desire the proclamation of the Awamoko Stream as a tailings-channel in order that more ground may be opened out. Failing this being done, Livingstone as a mining township will soon be a place of the past. The question has been considered and duly reported on by the Rivers Commission. In connection with alluvial-mining work in the neighbourhood of Maruwhenua, the Government has arranged for necessary works for the conveyance of water by the Mountain Hut Race.

At Kyeburn Diggings hydraulic- and ground-sluicing operations are being carried out with good results.

Naseby does not present any changes of note; most of the mining here is by hydraulic sluicing and elevating. Dredging was tried, but practical tests of the two systems almost side by side went to prove that in ground such as exists here hydraulic mining gives the best results. In the districts of the Taieri River watershed around and below Naseby, mining is carried on in the localities of Gimmerburn, Patearoa, Hyde, Mount Highlay, Macrae's, &c., in a small way by individual miners and small parties, but hydraulic-sluicing claims employing a number of men are being worked at Deep Stream, Sutton (near Middlemarch), Hyde, Mount Buster, and at the Serpentine. At some of these claims hydraulic elevators are also used. Taken as a whole, the operations in this part of Otago may be said to yield fair returns.

A considerable amount of sluicing is being done in the watershed of the Manuherikia River. Operations at Idaburn and near Hill's Creek (Blackstone Hill) employ several men. At St. Bathan's several small claims are being worked, also the sluicing and elevating claims of the Scandinavian Company, the United M. and E. Company, and others. Some good returns have been reported. Mr. Ewing's deep hydraulic claim at Kildare Hill, and also the Vinegar Hill Claim are now stopped, but work is in progress at his claim at Shepherd's Flat, also at Morgan and Hughes's hydraulic-sluicing claim adjoining. The St. Bathan's sludge-channel (which is being reconstructed with Government assistance) affords a valuable outlet for the tailings from workings adjacent to the township. No active steps have yet been taken to reconstruct the lower end of Muddy Creek channel.

There is practically nothing fresh to report as regards the workings at Matakanui (including Drybread and Devonshire Diggings). Some of the hydraulic claims here have done well. Dredging has been tried, but so far success does not appear to have attended the experiment. Nearer Alexandra a limited amount of sluicing is being done; but in this, as in other portions of the Otago goldfields, the development of hydraulic mining has been practically shelved during the last two or

three years in consequence of the rage for interests in dredging ventures, the result being that dredges have been put on ground for which they were not suited.

Going up country from the confluence of the Manuherikia with the Clutha River at Alexandra, dredging is almost the only class of mining until the junction of the Clutha and Kawarau Rivers at Cromwell is reached. Continuing up the Clutha River, some alluvial workings are met with at Lowburn, and very good returns are reported. Mining here is confined to small parties, and in several instances underground workings in the auriferous drift are resorted to. A few miners are employed sluicing in the locality of Luggate, and others are scattered about Lake Wanaka, at Criffel, and up the Cardrona Valley, but no extensive work is being done.

Near Cromwell a fairly large claim is being worked adjacent to the northern bank of the Kawarau River by a party of Chinese, and several Chinamen manage to make a living in the district. There are no fresh developments to note at Bannockburn, the extent of sluicing operations being governed by the amount of head-water available. At Nevis hydraulic sluicing and elevating gives remunerative employment to two or three parties.

Some particulars were given in my report of last year respecting the new hydraulic plant for working the Arrow Flat at Arrowtown. This has been got to work. Operations have been continued at the Arrow Falls Claim, where a lot of dead-work has to be effected. Small parties are engaged in sluicing and digging further up the Arrow River, and on its tributary creeks.

On the Shotover River some hydraulic mining has been in progress at Big Beach; the deep claims of Messrs. Davis, Mr. R. Johnson, and the Skipper's Sluicing Company (Limited), have also been worked. A number of river-bed claims are now being very successfully worked by the system first adopted on this river by Messrs. A. Smith and Sons near Skipper's Point. This consists of a hydraulic jet-pump elevator, which was illustrated and fully described in the annual report of 1899, a photograph also appearing in the report of last year. Fairly extensive sluicing operations are being carried on at Moonlight, Moke Creek.

Hydraulic sluicing and elevating has recently been commenced at Glenorchy (Lake Wakatipu), and sluicing is also being carried on a few miles up the Rees River.

At Nokomai the ground held by the Nokomai Gold-mining Company (Limited), (formerly the claims of Messrs. Sew Hoy and Kum Poy, now taken over by the company), are being worked by hydraulic sluicing and elevating on an extensive scale. I understand the Lion Gold-mining Company have also got to work, after spending a considerable sum in the construction of water-races, &c., which has given employment to several men during the last four years. Owing to the severe frosts the claims here are necessarily idle during a portion of the winter. Much of the gold in this locality is nuggety, but I am of opinion that better appliances than any I have seen here are required to catch the fine gold.

Following the course of the Clutha River down country from Alexandra, hydraulic workings at Bald Hill Flat are the first of any importance. Alluvial mining has been profitably carried on here for a number of years, and during the period under review three hydraulic sluicing and elevating plants have been in operation, also two ground-sluicing claims. A dredge has also been under construction. Near Coal Creek Flat the Pleasant Valley Company work by hydraulic sluicing and elevating, and several small parties are engaged in ground-sluicing operations. The largest plant in the locality is that of the Roxburgh Amalgamated Mining and Sluicing Company (Limited). At this company's claim the thickness of ground to be moved is considerable, and, as the overburden is of a light character, it is stripped off the auriferous wash by ground-sluicing; the latter is then sluiced by water from nozzles under heavy pressure, and elevated to the sluice-boxes. From twenty to twenty-four men are employed; work is usually carried on by three shifts. To promote efficiency and safety powerful electric lights are used for night-work.

For several miles below Roxburgh there are now no claims worked on the hydraulic principle, the nearest being that of the Golden Run Company at Miller's Flat, where the method of hydraulic sluicing and elevating has proved a satisfactory and profitable method of working. This company has had a large dredge under construction during the year.

At Island Block hydraulic mining is being carried on by a Dunedin syndicate, by whom the claim and plant was purchased from the Island Block Extended Gold-mining Company. I have been informed by members of the syndicate that the question of working the flat by electrically driven dredges is under consideration. From Island Block to Beaumont a few miners are engaged on a small scale.

The Champion Gold-mining Company's claim at Beaumont has provided employment for about a dozen men, hydraulic sluicing and elevating being the method of work. The feasibility of working a portion of the claim by a dredge to be driven by hydraulic power has recently engaged the attention of the directors.

Lawrence is the business centre of a fairly large field of alluvial mining. In the immediate neighbourhood are the extensive hydraulic workings of the Blue Spur and Gabriel's Gully Consolidated Gold Company (Limited). In respect to this company's operations the general manager has furnished some particulars, from which I am enabled to give the following information: The season, owing to a prolonged winter, with only a limited snowfall, was a poor one as regards water-supply. This, together with the collapse of two of the company's dams, and also of the main drain, has reduced the amount of sluicing as compared with previous years (the latter features also tending to the dislocation of operations for a time), with the natural result that a diminished output of gold for the year has been produced at an increased cost—viz., a total of 75·88 per cent. of the value of gold won, as against a total cost of 42·82 per cent. for the previous year, the quantities, values, and expenditure being—1,878·8 oz., £7,448 17s. 5d., and £5,651 0s. 4d. respectively, as against a return of 2,753·3 oz., value £10,875 10s. 8d., obtained by an expenditure of £5,310 for the preceding twelve months. The plant, general features of the deposit, &c., have been fully described in previous reports.

Other hydraulic plants are working at Munro's Gully and Wetherstone's. At Waipori three claims are being worked on the same system, and throughout the district (including Waitahuna, Round Hill, and Manuka Creek) a considerable number of men working individually or in small parties are engaged in gold-mining on alluvial deposits.

Waikaia (formerly known as Switzer's Diggings) does not present any new features. The hydraulic claims of the Argyle Company continue, I understand, to yield satisfactory returns. The Winding Creek Gold-mining Company (Limited), whose claim is some five miles from the township, have only worked intermittently during the year owing to shortage of water-supply. Ten men are employed. Some details regarding the plant, &c., of the companies referred to have been given in previous reports. Constructive works for new hydraulic claims are in hand at Piano Flat and Gow's Creek, several miles higher up the Waikaia River than the township. From twenty to thirty European diggers and a similar number of Chinese diggers are scattered about the neighbourhood of Waikaia.

The Orepuki district continues to afford remunerative employment to a considerable number of miners, who work mostly in small parties; but, as practically all the available ground which can be operated on by the water at command appears to be taken up (and even in some instances underground mining for the auriferous drift has been resorted to), there does not appear any prospect of increased activity in gold-mining. On the contrary, as claims now being worked become exhausted other fields of labour will have to be sought. A limited amount of sluicing is being done at West Waiau. At Pahia, between Riverton and Orepuki, it is reported that some prospecting has recently been done and very good prospects obtained.

Round Hill (Southland) is still the scene of extensive hydraulic-mining operations, the Round Hill Gold-mining Company, the Ourawera Gold-mining Company, and the Smith Gold-mining Company all having been actively engaged during the year. The works of the first-named company are very extensive, and include a large reservoir and about seventy miles of races, besides a long line of pipes of large diameter. A few Chinese diggers are still to be found in the localities of Round Hill and Orepuki.

Alluvial-mining operations on a limited scale are carried on in many places in the southern district to which reference has not been specially made, and enable men to live and support their families with, in many instances, a considerable amount of comfort.

Much information in detail will be found in the reports of the Inspectors of Mines and Wardens for the several districts of the Middle Island.

DREDGE-MINING.

During the period under review—(viz., from the 31st March to the 31st December, 1900)—dredge-building has been very active. Some few large dredges have been completed and put to work, many others being under course of construction and erection, both in the West Coast and Southern districts. The excitement of the boom in connection with dredging—or perhaps it would be better to say "dredging speculation"—so general in the previous year, was experienced by its continuation for a considerable part of 1900. As pointed out in my report of last year, and now reiterated in dealing with alluvial- and hydraulic-mining operations, dredging took such a hold on the public in some parts of the colony that no other form of mining would be considered as an investment, and the development of hydraulic mining, even in places where this method is more satisfactory than dredging, has in consequence been practically shelved. During the boom, claims were offered to the public, and taken up as dredging ventures, which were in several instances totally unsuited to this method of working under existing conditions of dredge design. In other cases the reasonable and sensible plan of properly prospecting the claims was ignored to a very great extent, and companies were quickly floated on the statements of interested parties. The natural result of this wild speculation is seen in the liquidation of several companies, and as evidenced by the columns of newspapers. Many really good claims were, however, placed on the market, and in cases where the dredges have got to work are yielding very satisfactory returns.

The necessity for dredges being designed to suit the class of ground they have to work is becoming more fully recognised; but there is still room for improvement in this direction, both in structural design and the methods of gold-saving. In connection with this matter I would mention the fact that several old dredges which have been working for years at different places on the Clutha River have been removed to other centres, and notably the alluvial flats in the Southland District. That they are not suitable to the conditions of flat-dredging has not seemed to trouble interested parties, but the fact remains that such is the case. Instances have come under my notice where the apparently low price paid for an old dredge has proved a very costly investment, the expenses of dismantling, removal, re-erection, repairs, and rearrangements to suit the new conditions of work, added to the initial cost, having practically equalled that of a new dredge built to meet requirements. The advantages of a new machine over an old and patched-up dredge in relation to working-life are obvious, but another and very important aspect of the question demands attention. In very few instances indeed can one of these old river-dredges be arranged to efficiently treat the wash of the Southland District as regards the extraction of the fine gold found there. This being the case, it stands to reason that the inefficiency of these old dredges must prove detrimental to the interests of the industry as a whole in the locality to which they have been removed. It is quite possible that claims worked on by these obsolete and unsuitable machines may be pronounced duffer-ground when the real reason of the claim being unprofitable lies in the dredge itself.

In connection with dredging on flats, the question raised in the last annual report regarding the feasibility of stripping the surface-soil and clayey subsoil overlying the auriferous wash in advance of the removal of the latter, and depositing these on the worked ground behind the dredge,

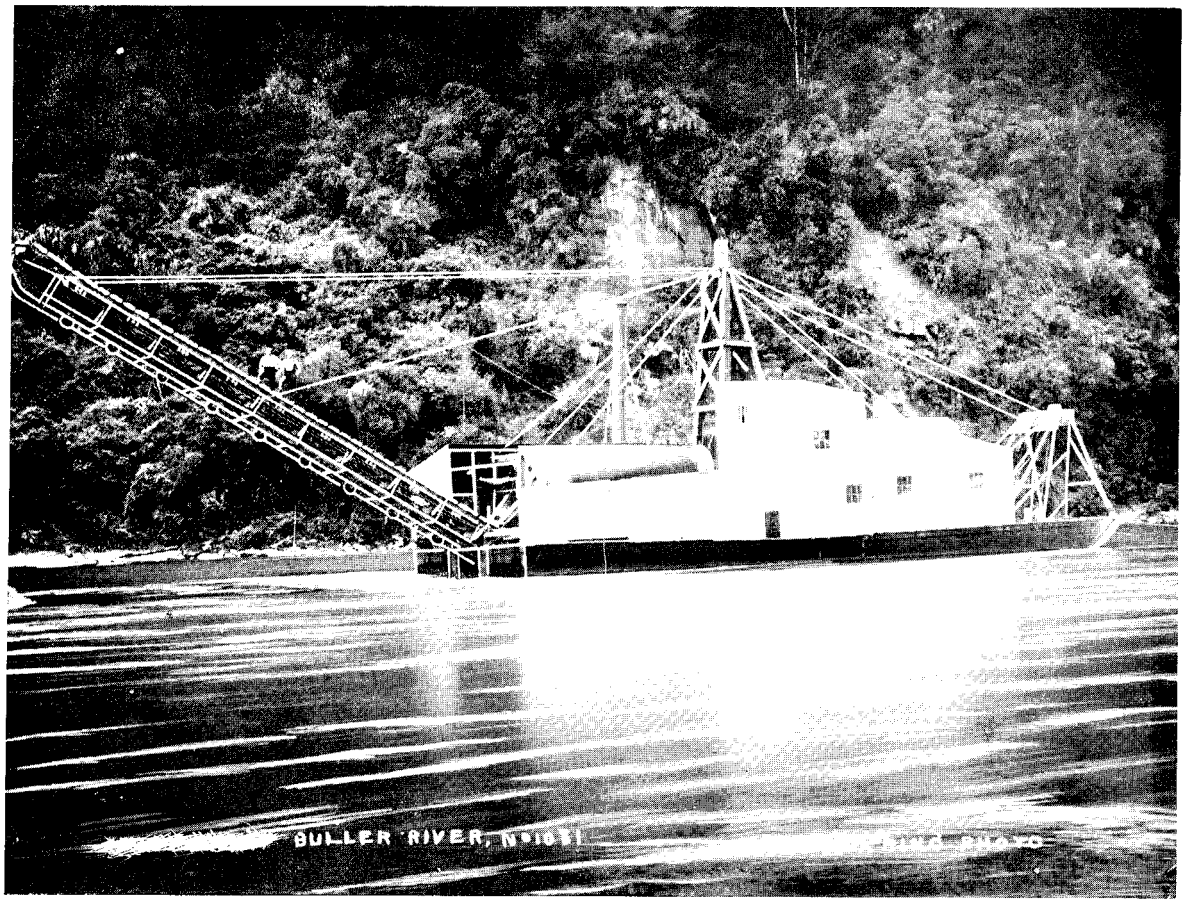
has not been lost sight of. In one instance at least application has been made to patent an appliance designed on the lines of one of the suggestions thrown out in my report of last year. A scheme for dealing with the overburden by stripping in advance and depositing soil, &c., on the tailings in what appears a most simple and yet efficient manner—which, in the case of a new dredge, will add very little to the cost, and possesses adaptability to many existing dredges—has been submitted to me. With certain modifications this scheme presents the possibilities of a much greater breadth of tables than has hitherto been the case, and its consequently increased capacity for saving fine gold should be an advance on existing arrangements. Beyond the features named I am not at present at liberty to make the design public; possibly full details may be available shortly. That much fine gold (which ought to be saved) is lost owing to the mixture of clay and soil with the wash in the sluice-boxes, &c., goes without saying, and any plan which will prevent this and at the same time obviate the destruction of good land is worth consideration.

The fact that accidents resulting in the sinking of a few dredges have occurred at various places in the colony, necessitates, in my opinion at least, consideration as to the advisability of building the pontoons in watertight compartments. The necessity for this may not be so great in land-dredging, where the dredges are not, as a rule, so large as modern river-dredges, and the supply of water can be cut off the paddock and the latter drained, thus allowing the pontoons to be baled or pumped dry, and the dredge refloated by the readmission of water to the paddock. But on swift-flowing and deep rivers—such as the Clutha, Kawarau, Waiau, Grey, and Buller—the case is altogether different, and the sinking of a large dredge a much more serious matter. Although the risk to life may be small, the risk of damage and loss to property is considerable. The additional cost of dividing up the pontoons into watertight compartments would in many instances be money well spent.

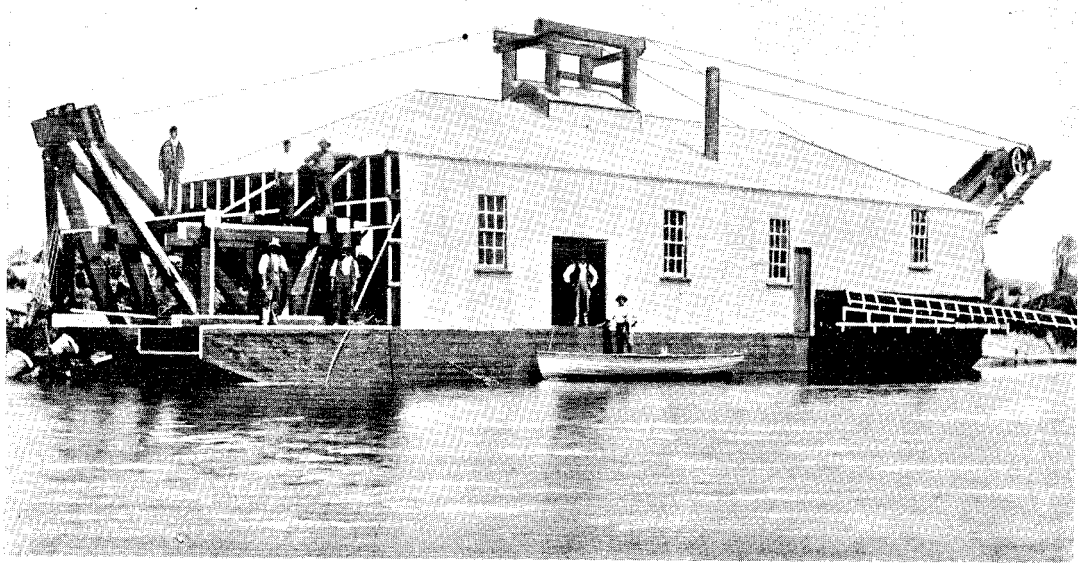
On the West Coast rivers some difficulty has been experienced in working new dredges in respect to boulders, buried logs, &c., having to be encountered. In other cases ladders have been found to be too short: possibly this feature is due to insufficient preliminary prospecting. The dredges having been designed by engineers whose experience has been chiefly, if not almost entirely, gained in the Otago District, it has naturally followed that the lines which have proved suitable for Otago have been adopted in designing dredges for the West Coast. That such would not be entirely successful was only to be expected: to design really suitable dredges to meet the different conditions of the West Coast rivers and other dredgable areas, as compared with the conditions existing in Otago, a more extended knowledge of those conditions must be gained by experience, and the difficulties looked upon as of a temporary character only. When thoroughly realised they will no doubt be successfully grappled with and overcome. It has occurred to me that more grab-hooks, wider wells, and a crane fitted with grabs and situated at the bow might be advantageously adopted on large dredges working on West Coast rivers. Also, there is a possibility that in some instances, where heavy and frequent obstructions are met with, it may be desirable to have a man stationed at the bow to watch the buckets and grabs, and provided with the means of stopping the travel of the buckets, &c., at any point without having to leave his station. By this means facilities would be given for dealing with boulders, &c., as they are brought up; and such an arrangement might tend to prevent damage to hull and machinery. From the experience gained during the year it appears evident that, for dredging West Coast rivers to a successful issue, dredges must be large, strongly built, and powerfully equipped.

For dealing with fine gold and heavy sand such as is met with in the beach formations of the West Coast and elsewhere, dredges should be specially designed in relation to their arrangements for extracting the gold from the sand. At Waikaka, Southland, where the gold is fine, a similar arrangement of sluice-boxes and side tables to those in use at the hydraulic plants of the Round Hill Gold-mining Company (see photograph) has been adopted, but on a smaller scale. This is said to be giving good results, and to materially increase the amount of gold saved in comparison with the arrangements previously in use. Two dredge-managers in this locality (Messrs. H. W. Parsons and G. Lee) have recently patented an invention having for its object the prevention of loss of gold where clay-lumps have to be dealt with on dredges or at hydraulic-sluicing plants. I have not yet seen the appliance, but quote the following description from the *Otago Daily Times*: "An invention that bids to be of great importance to mining companies has just been patented by Messrs. G. Lee and H. W. Parsons. The appliance is very simple, and is not likely to get out of order. It is equally applicable for any description of gold-saving where either lumps of clay or stones have to be dealt with. The machine, which is placed, when on a dredge, between the buckets and the screen, and, when used at a sluicing plant, between the striking-plate and the tables, consists of a number of revolving forks, the prongs of which are placed at the distance apart that is necessary to take up stones above the required size, so that the ripples or screen or boxes, as the case may be, are not worn by the constant friction of boulders or lumps of clay that might rob gold. The revolving forks simply pick these up and pass them to another cross-box leading to the elevator or tailings, as the case may be. Even in the case of lumps containing gold these could be there separately treated, while in stony claims the invention will doubtless have a high value, especially as it could be placed on most existing plants."

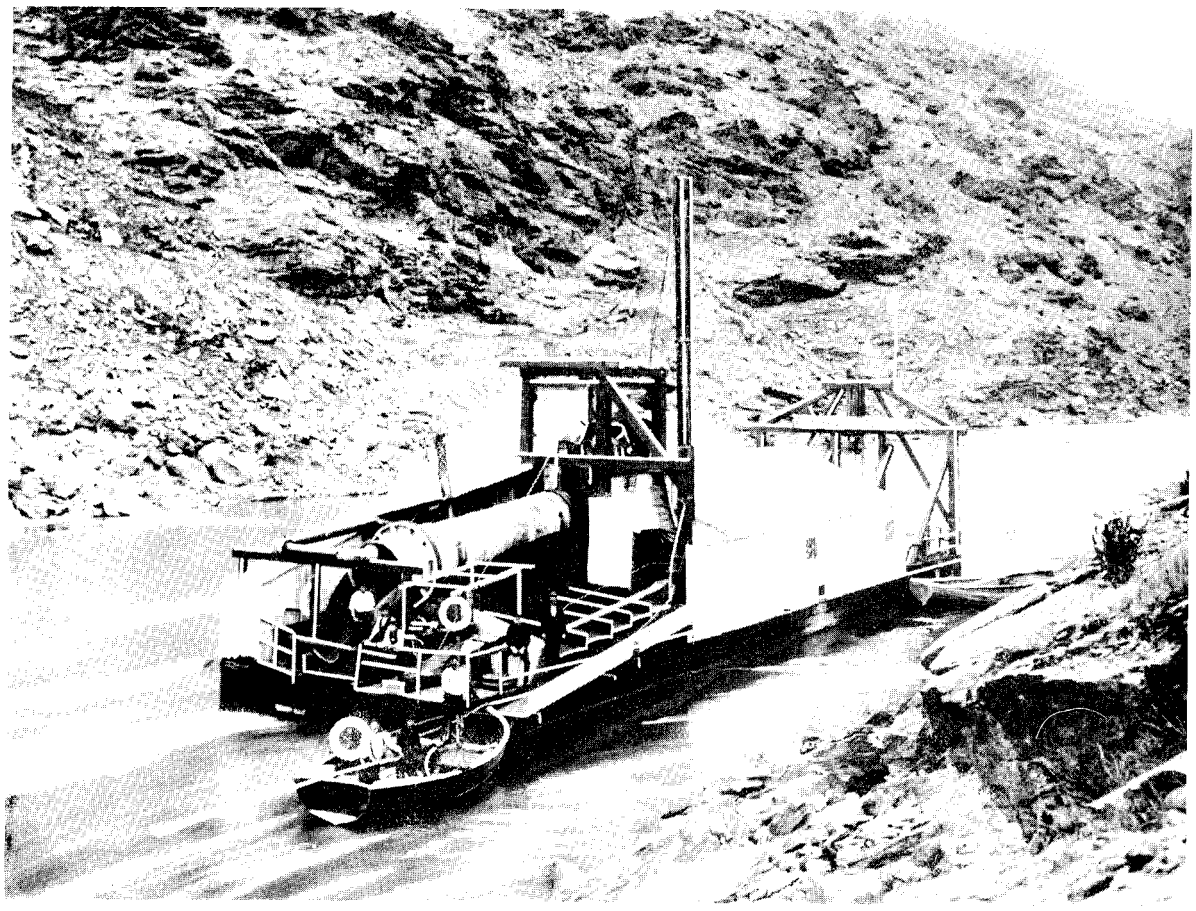
It is very probable that much experimenting will have to be done to ascertain the best method of saving the fine gold on dredges working beach-ground. Generally, it may be found that the essentials to success are tables of large width and area, the sands, &c., being distributed evenly at the head of each run. To effect this a mixing-tank with suitable launders to convey the water and sand, &c., to the head of each run might be an advantage. The cloths with which the tables are covered will have to be washed frequently, and it is a question whether some arrangement of endless bands of suitable cloth or plush, revolving round rollers, and provided with means for being mechanically washed, might not also be adopted. Something of this kind was designed and shown to me by Mr. J. Tyson, of Miller's Flat, Otago, about two years ago.



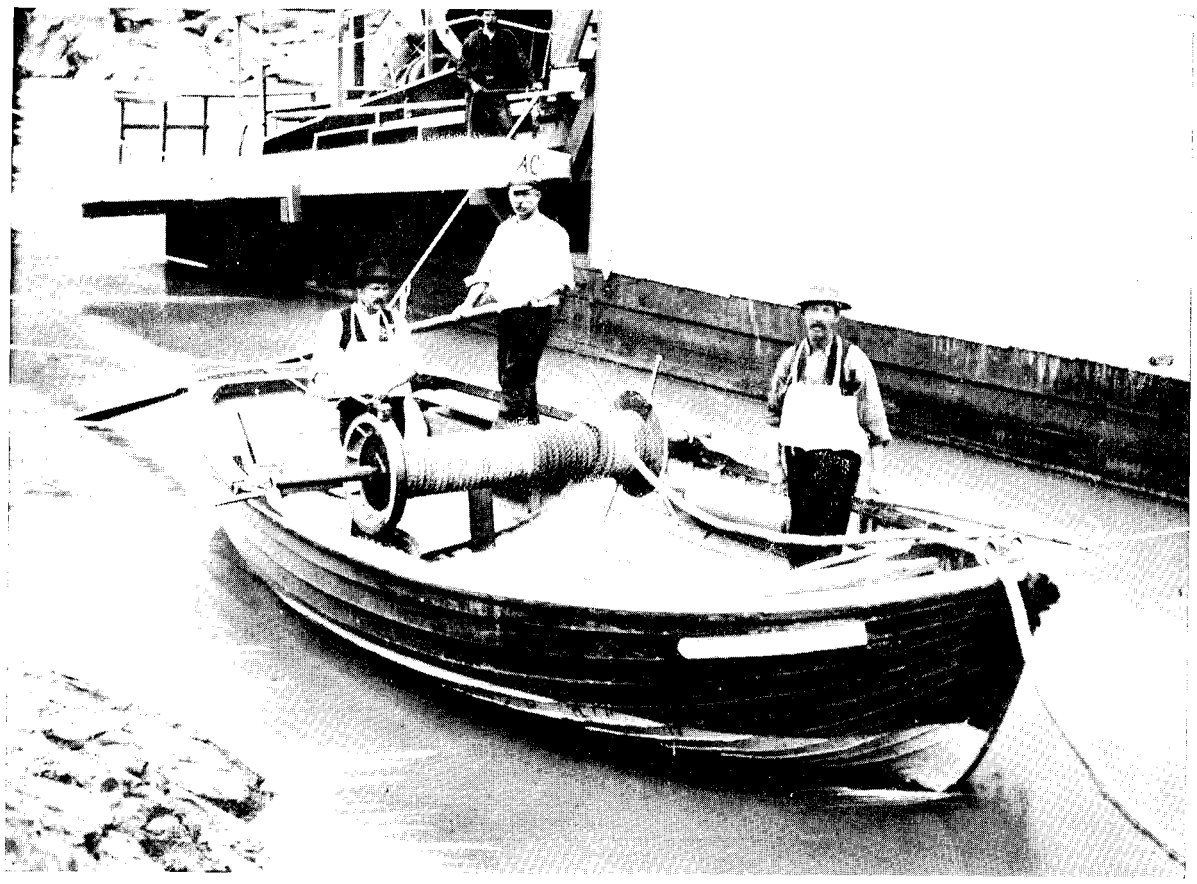
Buller Junction Dredge.



New River Dredge, eight miles south of Greymouth.



Alpine Consols Dredge, Cromwell Gorge, Clutha River.



T. Shore's Arrangement of Reel for paying out Lines. Alpine Consols Dredge, Cromwell Gorge, Clutha River.

With very few exceptions, steam-power is used for driving dredging machinery. Electricity is adopted at Miller's Flat and Fourteen-mile Beach (Clutha River), the current in each case being generated by water-power. A large dredge is under construction at Earnscleugh Flat, near Clyde, and will be electrically-driven, the power-station being on the Fraser River. Particulars of this dredge follow, and a drawing is also reproduced.

In California several electrically driven dredges have been designed and put to work by Mr. R. H. Postlethwaite, formerly of the New Zealand Engineering and Electrical Company, Dunedin, and now connected with the Risdon Ironworks, San Francisco. Mr. Postlethwaite has very kindly sent me a general drawing of one of these dredges. Whilst the general principles of the New Zealand design are followed, there are several differences in detail. Among these I notice that each department of the dredge's work has a separate motor for driving. A machine having buckets of 5-cubic-feet capacity, constructed to dredge 30 ft. below water-line, and to stack its tailings to a similar height above water, has six motors—viz., one for working each of the following portions of the machinery: (1) Buckets, (2) ladder-winch, (3) line-winches, (4) centrifugal pumps, (5) screen and elevator, (6) centrifugal sand-pump. The last-named appliance is adopted for the purpose of dealing with a portion of the sand and water from the tables, and discharging the same through a pipe (running parallel with the elevator) on to the tailings-heap.

At Waipori Mr. W. O'Brien has adopted water-power direct for the purpose of driving a small dredge. In this case a Pelton wheel, from which the machinery is driven, is mounted on the dredge. Water is conveyed under a head of 45 ft. in pipes, but to allow of the movements of the dredge without interfering with the water-supply the pipes between the dredge and the bank are carried on small pontoons, and have ball joints. By this means the varying movements due to height of water and shifting of dredge are met. The disadvantages of the system adopted for conveying the water under pressure to the Pelton wheel appear to be in the wear-and-tear to which these joints will be subjected, and with a greater pressure of water than is available here armoured hose would be found to answer the requirements, and be free from the objections named. The advantages claimed are that engines, boilers, and fuel, with their attendant costs, are dispensed with, and the water used for driving the Pelton wheel or wheels is afterwards utilised for washing the dredged material, thereby obviating the necessity for pumping water for this purpose. As is well known, the power absorbed in this department of gold-dredging work forms a very considerable percentage of the whole. Whilst there may be considerable difficulty in working a dredge in this manner in rapid currents, there may also be many places where water under pressure is available for working dredges on flats or sluggish streams by the system under notice. Where desirable, separate motors could be used for buckets, winches, and elevator.

The safety of persons employed on dredges has occupied the attention of the department during the last three years, and the special rules dealing with this aspect of the working-conditions of dredge-mining have been revised, such additions being made thereto as further experience has suggested in the interests of safety to life and limb. It is pleasing to note that in some instances dredgemasters have made the provisions for the safety of their crews a matter of earnest consideration; but at the same time it is greatly to be regretted that in many instances employés are found to be recklessly careless and foolhardy. The special rules as now amended impose their observance upon employés as well as employers, and where workmen wilfully violate the regulations made for their own safety employers may not only take action in the Courts against them, but it is their duty to do so. The work of running lines between dredges and the banks of swift-flowing rivers is perhaps one of the most dangerous features of a dredgeman's occupation, and experience has repeatedly proved the necessity for the special rule which requires the crews of boats so engaged to wear life-belts during such operations. The capsizing of boats has occurred on several occasions, and lives have been lost. It is with much pleasure that I have to refer to the invention by Mr. T. Shore—dredgemaster of the Alpine Consols dredge, Cromwell Gorge, Otago—of an appliance which has for its object the safety of employés when engaged in running lines. The general method is to coil up the rope in the bottom of the boat, and for one man to pay it out by hand. In such rivers as the Kawarau, Clutha, and similar rapid streams the boat sometimes gets beyond the control of the oarsman to some extent, with the result that the man paying out the rope by hand is thrown overboard by a sudden jerk. To obviate this, Mr. Shore provides a windlass-barrel 9 in. in diameter, fitted at one end with a flange 2 ft. in diameter, and at the other with a hand-wheel of similar size. The whole is mounted on an angle-iron frame-support, which can readily be connected with and removed from the sides of the boat. The flange-wheel is provided with a powerful screw-brake to regulate the speed of boat and consequent paying out of the line, any taking-up of the line being effected by means of the hand-wheel. The rope or line is guided over the bow of the boat by a fair-lead in the shape of a pair or ram's horns, and designed with the object of preventing the rope from being jerked out. The appliance has worked very satisfactorily, and has also caused much interest among dredge-managers. If extensively adopted it may be the means of saving many valuable lives. The invention (which I understand has been patented by Mr. Shore) is very simple, and will be thoroughly understood from the photographs accompanying.

In connection with dredging-work, Mr. J. F. Kitto, of Cromwell, has published a very handy manual for dredgemen. As Mr. Kitto is a dredgemaster of many years' responsible and varied experience, he is well qualified to deal with this subject, and describes in plain, simple language what to do, and how to do it. The manual should, and no doubt will, be of great service to young men qualifying for the position of dredgemaster.

As regards the extent to which the industry has attained, I am not in a position to give the exact numbers of dredges at the 31st December, 1900, but the following figures, which will not differ to any great extent, are made up to the 31st March, 1901:—

District.	Working.	Standing.	Under Removal.	Building.	Total.
Otago	99	10	4	84	197
Southland	26	...	...	17	43
Total for Southern district ...	125	10	4	101	240
West Coast district	20	1	...	21	42
Grand total	145	11	4	122	282

The detailed lists of dredges working and building are attached to the reports of Inspectors of Mines.

GOLD-SAVING ON DREDGES.

I am indebted to Mr. George J. A. Richardson, of Invercargill, for the following paper and accompanying drawings:—

"As year by year the lifting-power of gold-dredges has gradually increased so that at the present time over 100 tons per hour can be lifted, the question naturally arises, How is it that the gold returns do not increase in like ratio with the amount lifted? The only conclusion that can be arrived at is that the gold-saving appliances are not progressing with equal strides in comparison with the lifting-capacity of the dredges. Reverting to the old-fashioned cradle, it will be admitted that the same quantity of matter cannot be washed with a 12 in. that can be dealt with by an 18 in. cradle, and the same rule applies in dredging. Boxes with an area and water-supply sufficient for 25 tons per hour are totally unfitted to cope with 100 tons per hour. Not only will the loss exist in not saving the gold from the 75 tons over the 25 tons for which the boxes are adapted, but the increased quantity will result in a return of less gold from the 100 tons than would have been obtained if only 25 tons (the capacity of the tables and water-supply) had been dealt with, inasmuch as the cloths become clogged almost immediately after the dredge starts, and thus the gold is prevented from coming in contact with the saving surfaces.

Instances no doubt exist when the lifting-capacity of 100 tons per hour, with saving-tables and water-supply equal to 25 tons per hour, will not overtax the saving appliances. For example, if the matter dredged is composed of 75 per cent. of stones and boulders the tables will only be called upon to deal with the remaining 25 per cent., whereas if the whole 100 tons were box-matter the tables would be quite inadequate. It is therefore of the greatest importance to the proprietors of every mining claim to ascertain the percentage of box-matter, and that this information should be handed to the engineer, to enable him to provide sufficient room on the dredge to allow of adequate table-accommodation.

Last year I visited a dredge with a lifting-capacity of 60 tons per hour; a large proportion of the 60 tons was box-matter. The saving appliances consisted of a 3 ft. launder, about 25 ft. long, over which the whole of the matter passed; an under-run supplied the tables, which consisted of three boxes, each 3 ft. wide and 12 ft. long. It is needless to say that the loss of gold was very great but the dredgemaster was quite satisfied, and pointed with the greatest satisfaction to the distance covered during the previous month, and the fine heap of tailings. On trying a prospect at the end of the launder there was no doubt that the tailings contained payable gold. The dredge operations had not paid the shareholders up to the time of my visit. The dredge was styled a "compact little dredge"—that is, sufficient space to crowd the machinery on without regard to gold-saving appliances.

The use of screens on dredges is a very questionable benefit; the initial expense is heavy, wear-and-tear considerable, besides the cost of power and fuel required to work them. The screen is of no benefit other than to carry off the stones and boulders, which can be accomplished, and a more effectual washing secured, by causing them to travel over iron riffles. The riffles will also effect the saving of any heavy gold, should the same be present in the spoil lifted, whereas the screen will deposit the heavy gold with the stones.

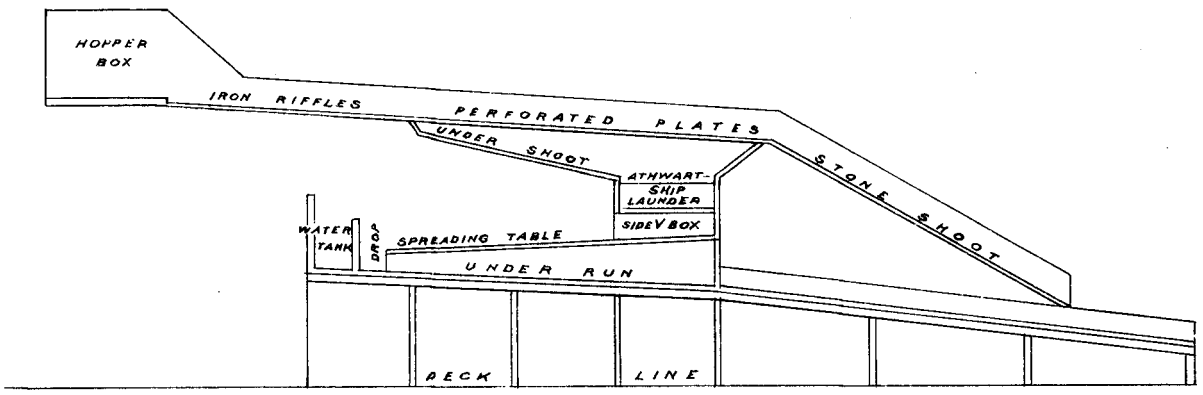
It is needless to quote further to prove that the present system of gold-saving is far from perfect; it is admitted by all interested in the industry that there is room for improvement, and the craze for increased lifting-power will terminate as soon as the question of gold-saving is fully appreciated.

From personal experience I am satisfied that on beach claims, composed of heavy black and grey sands, it is impossible to deal with more than from 25 to 30 tons per hour, and save anything like a fair percentage of gold. One dredge under my charge on a beach claim was capable of lifting from 80 to 100 tons per hour, the superficial area of the saving-tables being 432 ft., water-supply eight Government heads; not more than 20 to 25 tons per hour could be put through with advantage, and from this quantity from 60 oz. to 80 oz. of gold per week was obtained; every attempt to increase the quantity lifted only resulted in blocking the tables and consequent loss of gold.

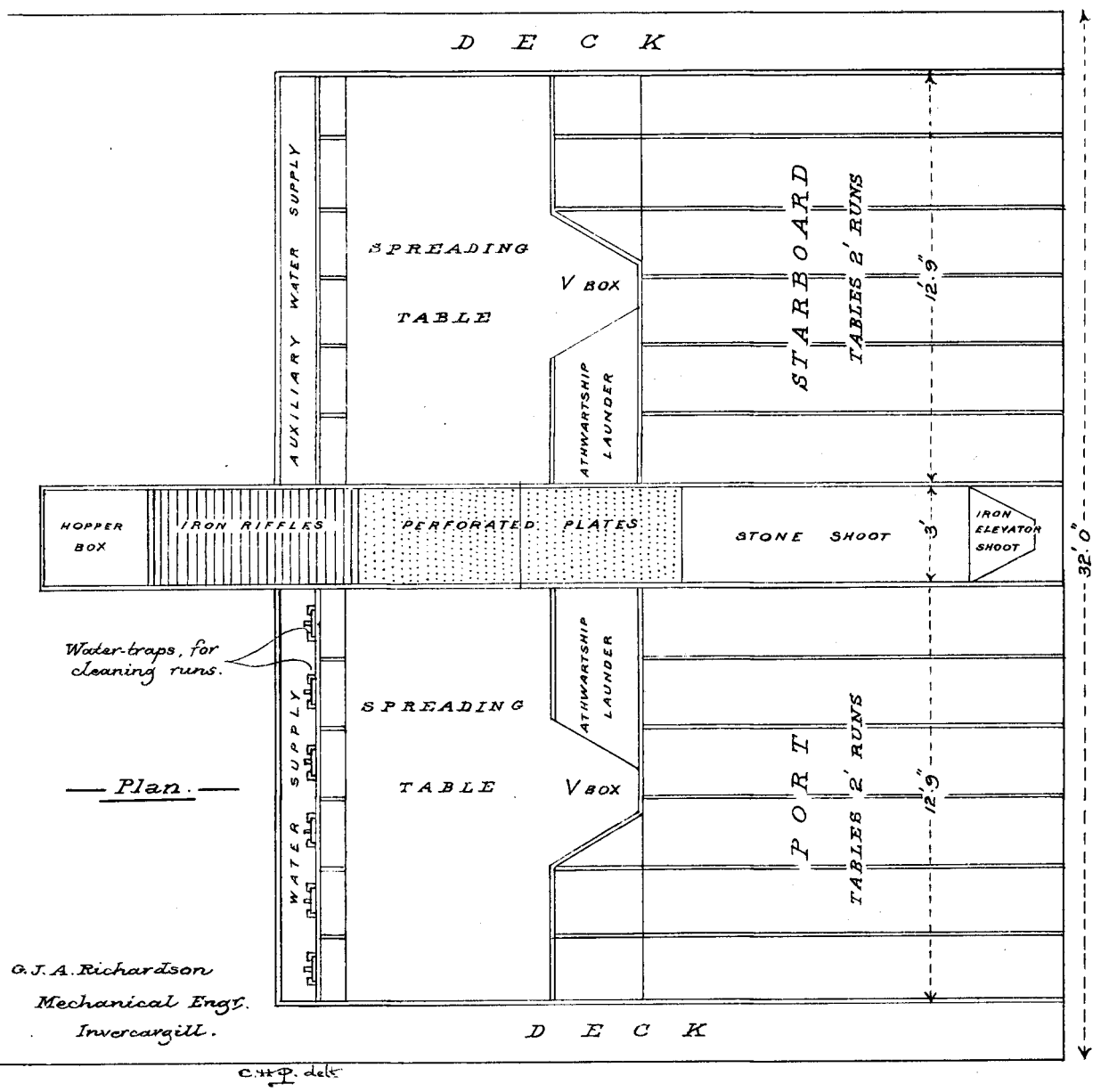
If satisfactory results are to be obtained, the following questions should have the attention of all concerned in gold-dredging, more especially when fine gold is present: (*a*) Area and position of tables; (*b*) quantity of water and even supply; (*c*) even distribution of spoil and water over tables; (*d*) size of runs or boxes; (*e*) lifting separate runs without stopping dredge; (*f*) constant attention to tables.

(*a.*) After repeated experiments I found, in dealing with fine gold and black sand, that a wide spread of boxes is absolutely necessary, so that the spoil may be distributed over a wide space of

Gold-saving Tables for Dredges.
(Can also be adapted to work with screen).



Elevation.



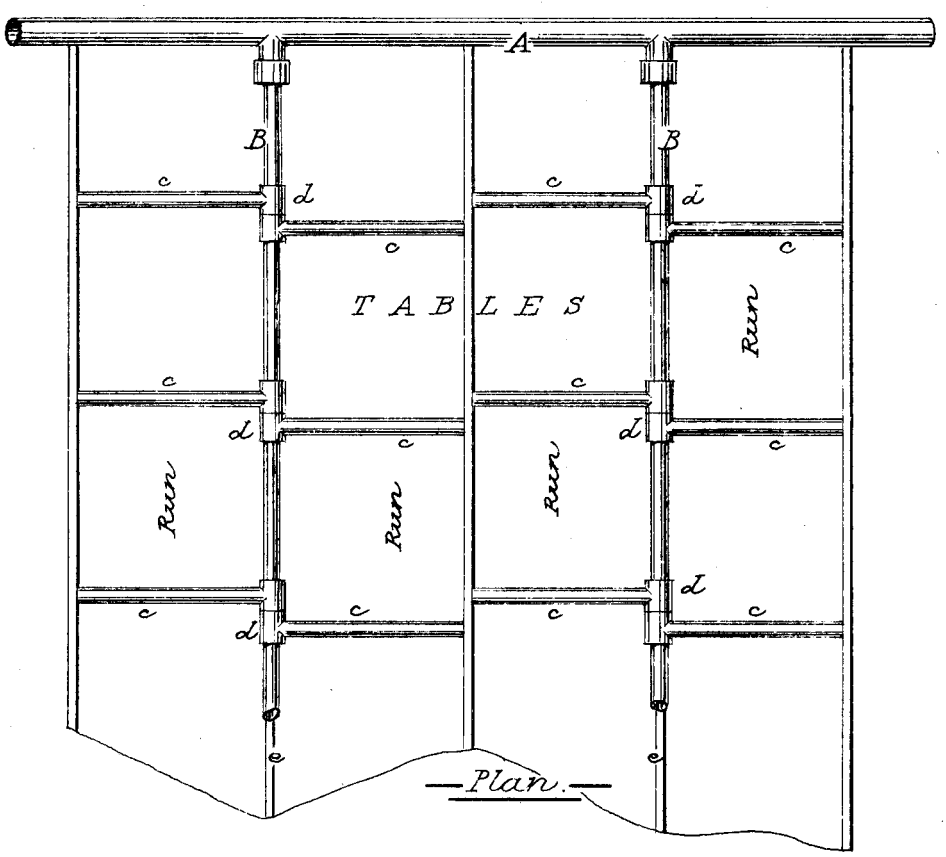
Plan.

G. J. A. Richardson
Mechanical Engr.
Invercargill.

C.H.P. del.

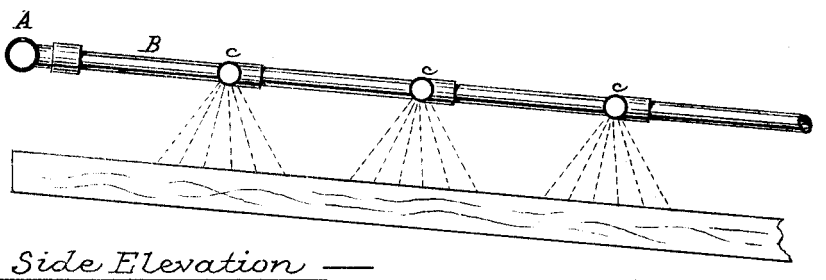
An Improved method of separating Gold from Black-sand & other substances.

Patented

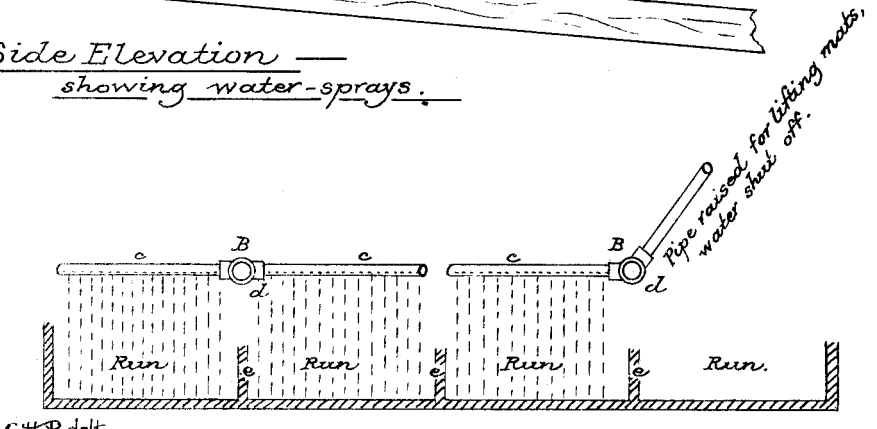


Plan.

A. Main supply-pipe.
B. Supply-pipe over Run divisions
c. Perforated pipes across Runs.
d. Sockets.
e. Run divisions.



Side Elevation showing water-sprays.



C.H.P. delt

End Elevation.

G. J. A. Richardson. Mechanical Engineer. Invercargill.

saving surface, and to this end room must be provided on the dredge-punt on which to erect the boxes. The boxes should run fore and aft of the dredge, not athwartship. (See Plan A.)

(*b.*) The quantity of water should be such as to allow of a constant run of a ¾ in. pipe over the whole surface of the tables, the tables having a fall of 9 in. to the 12 ft., and a break and a direct drop of 1½ in. every 6 ft.

(*c.*) The matter and water should be evenly distributed over the whole width of the boxes by means of a spreading-table, and the velocity of the water checked before reaching the tables by falling from the spreading-table on to the return run (see Plan A). The pump should never be run from the shaft of the main engine, for the reason that when buckets are lifting to their full capacity the engine slows down, and the water-supply is reduced, whereas when the buckets are but partially full the speed of the pump is increased; thus the water-supply is reduced when it should be increased, and increased when it should be reduced. The pump, therefore, should be run from an auxiliary engine apart from the main engine.

(*d.*) The usual breadth of a run is 3 ft. but for fine gold plush should be used, and 2 ft. width gives the handiest cloth; the length should not exceed 2 ft. 6 in., if too long they soon wear out.

(*e.*) Washing up the runs separately is a most essential feature on all dredges dealing with fine gold, and not only should the cloths on each run be capable of lifting while the dredge is at work, but means should be provided to allow of their being cleansed from sand (consequent on the stoppage) when in full work. It will be noticed on plan A that the run-divisions appear at the lower end of the spreading-tables. A movable cover is made to fit and stop the run, the water-trap in the auxiliary water-supply tank is then lighter, and the required amount of water allowed to pass into the run. When the cloths are sufficiently cleared from the useless *débris* the water-trap is shut down, the cloths lifted, washed, and when replaced the cover is lifted and the run is at once at work.

(*f.*) The present system of letting the saving-tables look out for themselves is not desirable. It will be found that the money paid in wages for an extra hand will soon be repaid, more especially on dredges dealing with fine gold associated with black sand.

The boxes suggested will require more deck-room and the adjustment of the position of the boiler, and the tailings-elevator gearing and belt, matters of no consideration as compared with effective saving appliances.

The plan marked B illustrates a very valuable addition to saving-tables, especially if dealing with magnetite and black sand, which is apt to clog the cloths. The perforated pipes are arranged above the runs at the required height to allow of the sprays falling upon the water running in the boxes, and causing a disturbance down the cloths.

In conclusion, thorough and reliable prospecting is absolutely necessary as the primary steps to the successful result of a dredging company, for upon the reports of the prospecting and boring the engineer should calculate his length of ladder, size of buckets, water-supply, and tables."

Particulars of New Dredges, illustrated by Drawings.

Earnscleugh, No. 3 Dredge.—The Earnscleugh Dredging and Electric Power Company's dredge has been designed by Mr. Leslie H. Reynolds, C.E., of Dunedin, to work this company's claim, which is of 100 acres extent, situated at Earnscleugh Flat, near Alexandra South, and Clyde, Otago. The dredge is the largest of her particular type yet constructed, being driven by electro-motors, which are supplied with current generated at the power-house situated on the Fraser River, nearly four miles from the claim. In the construction of the pontoons Mr. Reynolds has adopted the well-known truss system, which with the minimum of timber a maximum of rigidity is obtained. The materials are of kauri, ironbark, and Oregon pine. The principal dimensions are as follows: Length over all, 132 ft.; width at stern, 35 ft., tapering to 25 ft. at the bows; with a depth of 6 ft. forward and 7 ft. 6 in. aft. The ladder is of a length sufficient for a dredging depth of 50 ft. below water-line, and is fitted with buckets of 6-cubic-feet capacity, to run at a speed of eleven per minute, equal to 145 pards per hour. The revolving-screen is 30 ft. long and 7 ft. diameter, driven by flat friction gearing. The elevator is 118 ft. long between centres, and capable of stacking the tailings to a height of 70 ft. above water-line, thus giving a total lift of 120 ft. from the bottom. For lifting the silt discharged from the tables a silt-wheel is fitted which discharges into the main elevator, thus preventing any accumulation under the stern of the dredge. Water is supplied by a 12 in. Tangye centrifugal pump driven from the main gearing, and capable of delivering over 2,000 gallons per minute. The winch is of Mr. Reynolds's special worm design, fitted with six barrels for head, ladder, and four side lines respectively, and is driven by an independent 20 b.h.p. electro-motor. The main motor is of 100 b.h.p. capacity, there being a full equipment of transforming and controlling apparatus, together with a complete system of electric lighting and telephones. The whole of the electrical plant is by Brown, Boveri, and Co., Switzerland, supplied and fitted by their New Zealand agents, Messrs. Turnbull and Jones.

Kohinoor Dredge.—This dredge has been designed by Mr. James Bishop, of Wellington, to work the company's claim on the Mikonui River, Ross. The pontoons are 104 ft. long by 32 ft. beam and 7 ft. deep, with a forward well 6 ft. wide for ladder, and a short stern well for elevator tumbler. The buckets are 5½-cubic-feet capacity, capable of lifting 140 cubic yards per hour. The ladder is 60 ft. long, capable of dredging to a depth of 40 ft. The screen, which is driven by friction-rollers from the bottom end, is 26 ft. long by 6 ft. in diameter, with a long discharge-shoot fitted up with ripples for catching any gold that may be too large to pass through the holes in screen. The elevator is 60 ft. long, capable of stacking to a height of 32 ft. The boiler is 30-horse power, designed to burn either wood or coal; this is being constructed by Messrs. Luke and Co., of Wellington, who have the contract for constructing and erecting the machinery. The engine is

a 20 nominal horse-power compound condensing-engine, ordered from Ransome, Sims, and Jefferies, England, having two pulleys, one for driving the machinery and one for driving the 12 in. centrifugal pump. The machinery for this dredge is of heavy construction. The winch contains six barrels—one for head-line, one for ladder-line, and four for side lines, all of which can be driven independently. The engine for driving the winch is a double cylinder, vertical, by Ransome, Sims, and Jefferies. The sands from the gold-saving tables will be delivered by a shoot direct into the elevator-trays.

ACCIDENTS.

Accidents in connection with gold-mining attended with fatal results have occurred to persons employed in the various branches of gold-mining, as under:—

	Quartz-mines.	Alluvial Mines.	Dredges.
Northern district	4	...	...
West Coast district	...	1	*
Southern district	...	7	1
	4	8	1

These accidents, and a few others of a non-fatal character, were all investigated by the Inspectors of Mines for the respective districts, and are reported on by them.

OTHER MINERALS.

Scheelite.

Messrs. Donaldson Brothers, of Macrae's, Otago, continue to extract scheelite from the quartz at their battery, the product being shipped to Europe. Some other persons who hold quartz-mining areas in the same locality are also turning their attention to this mineral. Scheelite is also identified with quartz in the claims at Top Valley, Marlborough, but so far nothing has been done to concentrate it. The scheelite-mine at Glenorchy (Lake Wakatipu) is still idle.

Cinnabar.

Operations have been continued near Waitahuna, but before very much more can be done some county work on roads is required in order to enable mining material to be got to the ground. From investigations by Mr. L. O. Beal, jun., C.E., Dunedin, it appears that early operations were conducted on a branch lode; what Mr. Beal has since found to be the main lode not having been previously known. A low-level adit has cut this at a distance of 230 ft. from the entrance. There appears to be every probability that the discovery will be one of considerable importance. I have not heard of any further steps being taken to find the lode supposed to exist near Taipo (West Coast district). An analysis of some pieces of cinnabar-ore found in the locality was given in the report of last year. Cinnabar said to be of a payable quality exists in the Kauaeranga Valley, Thames district, but no definite information as to its probable extent is yet available.

Antimony.

Some work has been done near Alexandra (Otago) with a view to opening out the antimony lode there. Mr. Green, Inspector of Mines for the Southern District, refers to the work in his report.

Copper.

Some prospecting has been done at Moke Creek, near Queenstown, but no report of results obtained are to hand.

Chrome-ore.

A small amount of work has been done near Croixelles Harbour, Nelson. The shipment of ore for the year was 28 tons, valued at £110.

RIVETLESS PIPES FOR WATER-TRANSMISSION.

A new style of pipe which can be made up to 28 ft. in length and 30 in. in diameter has been introduced by Mr. Mephan Ferguson, engineer, Footscray, Melbourne, and is now being manufactured by him on a large scale. The peculiarity of this pipe is that it is entirely without either weld or rivet, and the consequent liability to burn the plates in the case of welded pipes, and of the weakening of the plates by drilling or punching the holes necessary for riveted work, is entirely obviated.

Each pipe is made by first having the edges of two plates thickened ("butted" or "upset") and planed for their entire length. The plates are then bent into semicircular form, and afterwards brought together to form a complete circle, the union being effected by a longitudinal locking-bar, which makes a simple yet effective plate-joint. This locking-bar (see illustration, Figs. 1 and 2) is made with its jaws or openings somewhat wide so as to admit the thickened edges of the plates, and is closed down on the latter in a cold state by powerful hydraulic machinery. Elaborate and

* One person who was on board a dredge (out of curiosity) fell into the water and was drowned.

RIVETLESS PIPE
FOR
WATER TRANSMISSION.

Ferguson's Patent.

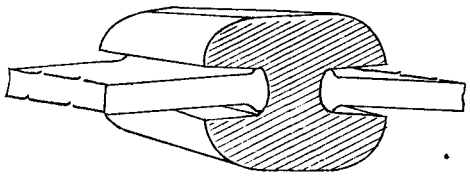


Fig 1.

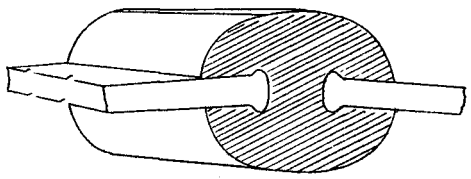


Fig 2.

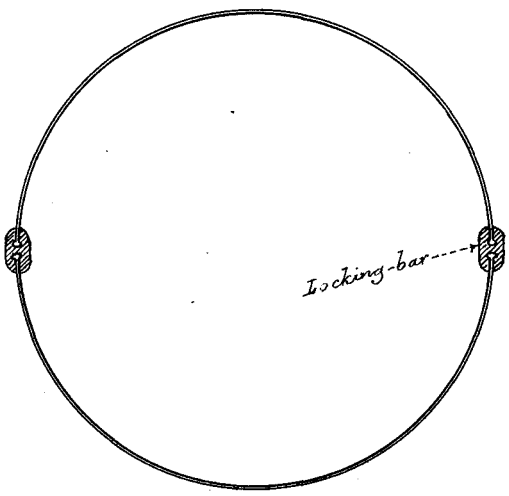


Fig 3.

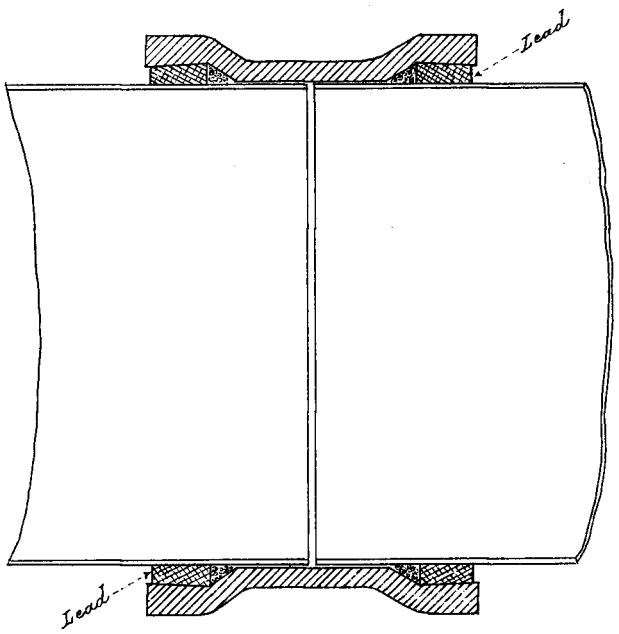


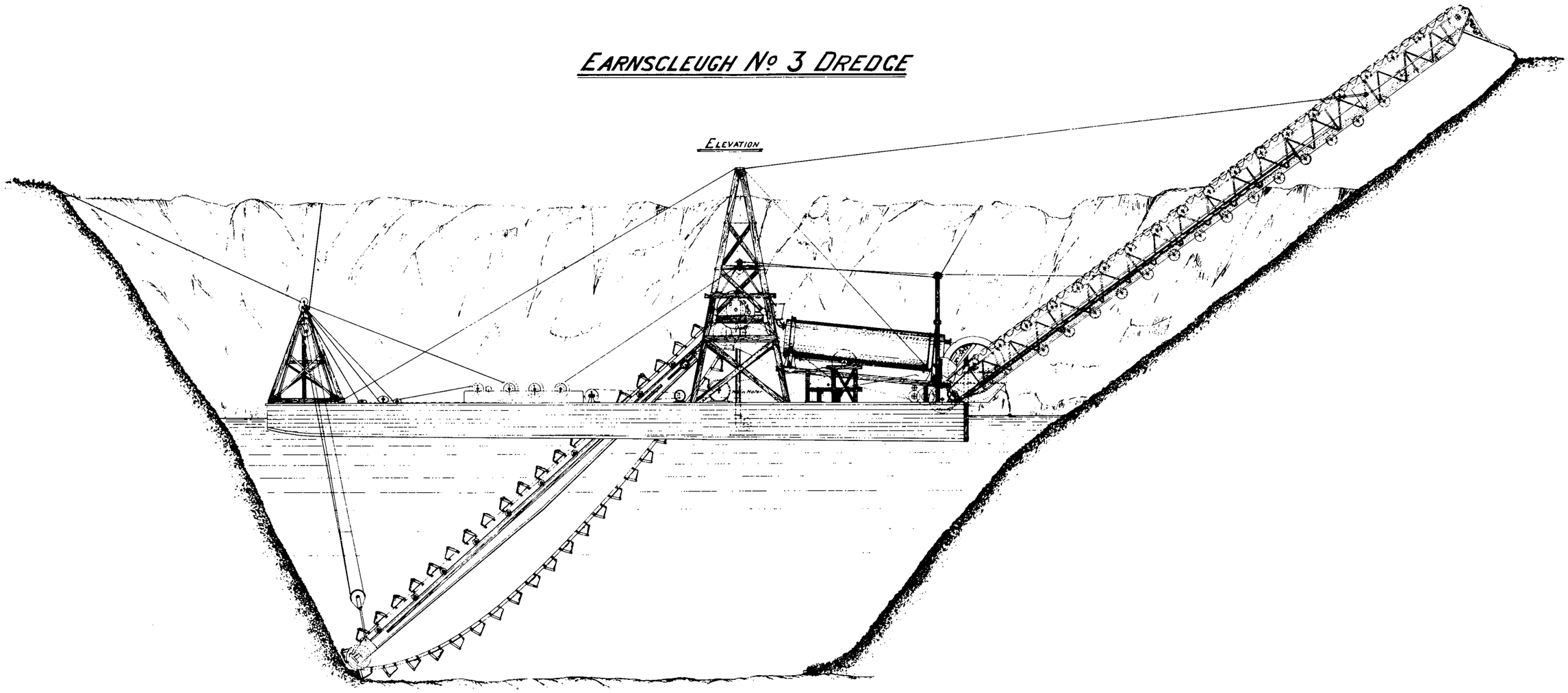
Fig 4.

Fig 1. View of Locking-bar, before closing.
" 2. " " " " " closed.
" 3. Section of finished Pipe.
" 4. " " Thimble at Pipe-joints.

C.H. PIERARD. DELT.

EARNSCLEUGH No 3 DREDGE

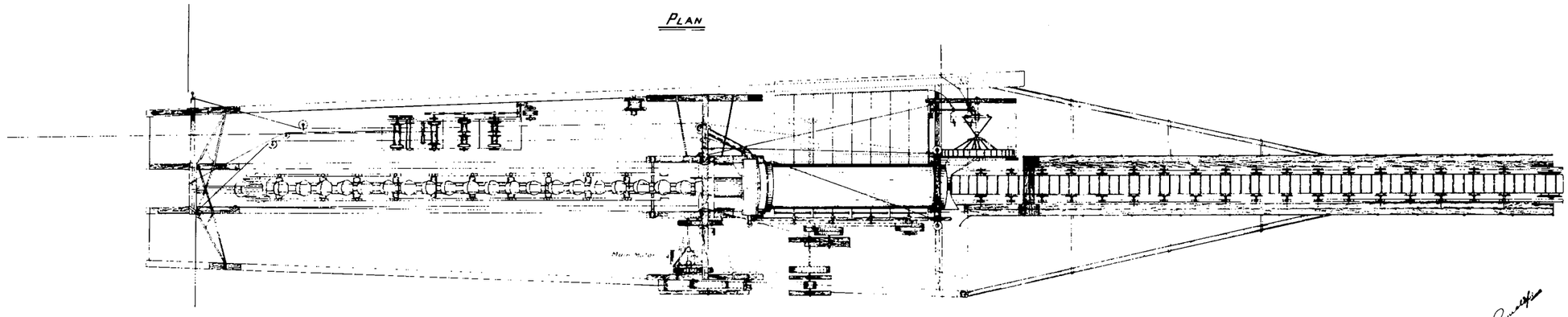
ELEVATION



SCALE OF FEET

10 5 0 10 20 30 40 50

PLAN



extensive tests have been made with pipes constructed on this plan, and it has been found that the plates have always given way before the joints, even where the plates have stood an enormous hydraulic pressure before parting.

For connecting the pipes the old style of flange-joint has been dispensed with, its place being taken by a wrought-steel thimble or ring (Fig. 4). This is made wide enough to take a good bearing on each pipe, and has a packing of molten lead run in between the pipe and the tapered inner face of the thimble. Thus a wedge or dovetail joint is formed which prevents the egress of water, and this combination of thimble coupling and lead packing has been found to answer its purpose admirably.

A practical mind will at once grasp many of the advantages which are peculiar to this class of pipe as compared with the ordinary style of riveted pipe—*e.g.*, no necessity for caulking; reduction of friction consequent on smooth inside surface; great lengths attainable with corresponding reduction of pipe-joints; increased strength and stiffness which greatly reduces the tendency to sag when pipes are carried on trestles. Each pipe is thoroughly coated with asphaltum, both inside and out.

The Government of South Australia has already put this class of pipe to actual test and use, and, after very careful inquiry, it has been adopted by the Government of Western Australia for the Coolgardie goldfields water-supply scheme, the pipes being 30 in. in diameter, and having a united length of about 330 miles.

For mining purposes the invention should make its way, as this pipe is applicable for the transmission of compressed air as well as water.

A SIMPLE MINE-VENTILATING FAN.

Some years ago, when holding the position of manager of extensive collieries in the North of England, circumstances made it necessary for me to devote some practical attention to the design of centrifugal ventilators for mining purposes, the result being the double-inlet fan bearing my name, which has been in actual use for the last ten or twelve years, with satisfactory results.

The objects attained are the complete absence of vibration so common to fans of the Guibal type, and the reduction of size and consequently weight, both in the machine itself and in its foundations and masonry, as compared with Guibal and other large fans. By making these fans of moderate diameter, they may be driven at a greater number of revolutions per minute than the fans alluded to, yet are not open to the objection which some mining-people raise to the very large number of revolutions per minute at which fans of small diameter have to be driven in order to attain the required circumferential velocity. My fans may thus be said to occupy a position midway between the two extremes, combining, as far as possible, the advantages, and in like manner eliminating the disadvantages, of both.

As it appears more than probable that a system of mechanical ventilation will have to be introduced at some quartz-mines, and even now is desirable at some of the smaller collieries, as well as others of medium extent, in the colony, I have given further thought to the subject, in the direction of designing a fan which, whilst retaining those features so essential in a really good mine ventilator —viz., freedom from vibration and a capacity for yielding a satisfactory percentage of useful effect —shall be so simple that the bulk of its construction and its erection may be effected by the mine blacksmith and carpenter at comparatively little cost. Such a ventilator is illustrated. The air is taken in at one side only, and discharged freely all round the circumference. It may therefore be classed as a "single-inlet, open-running fan." The blades are gradually tapered from the circumference of the inlet to their tips, in order to maintain uniform area, thereby preventing a back-rush of air into the fan, which would inevitably be the case if the blades were parallel or nearly so. When the air leaves the tips of the blades its velocity is considerable, but, as it is most desirable that this velocity should be reduced as far as possible before the discharged air meets the outside atmosphere, I provide expanding outlet-cheeks *b*, *b*, as a continuation of the contracting cheeks B, B, between which the blades revolve.

Many fans are made with parallel blades enclosed by a drum-like casing, having an outlet in the form of an expanding chimney. Near the base of the chimney an adjustable shutter is fitted for the purpose of regulating the area available for the discharged air, and so preventing a back-rush; but, as the air is hurled against this shutter very abruptly, and the position of the shutter frequently incorrect, the device is not by any means an unqualified success. A much better arrangement is Walker's patent V shutter, which contracts the area in a gradual manner, and conducts the air into the chimney, where its velocity is materially reduced before finally escaping into the atmosphere. It is, however, infinitely better to correctly taper the blades so as to entirely obviate the possibility of back-rush than to build a fan with parallel blades and then have to add extraneous appliances to counteract the undesirable effects which such a fan is inevitably bound to produce.

Having briefly given some idea as to why the blades are tapered, I may now state that in building one of the simple fans illustrated the following parts should be procured from an engineering-works: (1.) The shaft. This may be of tough rolled steel. (2.) The plummer-blocks. These should have a bearing length equal to two and a half times the diameter of the shaft, and be provided with oil-feeders of large capacity. (3.) The two sets of arms, formed of T-iron or light tramway-rails bent to the required backward curve (see drawing), with holes drilled or punched for rivets securing the blades, and bosses cast on in the centre. (4.) The belt-pulley, the width of which should not be less than five-eighths of its diameter. Having these parts, the rest of the work is easy.

The walls are built with studs and a lining, C. The latter may be of 2 in. tongued-and-grooved timber, or of two thicknesses of flooring-boards laid diagonally across each other. On the inside of this lining the two circular cribs A, A, are to be accurately fixed and secured with bolts. The segments of the cribs should be scarf-jointed, and the joints plated above and below. The contracting cheek B and expanding cheeks *b* are to be screwed to the segments A and the wall-lining C, and must be very cose fitting. As the fan-blades are to revolve as closely as possible to the contracting cheeks B *without touching them*, the timber for these cheeks must be dressed smooth and true. All timber should be of well-seasoned heart-wood (kauri, rimu, or matai), and receive three or four coats of tar before being put together. After erection all the inside wood- and iron-work should have at least three coats of thick tar, applied hot. An extra coat or two of tar will be an advantage, and enough should be applied to the inside to form a good strong glaze. Too much care cannot be observed in doing this before the fan is set to work, as subsequent coats cannot be applied owing to the moisture contained in the air exhausted from the mine making everything slimy and wet.

Where the main shaft passes through the lining C, the latter should be cut away for a few inches round the shaft, and the space so formed covered with a light iron plate made in two halves (each half having a semicircular opening cut out, so that when placed in position a hole very slightly larger in diameter than the diameter of the shaft is formed for the latter to work through), and bolted on to the linings. The object of this is to isolate the woodwork from the bearings, and so minimise the possibility of such a contingency as the firing of the bearings igniting the woodwork.

The quantity of air which a fan of given size will circulate through the workings of mines cannot be stated with accuracy owing to the very different conditions of various mines. Much depends on the length, area, and state of the airways, and the position the fan will occupy as regards the conditions affecting natural ventilation. To obtain the best results the fan should be erected so as to exhaust from the shaft which nature selects as the upcast, and, if possible, all steam-pipes from the surface to pumping or hauling machinery below ground should be fixed in the same shaft.

The circumferential velocity of fans—*i.e.*, at the tips of the blades—varies in practice from 4,000 ft. to over 8,000 ft. per minute. The mean of these, or, say, a circumferential velocity of 6,000 ft. per minute, will be found a fair speed for the simple fan now illustrated and described, the diameter of which may be from 5 ft. to 13 ft. 6 in. or upwards. The larger size named will be found ample for the requirements of the most extensive mine now at work in New Zealand if placed under anything like favourable conditions. For driving, a steam-engine would naturally be used at collieries, and also at some quartz-mines where water-power is not available, and the idea that any old engine will do should not be entertained. An engine for driving ventilating machinery should be first class, and not liable to be stopped frequently for repairs, and of a type which will work economically as regards consumption of steam. Where water-power is available, as at many quartz-mines, a Pelton wheel will be found a suitable motor for driving.

IMPROVEMENTS IN PUMPING AND AIR-COMPRESSING MACHINERY.

(With Special Reference to the Riedler System of Controlled Valves.)

During the last few years the method of pumping mine-water has been gradually changing. At new mines especially, pumps placed underground, and forcing water from the bottom to the surface, have been adopted in preference to the old style of pumping-engine erected above ground, whilst at some older mines the latter style has been either superseded or supplemented by pumps placed at the bottom of the shaft. The initial cost of large single-acting draw-lift, and plunger pumps, with their heavy rods and pipes, as well as massive engines, beams, gearing, foundations and buildings, is very considerable when compared with that of a modern high-class plant of equal capacity placed at the shaft-bottom. So far back as 1876 a plant of this kind was erected at a large mine in England at which I was then engaged. The pump forced water direct to the surface, a distance of about 1,000 ft. vertical, and practically demonstrated the possibilities of the system. Since then similar methods have been adopted for much greater depths.

Power can be, and is, transmitted from the surface to underground pumps by steam, compressed air, electricity, and endless wire ropes; also to a limited extent by a system of hydraulics. At most collieries and some metalliferous mines steam will continue to be used direct, but there is no reason why mine pumping-engines should be so extravagant in steam-consumption as they often are. It is quite possible to work them on the same economical lines as marine engines, their principal drawback, as compared with the latter, being the distance away from the boilers (which naturally will be erected on the surface); but when steam is generated at a fairly high pressure, and conveyed to the pumps in well-laid pipes of ample area, properly fitted with expansion-joints and thoroughly covered with a good composition of non-conducting material by which the heat will be retained and condensation minimised, the loss of pressure is very small, and with suitably designed engines a reasonably high degree of efficiency may be maintained.

In some instances pumps are driven at a slow rate of speed by quick-running engines, the connection between engines and pumps being made by spur-gearing; but in others the engines are, by the continuation of the piston-rods, coupled direct to the pumps. In the latter case the piston-speed of the engines is no more than that at which the pumps may be run with safety, and is consequently too low for real economy. Modern practice in engine-building is based on the lines of greater efficiency of steam with a moderately high rate of piston-speed. Engines now built for driving mill machinery, electrical plants, steamships, &c., are frequently designed for piston-speeds of from 500 ft. to over 1,000 ft. per minute. With pumps as ordinarily constructed anything

approaching the lower of the speeds named is entirely out of the question, and a little consideration will show why this so.

Putting aside the question of pumps worked by rods from an engine at surface, and having a piston-speed with a limit of about 100 ft. per minute, attention may be confined to pumps designed for erection at the shaft-bottom or in underground workings. These are of many forms, and single, double, treble, and quadruple in their action. Those of the single and duplex direct-acting types, as well as those of the three-ram type, have short strokes: fly-wheel pumps—*i.e.*, ordinary single or coupled engines with pumps directly connected—usually have long strokes; but in neither case is the piston-speed high. In this respect the last-named type can be worked to greater advantage than the former. With the ordinary style of short-stroke pumps it is necessary to have numerous valves both at the suction and discharge. This plainly means that the water has to flow through several passages of restricted area, and is thereby throttled in its course. A very slight calculation will prove that the friction of water flowing through one passage of given area is very much less than where the same superficial area is made up of a large number of passages, and *vice versâ*. The extent of this will be seen from the following example: One passage 6 in. in diameter has an area of 28·27 square inches, and a circumference of 18·85 in.: with passages of one-third the diameter—viz., 2 in.—nine would be required to give an equivalent superficial area; but the combined circumferences are no less than 56·54 in., or practically three times more than the circumference of the larger passage. The circumference multiplied by the length of the passage gives the area of frictional surface. In estimating the frictional resistance through pump-valves the divisions in the valve-box have, of course, to be taken into consideration.

The numerous valves already referred to in short-stroke pumps have a low lift, and are generally fitted with springs to secure quick return to the valve-seats at each change of direction of stroke. The strength of the springs—which has to be overcome each time the valves open—combined with the extra friction of the water through small passages, has an appreciable (if only slight) effect on the engine-power. With a longer stroke the valves are fewer in number and larger, but there still remains the fact that even with a long stroke the piston-speed is limited. This feature is due to the loss or "slip" which takes place at each return of the valves to their seats—a condition which has a decided tendency to cause a series of hydraulic shocks, or what is popularly known as "hammering." A high rate of speed under these conditions endangers the safety of the pump-valves, and so the piston-speed becomes reduced to a point below what, in the case of a steam-engine, is economical in steam-consumption. It will thus be seen that steam-pumps of the fly-wheel type, having long strokes, cannot compare favourably with modern marine and other engines as regards economy in their consumption of steam. This is still more marked in the case of short-stroke direct-acting steam-pumps without fly-wheels, although in both cases advantages may be gained by compounding or by triple expansion where circumstances permit. In order, therefore, to obtain more economical resuls, it is quite evident that some form of pump-valve which will admit of a higher rate of piston-speed, combined with freedom from slip and hammering, will have to be used.

The invention (by Professor Riedler) of mechanically controlled pump-valves has made it possible to work pumps at a piston-speed, which only a few years ago would have been considered incredible. Pumps so fitted are now in successful work in various parts of the world, and some of them are driven at piston-speeds which range from 300 ft. to 700 ft. per minute. Without the means adopted were such as to reduce the hydraulic shocks or hammering to a minimum, such speeds would be entirely out of the question; but the very fact of their having been attained with safety is proof in itself that the desired object has been accomplished. The method of control is simple, and each pump-valve has a positive action: it must make its full lift and sit down on its seat with only a thin film of water between the two faced surfaces.

This action is obtained from the motion of an eccentric on the fly-wheel shaft in the following manner: At a convenient distance back from the fly-wheel (or crank) shaft a disc or rocker is fitted on a fixed centre and connected with the eccentric by a rod. When working, the disc or rocker describes the arc of a circle. To crank-pins fitted on the disc two connecting-rods are secured, and communicate motion to rocking-levers, which raise and lower the pump-valves through the medium of spindles working in bonnets. These spindles—which work through packed glands—are horizontal, and therefore at right angles to the lift of the valves. They are fitted at their interior end with suitable forks for giving the valves the required motion. A thick rubber buffer is also fitted to each valve in such a manner as to prevent injury to the mechanism in the event of any obstruction between the valve and its seat.

An important feature in the Riedler system is that, notwithstanding the high speed attained, only the fewest possible number of valves is used, and in this respect is on a parallel with the large slow-speed Cornish draw-lift or ram pump. The valves are made of ample area for the work required, and have a high lift to prevent throttling of the water. The mechanical arrangement by which the valves are controlled opens the latter automatically; they remain open practically the entire length of the stroke, and are closed again mechanically at the proper moment, thus preventing slip. In this manner a high rate of piston- or plunger-speed becomes possible and valves so operated work satisfactorily against very high pressures. The valves are easy of access, and it is stated that from a record of over fifteen hundred pumps the average life of a Riedler valve is found to be about five years. The illustration (Fig. 1) of a small-sized Reidler pump, connected by gearing to an electric motor, will show how the control of the valves is effected, the principle being the same whatever the size of the pump or nature of the driving-power may be.

Fig. 2 gives a sectional view of a Riedler pump built on the "differential" principle, and, as very few, if any, pumps built on this principle have been yet used in this colony, I quote from a description courteously supplied me by Messrs. Fraser and Chalmers, of London and Chicago, the builders of Riedler pumps, as follows:—

"A differential pump is practically a double-acting pump with but two valves. By arrangement as shown in Fig. 2, it will be seen that an equal amount of work is done on each side of the steam-piston during one revolution. In a single-cylinder double-acting pump four valves are required, one suction- and one discharge-valve for each end of the double-acting plunger. A single differential pump, however, requires but one suction- and one discharge-valve for but one of the plungers—the main plunger. The differential pump has the advantage of always being primed, as will be seen by referring to Fig. 2, where the column-pipe D, the discharge-space C, and the differential plunger-chamber are always in connection. Thus the total pressure due to water-head is always on the differential plunger H. In other words, as long as there is water in the column-pipe the pumping-engine will always have a resistance to overcome even should suction be lost. The arrangement, therefore, prevents undue hydraulic strains on the different pressure parts.

"Because of having half the number of valves this form of pump is simpler than the double-acting pump, and is used until the capacity becomes so great that the valves would become too cumbersome. When this capacity is reached it becomes necessary either to make a duplex or triplex differential, or to use a double-acting pump instead. The double-acting pump-valve would be half the size of the differential pump-valve for the same total capacity. When pumping against high pressures the air-chamber is made of seamless structural steel, or flange-steel, so as to prevent leakage of air. By referring to the illustration it will be seen that the water enters the suction-pipe A, passing into the suction air-chamber, and thence into the suction-funnel B. It should here be noted that the large casting (which acts as a substantial base for the pump) and the suction-funnel B form in the upper part of this casting a large suction-chamber insuring efficient action of the suction-valve E. When the main plunger J moves towards the right it draws a volume of water equal to its displacement through the suction-valve E. On its return to the left, the suction-valve having been mechanically closed, it forces a volume of water equal to its displacement through the discharge-valve F, half of this water passing out into the column-pipe D, the other half passing down and following the differential plunger H. The discharge-valve F now being closed, the main and differential plungers (which are connected by means of side rods) move again to the right, the main plunger again drawing the water through the suction-valve E, and the differential plunger displacing its volume and forcing same through the discharge-passage C into the column-pipe D.

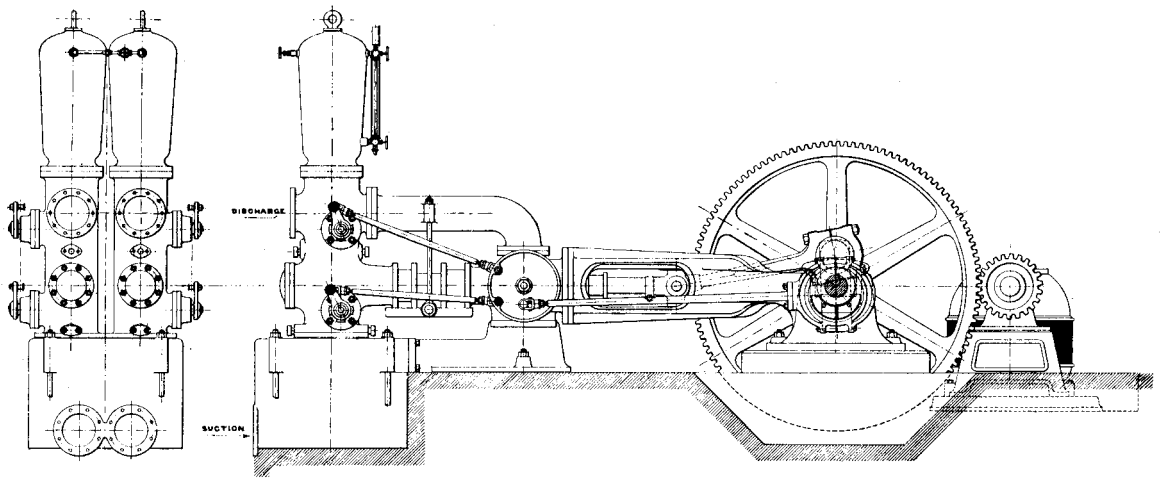
"The cross-sectional areas of the main and differential plungers J and H are generally made in the proportion of about 2 to 1, so as to equalise the work done on both forward and return strokes—in other words, equalising the work as in the case of a double-acting pump. The rods G are the side rods connecting the cross-heads of main and differential plungers. These rods are always in tension.

"It will be noted that in the front of the discharge C, and connecting to the pipe-column D, is a clack-valve for the purpose of holding the water in the column-pipe when it is desired to take out the valves or examine interior parts of the pump. When the pump is working this valve is open, but can be closed when it is desired to stop the pump by means of a lever on outside of clack-valve chamber. These valves are especially necessary in pumps where either side may be run alone. It is a preferable form, because should an ordinary stop-valve be used instead more time would be consumed in closing same, and by carelessness it might not be opened when starting the pump, thus incurring liability to accidents. The clack-valve will open automatically as soon as the pressure inside of pump-body exceeds the pressure in column-pipe."

Of course, pumps were built on the differential principle prior to the invention of Riedler's controlled valves, but Messrs. Fraser and Chalmers appear to make a specialty of this type of pump, in connection with the Riedler system, in single, double, and triple form. Pumps are also built on the double-acting principle (preferably on the duplex pattern), and driven by compound engines of either the ordinary slide-valve or Corliss type.

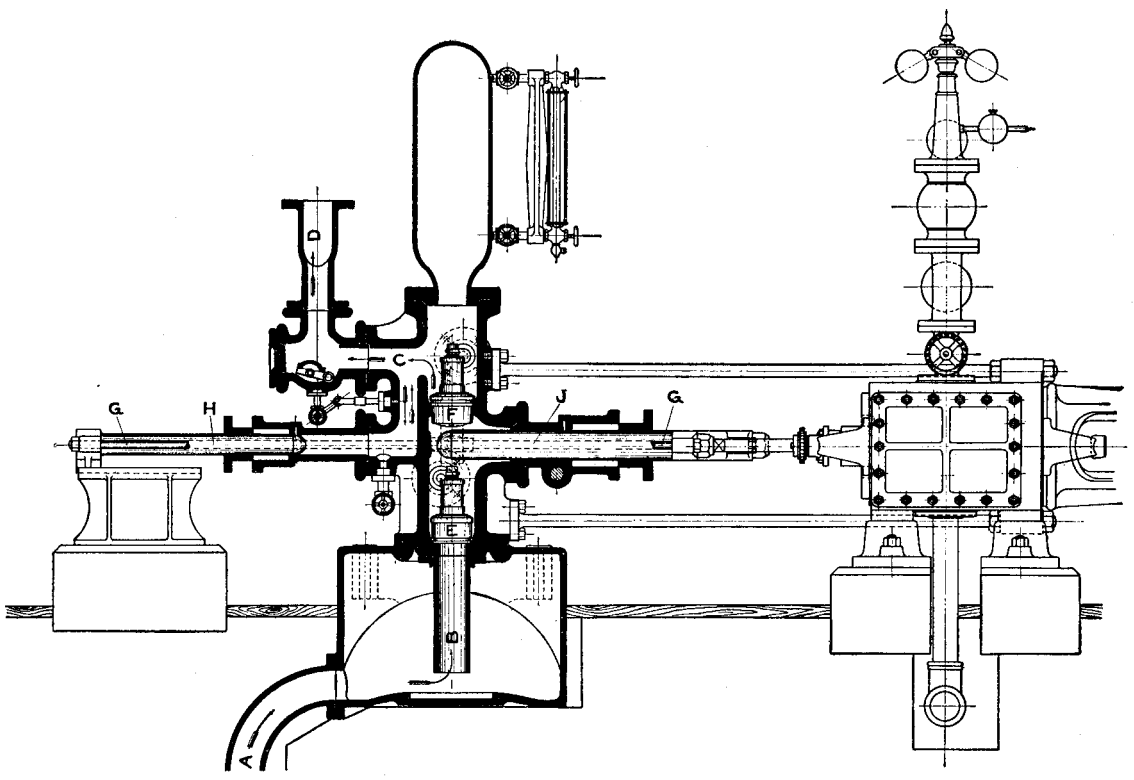
The following table (compiled from information supplied by Messrs. Fraser and Chalmers) gives some particulars as to the capacities, height of column, and piston-speed of Riedler pumps of large size at work in various parts of the world:—

Country or State.	Capacity in Gallons per Hour.	Height of Column in Feet.	Piston-speed in Feet per Minute.
Austria	42,000	900	280
"	48,000	1,500	400
Germany	180,000	900	606
"	33,000	2,480	533
Spain	36,000	1,000	426
South Africa	172,000	110	450
"	14,400	1,520	480
"	10,620	2,000	250
"	17,000	2,000	533
China	25,800	400	310
Alaska	181,000	792	504
California	24,000	1,945	400
Hawaii	500,000	755	500
"	500,000	270	576
Mexico	700,000	53	450
"	41,650	1,654	420



DUPLEX DIFFERENTIAL RIEDLER PUMP.
Driven by Geared Electric Motor. (View in Elevation.)

FIG. 1.



DIFFERENTIAL RIEDLER PUMP.
Built by Fraser & Chalmers.

FIG. 2.

Illustrating Paper
on Improvements in Pumps & Air Compressors.

—KOH-I-NOOR—

—GOLD DREDGING COMPANY LTD—

Scale of Feet.

½ 10' 5' 0' 10' 20'

JAMES BISHOP
CONSULTING ENGINEER

The particulars given above were selected indiscriminately from a large list, but are sufficient to demonstrate that the system of mechanically controlled pump-valves is one which must have an important bearing on future pumping installations in connection with mining-work. It is claimed that as the result of the adoption of Riedler valves, high piston-speed has been made possible; efficiency of steam is gained; durability, simplicity, and accessibility of mechanism are secured, together with freedom from hydraulic shocks and strains; efficiency of operation between wide limits of speed, and consequently capacity; practically no throttling of water, and no slip.

The use of compressed air as a power for driving hauling-engines, pumps, rock-drills, and coal-cutting machinery, &c., under conditions where steam is inadmissible is very general throughout the mining world. It is a safe and convenient method of transmitting power to remote parts of a mine, and the exhaust air, after having done its work in the cylinders, is often useful as an aid to ventilation. In some instances jets of compressed air have been used for the purposes of ventilation during the driving of exploration headings in mines giving off noxious gases, and in England it has been used for many years in the lamp-shops of some collieries for the purpose of cleaning the gauzes of safety-lamps. There is a possibility that compressed air, generated at high pressure on an extensive scale, and distributed to consumers in pipe-mains, may rival the use of gas and electricity for driving motors where comparatively small power is needed. The sphere of its employment in the past may only be a faint index to the extent to which it may possibly be adopted in the future.

Practically accustomed to the use of compressed air since 1873, I have watched with interest the improvements which have taken place in air-compressing machinery. The arguments respecting the piston-speed at which pumps may be worked hold good to a considerable extent in relation to air-compressors, for in reality an air-compressor is a pump dealing with a gaseous instead of a liquid fluid. The piston-speed of the engine to which the compressing cylinder and piston are coupled is dependent on the speed at which the latter may be run with safety to the valves. Until the invention and adoption of Messrs. Pilkington and Forrest's air-cushioned valves at Haydock Collieries, St. Helen's, Lancashire (England), nearly twenty years ago, the speed at which air-compressors could be safely worked was very limited. This invention made it possible to run compressors at a much greater speed; consequently a plant of given size fitted with these valves was capable of doing more work than a similar one fitted with the ordinary valves. I have personally run one of these compressors having a stroke of 2 ft. 6 in. at 136 revolutions per minute, and know that this speed has been greatly exceeded for weeks at a time, the compressor running continuously day and night. This, too, was accomplished without any appreciable clatter or knocking of the valves.

At that time it was usual to compress air at a comparatively low pressure in one stage only, but the adoption of high-pressure steam used expansively in compound as well as triple- and quadruple-expansion engines has led to the consideration of the possibility of adapting the same principle, but in a reversed form, to the compression of air. This is now successfully done, and where compressed air has to be converged a considerable distance it is found more advantageous to adopt a high pressure and reduce same near the terminal station before admission to the cylinders. Whenever possible, the air (which gives out considerable heat during compression) should be reheated immediately previous to use. This tends to increased efficiency, and consequently economy.

The success of the Riedler system of controlled valves for pumps naturally led to its adoption for air-compressors, and similar satisfactory results have been attained. There is no comparison between the working-speed (and consequently the volume of air compressed) of a compressor built on this system and one of the ordinary type as usually seen in our mining districts. The advantages gained by Messrs. Pilkington and Forrest's arrangement are shared by that of the Riedler system, although the methods adopted are totally different. For compressors working in one, two, or more stages the system of mechanically controlled valves having a positive action cannot fail to commend itself.

A two-stage compressor built on the Riedler system by Messrs. Fraser and Chalmers has been at work for some time at the Crown Mines, Karangahake. It is placed in a chamber cut in the mountain-side, and driven by a Pelton wheel 10 ft. in diameter working under a pressure of water due to a head of 80 ft. The compressed air is used underground for pumping, hauling, and rock-drilling.

THE HIGH-SPEED GRAVITATION STAMP.

I am indebted to Mr. D. A. Bremner, of 3 and 5, Crown Court, Old Broad Street, London, for the following description and illustrative drawings which form part of a communication to the Institution of Mining and Metallurgy, London, by Messrs. D. B. Morison and D. A. Bremner:—

The object in the design of the "High-Speed" gravitation stamp has been to combine the established advantageous features of the crushing and discharging elements of the modern cam-stamp battery with improved mechanism for lifting the stamps, which would permit of an increased number of drops per minute, and which would at that increased speed operate stamps of greater weight than it has been found practicable to use with success in cam-stamp batteries, even at the lower speeds to which the cam-stamp is limited.

It was deemed essential that the new mechanism should be capable of being substituted for the cam mechanism of existing cam-stamp batteries, without involving any radical and expensive structural changes or serious stoppages of milling operations during the process of effecting the change. The fulfilment of these conditions was found to be a very difficult task, and something like three years of continuous effort have been absorbed in overcoming the difficulties which were

encountered in the course of devising an improvement upon the cam. Numberless modifications and improvements in every detail have marked the slow and expensive process of evolution of the "High-Speed" gravitation stamp, and each change has been made the subject of searching tests in the various experimental batteries, but there is now ample reason to believe that the machine in its present form fulfils the exacting requirements of milling practice.

Numerous tests have been made at Hartlepool with a five-head "High-Speed" gravitation stamp-battery of the latest design, and, although it is not necessary to explain the minute details of construction, it may be confidently stated that every possible care has been taken to insure ample strength, adequate wearing surfaces, good lubrication, facility of repair and adjustment, security of all fastenings, and general reliability and immunity from break-down.

The hydro-pneumatic lifting-cylinder illustrated in Fig. I. is of cast-iron, and is cast with an annular chamber W surrounding the upper portion, which acts as a reservoir for the water used in effecting the cushioning action. The working portion of the cylinder-barrel B is bored out and fitted with a plug piston forged solid with the piston-rod R, which passes through the metallic-packed gland G, and is connected to the stamp-head by means of a sleeve and stem hereafter described. The top of the cylinder is fitted with a cover F provided with two lugs to receive the gudgeon-pin and the bottom end of the connecting-rod. Water is supplied to the reservoir W by means of a free telescopic pipe-connection I, communicating with a water-channel formed in one of the cast-iron members of the frame of the machine. In order to insure the maintenance of the requisite supply of water in the reservoir, and to carry off the small amount of heat generated by the cushioning action, the water is continuously slowly circulated by means of a small supply-pump. The water is conveyed from the cylinder to a channel formed in one of the lower members of the framework by means of another free telescopic pipe-connection O, and it should be observed that, as there are neither glands nor wearing surfaces in these telescopic pipe connections, it is quite impossible for them to become a source of trouble. In the lower portion of the working-barrel there is a port P, communicating with the reservoir W, and in another portion of the barrel, at a slightly lower level than the port, is a passage communicating with the air-vessel A. Free communication is provided between the top of the cylinder and the water-jacket W to permit of the transfer of the enclosed air. The action of the cylinder is as follows: When the stamp is resting upon the die, and the cylinder is at the bottom of the stroke, the port P is open and the lower portion of the cylinder is filled with water. When the cylinder begins to ascend, the port is gradually closed by the piston, and the water, displaced by reason of the relative motion of the cylinder and the piston, is forced partly into the air-vessel and partly out through the port of gradually decreasing area, at a gradually increasing pressure, until the point is reached at which the pressure below the piston is sufficient to raise the stamp at the then moderate velocity of the cylinder. The cylinder, carrying the stamp with it, continues to ascend at a velocity which increases up to about mid-stroke, and gradually diminishes from that point on to the end of the stroke. The pressure established in the air-vessel being that due to the maximum accelerating force exerted by the cylinder upon the piston, which occurs at the point of pick-up, it follows that as the rate of acceleration falls the air re-expands and does work upon the piston by raising it relatively to the cylinder. When the cylinder reaches the top of the stroke it momentarily comes to rest, but the stamp, in virtue of its acquired momentum, continues to ascend through a height dependent upon the square of its velocity. Before the stamp reaches the top of its stroke the cylinder has commenced its descent, and when the stamp falls its motion is not influenced by the motion of the cylinder, because the port P has been opened by the before-mentioned relative motions of the piston and cylinder, and consequently the water under the piston is perfectly free to escape as the increasing velocity of the falling stamp causes it to gain upon the cylinder as the velocity of the latter is reduced during the lower portion of its stroke. The design and adjustment of the stamp and its lifting mechanism are such that the stamp comes to rest upon the ore on the die when the cylinder is about 1½ in. from the end of its stroke; it therefore overruns the piston and opens the port by that amount, thus permitting the water to flow into the cylinder to make up any deficiency, and the cycle is repeated.

By opening the cylinder drain-plug S any individual stamp can be quickly, though gradually, brought to rest, whilst the cylinder continues to reciprocate, and without affecting any other stamp. As soon as the plug is screwed up again the stamp commences to work with a gradually increasing lift until the normal conditions are established.

The above description will have made it clear that, within moderate limits, the relative positions of the cut-off edge of the piston and the bottom of the port, when the cylinder and the stamp are each at the bottom of their respective strokes, should be maintained, and as the wear of the shoe and die is continually lowering the piston relatively to the cylinder, an easy means of adjustment has been provided, in the form of the sleeve S, shown in Figs. II. and V.. The end of the piston-rod R is slightly tapered, and fits into a corresponding tapered hole in the top end of the sleeve, being held there by friction in the same manner that a stamp-stem is secured to the "head." As, however, the piston and rod form a comparatively light falling part, a cotterway is provided in the bottom of the piston-rod, so that it can be forcibly drawn into the sleeve, and thus obviates the possibility of any troublesome slackness.

In the lower portion of the sleeve is bored a long parallel hole into which the top end of the stamp-stem fits, and is held in place by a gib and key frictional fastening exactly similar to that now used for cam-stamp tappets. The internal dimensions of the sleeve are such as to permit of the required range of adjustment, whilst insuring that when the stamp has been withdrawn from the sleeve to the fullest extent necessary it will still have a bearing over the whole length of the gib. To provide for the easy, quick, and correct performance of this adjustment, for about every half an inch of wear of shoe and die, and to make certain that the adjustment shall not become accidentally altered through slippage occurring between the sleeve and the stem, the latter is forged

with a collar upon it at a suitable distance from the end, and between this collar and the bottom flange of the sleeve are inserted, as required, a series of interlocking horse-shoe-shape plate washers, each half an inch thick (illustrated in Fig. II.). All that is necessary is, at the intervals of time corresponding to about half an inch of wear of shoe and die, to slacken back the three keys, raise the sleeve, insert one of the washers, allow the sleeve to drop again, and tighten up the keys. No measurements whatever are necessary, and, so far as the operation of the stamp is concerned, the man in charge need not even know that a piston and port enter into its constitution. These washers fulfil the additional important function of compensating for the reduction in the total weight of the stamp caused by the wearing-away of the shoe.

The tabulated statement in Fig. II. shows that, in the case of a 1,400 lb. "High-Speed" stamp, the gain in the crushing-capacity of a ten-head mill, due to compensation, amounts to no less than 4 tons per day, or 5·26 per cent.

A V groove is turned in the bottom flange of the adjusting-sleeve to receive a rope by means of which the stamp is turned. The turning-gear, also illustrated in Fig. II., is extremely simple and effective. Each set of turning-gear for one stamp consists of a small rope pulley fitted with a ratchet and carried on a pin at the end of one arm of a bell-crank lever, on the other arm of which is fixed a weight for the purpose of maintaining the required tension in the rope. The bell-crank lever is hung freely upon a shaft common to the set of five turning-gears, and to the same shaft is fixed an arm carrying a weighted pawl engaging with the lower portion of the ratchet-wheel. A piece of ordinary rope establishes connection between the ratchet rope pulley and the rope groove on the adjusting-sleeve. By means of this gear its own reciprocating motion is utilised to effect the turning of the stamp. During the fall of the stamp the rope pulley is free to swing about the centre of the suspension-shaft, and to turn around its own centre, and therefore no transfer of rope takes place to create a turning moment about the axis of the stamp. On the lift, however, the rope pulley is prevented from turning around its own centre by means of the pawl, and consequently a transfer of rope takes place to provide for the difference in the lengths of the two sides of the rope created by the angular motion of the sleeve relatively to the rope pulley, and to permit of this transfer taking place the stamp has to turn.

There are many more or less obvious methods of causing a recriprocating stamp to turn regularly at any predetermined rate; but after an unsatisfactory experience with several gears of the frictional type it was realised that any frictional or positive gear embodying more or less rigid parts would not withstand the hard wear-and-tear accompanying a high speed under the trying conditions existing in a stamp-mill. It was therefore decided that the gear must be connected to the stamp by means of a flexible connection, and that the motion of its parts should be as small as possible. It will be seen, on an inspection of the "High-Speed" stamp-battery illustrated in Fig. V., that the turning-gear can be conveniently placed under the platform above the feeder.

The holding-up gear is illustrated in Fig. III., and its action is so simple and obvious that there is no need for any explanation. It may be pointed out, however, that it has to be called into use only when it is necessary to change the shoes and dies or clean out the mortar-box, because when it is only desired to stop a stamp, without having it raised above the die, it is readily accomplished by means of the cylinder drain-plug described above.

In Fig. IV. is shown a typical modern ten-head cam-stamp mill, suitable for 1,150 lb. stamps running at ninety-five drops per minute, and in Fig. V. is shown the same mill converted into a "High-Speed" gravitation stamp-mill with 1,400 lb. stamps running at 132 drops per minute. It will be seen that the mortar-box, battery-framing, floor, platforms, and feeder remain unaltered, whilst the old heads are utilised, the additional weight being partly obtained by means of auxiliary heads, which are very similar to the chuck-shoes sometimes used. The portions of the cam-stamp mill which are dispensed with are the cam-shaft, cams, bearings, stems, tappets, upper guides, and the jack-shaft and finger-posts. The general construction of the "High-Speed" stamp will be understood from an inspection of Fig. V. The five-throw crank-shaft D, which can be designed for any required order and height of drop, is carried in seven bearings formed in the cast-iron entablature E, which is bolted to two special beams B, attached to the king-posts of the battery-framing. The cylinders are each guided by two round guides G, connected to the top and bottom cast-iron cross-beams F, which are carried by two cast-iron side frames, bolted to the entablature. The component parts of the machine being thus rigidly connected together, the maintenance of their true relative positions is therefore quite independent of the timber framing; whilst in cases where the weight is not too great for transport, the machine complete, with the connecting-rods, cylinders, and pistons, can be fitted together in the makers' shops, so that when it arrives at the mine it can be easily and speedily erected in place.

In the case of the relative weights and numbers of drops per minute (of the same height) assumed above, and which represent a perfectly normal example of conversion, the crushing-capacity would be increased by 70 per cent. as calculated below:—

$$\frac{1{,}400 \text{ lb.} \times 7\tfrac{1}{2}'' \times 132}{12} = 115{,}500 \text{ ft.-lb. per minute.}$$

$$\frac{1{,}150 \text{ lb.} \times 7\tfrac{1}{2}'' \times 95}{12} = 68{,}280 \text{ ft.-lb. per minute.}$$

$$\text{Difference} = 47{,}220 = 69 \text{ per cent.}$$

On this basis:—

14	"High-Speed"	stamps	are equivalent to	25	cam-stamps.
30	,,	,,	,,	50	,,
60	,,	,,	,,	100	,,
120	,,	,,	,,	200	,,

In the case of new mills, where one is not tied to any given distance between king-posts, there is, so far as the principles of the "High-Speed" stamp-operating mechanism are concerned, no reasonable limit to the weight of stamp which can be employed, and it would probably be found advantageous to use stamps of from 1,800 to 2,000 lb. weight, the shoes being made sufficiently large in diameter to reduce the energy of blow per square inch of surface to the limit which has been found the most advantageous in general practice. Such a battery could be constructed with the stamps pitched at 12 in. centres, and, as the crushing-capacity increases directly as the weight and the number of drops per minute, the crushing-capacity of such a mill would be more than double that of a mill with 1,150 lb. stamps running at ninety-five drops per minute. It is therefore quite clear that in a new proposition the great reduction in the number of units would create a large saving in the initial cost of a mill of given crushing-capacity erected ready for work. The cost of the foundations, timber-work, and building would be practically halved, whilst there would be a very large saving in the freight and transport of the mortar-boxes, stamp-operating mechanism, and other exported ironwork for the mill.

It is scarcely necessary to point out the great financial advantages accruing to the creation of increased crushing-capacity by the conversion of existing cam-stamps into "High-Speed" gravitation stamps, as compared with the alternative course of increasing the number of cam-stamps in the required proportion, involving, as it does, expensive foundations, timber-work, extension of building, line shafting, &c., and the importation of a large weight of ironwork per ton of increased crushing-capacity obtained.

Owing to the absence of shock at "pick-up" in the case of the "High-Speed" gravitation stamp, existing cam-stamp frameworks are more than amply strong for the heaviest weight of "High-Speed" stamp which it would be practicable to design for 10 in. centres.

Crushing-tests made with the Cam and "High-Speed" Stamps.

Recognising the impossibility of comparing published data of cam-stamp crushing results with any data which might be obtained from crushing-tests made with the "High-Speed" stamp, owing to the fact that the exact nature of the conditions under which the former results were obtained would be unascertainable, it was decided to carry out a series of tests to determine the connection between the number of drops per minute and weight of stamp and the crushing-rate, and to ascertain the effects of varying screen area and mesh upon the output of a stamp-mill running at a much higher speed than any cam-stamp. For the purposes of these tests special mills were erected in the engineering-works of Messrs. T. Richardson and Sons (Limited), at Hartlepool, and the five-head "High-Speed" gravitation stamp-battery is illustrated in Fig. VI.

Deductions from the Tests.

The tests proved that—

1. Other conditions being constant, the crushing-capacity increases directly as the number of drops per minute and the weight of the stamp.
2. The screen area of an ordinary standard single-discharge five-stamp mortar-box is adequate for a crushing-rate of at least 10 tons per stamp, or 50 tons per battery per twenty-four hours, at 132 drops per minute, and that the screen duty of about 6·55 lb. of ore per square inch per hour, corresponding to the above conditions, is below the limit at which the screen commences to control the crushing-capacity of the mill.
3. Increased coarseness of the screen-mesh increases the crushing-rate in an increasing ratio.
4. Considerable variations in the screen-mesh affect, to a comparatively slight extent, the percentages of extreme fines and of sands which are too coarse for highly efficient extraction.
5. It would appear to be advantageous to use coarser screens than have hitherto been deemed essential to the production of sands sufficiently fine to permit of a high extraction being obtained, and to thereby increase the crushing-rate and reduce the percentage of slimes.

Given a cam-stamp of known weight and height of drop running at a given number of drops per minute, the data obtained from the tests enable a correct estimate to be made of the increased crushing-capacity which will result from the substitution of a "High-Speed" stamp of any given weight, drop, and speed.

COMPRESSED AIR FOR TRANSMISSION OF POWER.

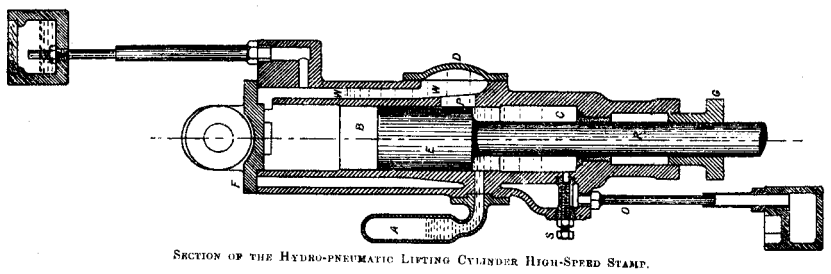
For the following paper I am indebted to Mr. J. H. Ronaldson, mining engineer, Sydney, N.S.W.:—

The transmission of power to a greater or less distance is frequently a subject for the serious consideration of a mining engineer, and, thanks to the advances in scientific and mechanical knowledge made during recent years, the choice of method is varied and the possible efficiency is considerable. The means of transmitting power are steam, water, wire rope, electricity, and compressed air, and the advantages and disadvantages of each of these systems vary with the distance to be bridged and the conditions attending their application.

Steam.—Within moderate distances, and under certain conditions, steam is at once the most economical and satisfactory means of transmitting power, but the limitations to its use are too familiar to require enumeration.

Water.—There is no more valuable agent than water for actuating hoists and for certain pumping operations in mines, where excessive lifts over long distances have to be overcome. Its successful application in the hydraulic pump of Mr. Joseph S. Moore, and in that of Mr. Brown, of

THE "HIGH SPEED" GRAVITATION STAMP.



SECTION OF THE HYDRO-PNEUMATIC LIFTING CYLINDER HIGH-SPEED STAMP.

Fig 1.

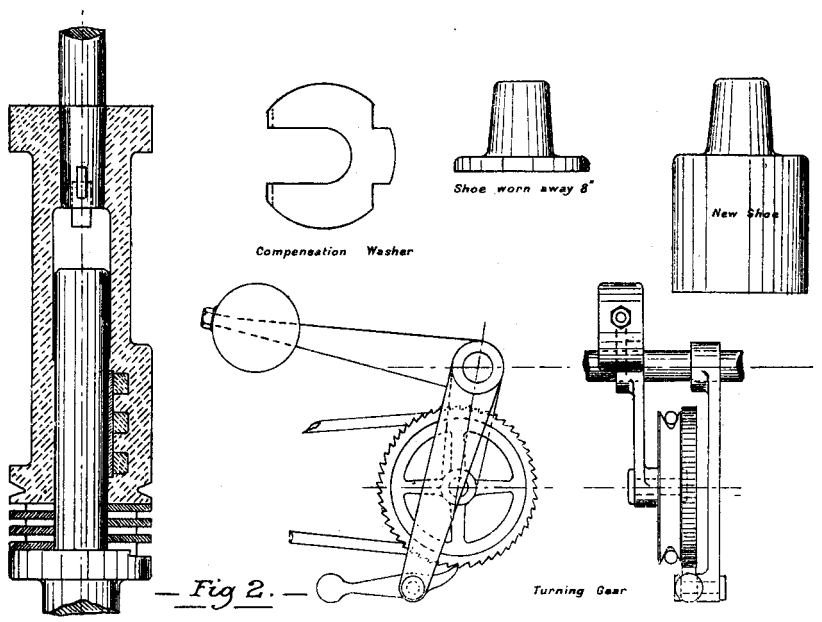
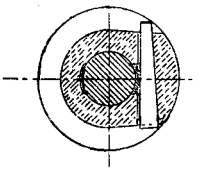


Fig 2.



Sleeve showing compensation washers in place

Total falling weight with new shoe	1,400 lb.
Output per day with 10 heads	85 tons.
Total falling weight with worn shoe	1,252 lb.
Output per day with 10 heads	76 tons.
Mean loss in tons per day	4·5 = 5·3 per cent.
Weight of 9¼ in. of compensating washers	130 lb.
Total falling weight with 9¼ in. of compensating washers	1,382 lb.
Output per day with 10 heads	84 tons.
Mean loss in tons per day	0·5 ton = 0·59 per cent.
Gain due to compensation on 10 heads	4 tons per day = 5·26 per cent. referred to 76 tons.

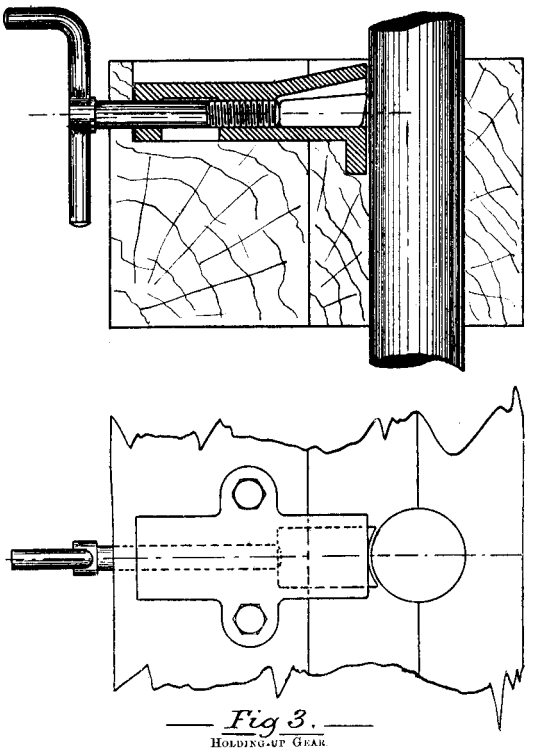


Fig 3.

HOLDING-UP GEAR.

THE "HIGH SPEED" GRAVITATION STAMP.

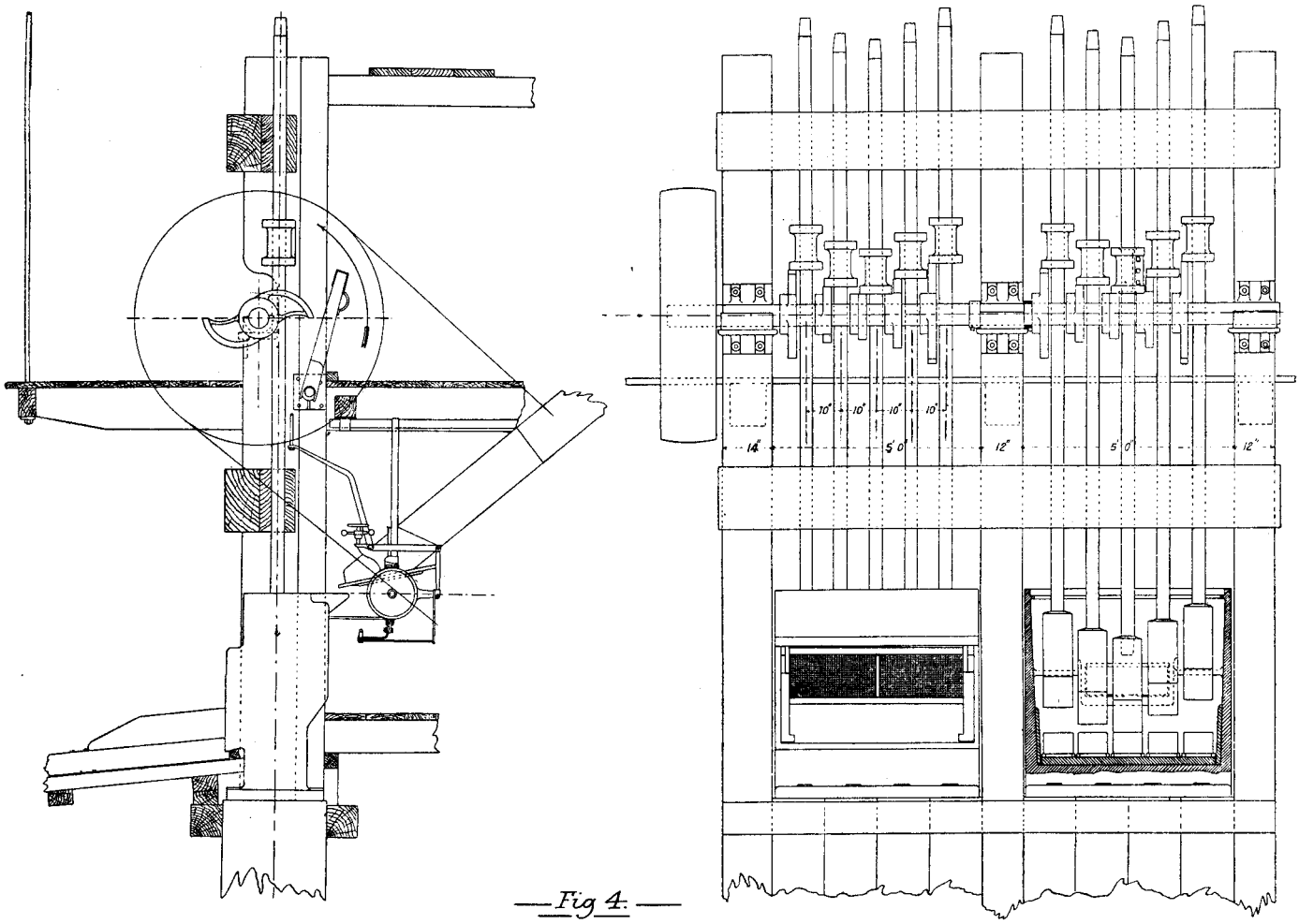


Fig 4.

ARRANGEMENT OF A MODERN 10-HEAD 1,150-LB. CAM STAMP MILL.
Drops per minute = 95.

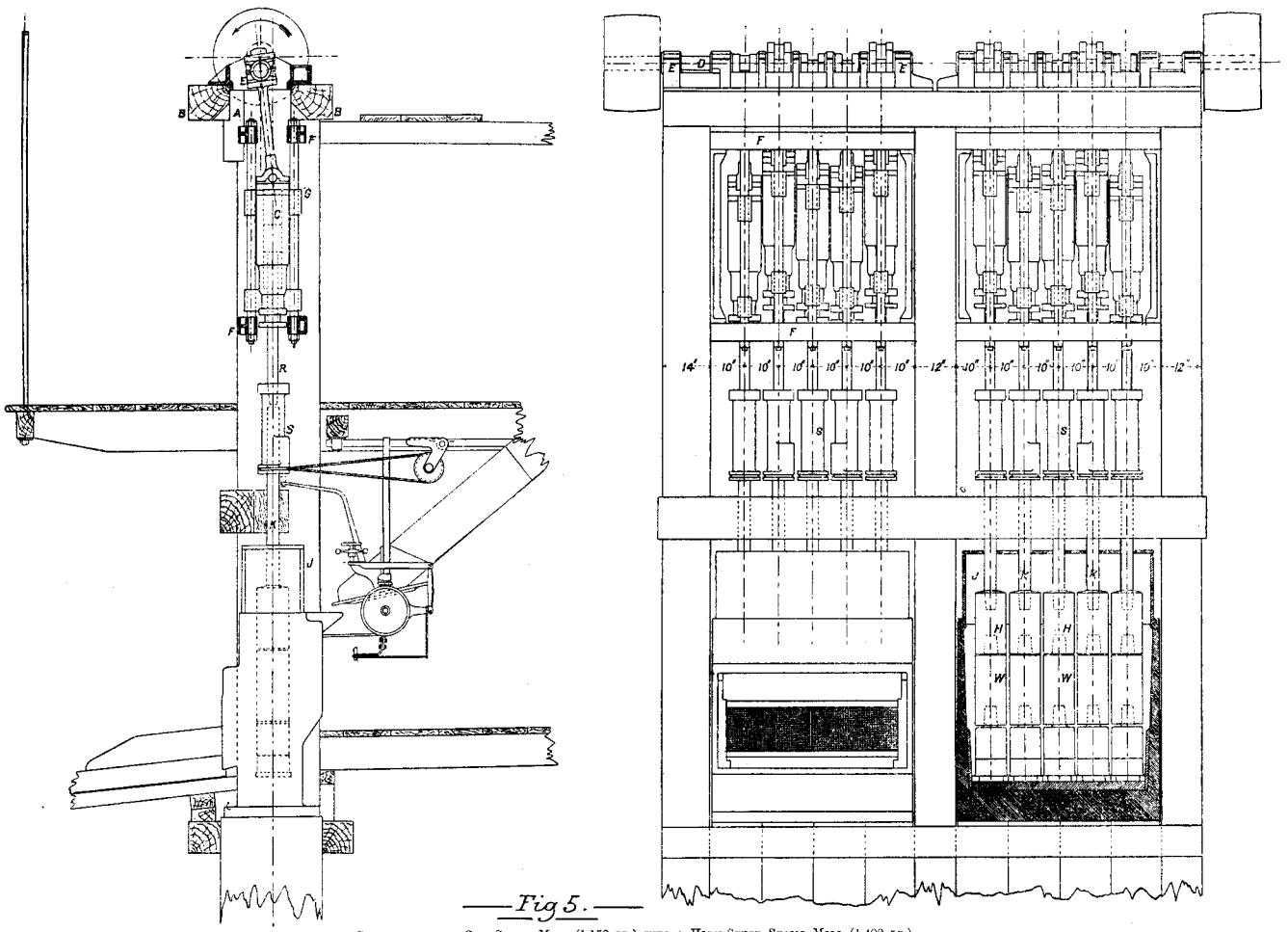


Fig 5.

CONVERSION OF A CAM STAMP MILL (1,150 LB.) INTO A HIGH-SPEED STAMP MILL (1,400 LB.).
Drops per minute = 132. Crushing capacity increased by 70 per cent. The existing framing, platforms, mortars, heads, &c., being utilised.

Edinburgh, is doubtless familiar to some, but is too little known in this country. One of Moore's pumps has been in use at South Bulli Colliery, Illawarra, for some years.

Wire Rope.—For the general purposes of haulage, wire-rope transmission of power is unexcelled, and it has in many instances been used for other purposes, such as pumping in mines. For the latter purpose it has, however, received a limited application, a result due, it is to be feared, to defective installation, through a frequent ignorance of the properties of ropes and pulleys. When one remembers the admirable work done in the way of haulage pure and simple by modern ropes, it is inconceivable to think that this method could not be applied to pumping in mines, in many instances with favourable results. As an example, it may be mentioned incidentally that at the Metropolitan Colliery, in New South Wales, a band-rope of crucible steel 1¼ in. in diameter, taken down a shaft 1,100 ft. deep, and transmitting at least 100-horse power regularly for ten hours per day, worked without change for five years, and was then only taken off to insure perfect safety in an important service. The rope was far from being worn out when changed.

Electricity.—As a competitor with compressed air, electricity occupies the first place. Its use as a means of transmitting-power has of recent years been widely extended, and in mines we have it now applied to pumping, haulage per medium of locomotives, and fixed rope haulage engines actuated by electricity, winding below and above ground, to rotary and percussive drilling, and most successfully to coal-cutting machinery.

Compressed Air.—For the transmission of power this agent has therefore in certain directions serious competitors, in favour of which there has frequently been urged greater economy in first cost, in working-cost, in efficiency, and in applicability. These claims have, however, been keenly contested by the advocates of compressed air, who, on the other hand, contend that it supplies a means of power-transmission at once safe, economical, and efficient for general mining-work. The force of this contention has been much increased by the improvements effected during the last twenty-five years in the methods of generating compressed air and of using it, as will be shown later on. There is little need to dwell on the importance of compressed air as a factor in the economy of many mines, an enumeration of its uses making this sufficiently apparent. It is used to actuate rock-drills, underground haulage- and hoisting-engines, pumps, underground ventilating-fans, Korting's air-injectors, and coal-cutting machines. It is necessary to an intelligent appreciation of the subject to consider the laws relating to air as a gas, and the mechanical causes which render its economical use more difficult than would at first sight appear.

It is proposed, therefore, to consider the subject in the following order: (1.) The laws affecting the compression of air. (2.) The various styles of compressors. (3.) The causes of low efficiency in air-compressors. (4.) Air-conduits. (5.) Methods of using compressed air. (6.) Dangers attending its use.

(1.) Laws affecting the Compression of Air.

Air is an elastic fluid, which, when free from vapour, behaves as a perfect gas. 13·09 cubic feet at ordinary atmospheric pressure, and at 60° Fahr., weigh 1 lb. According to Boyle's law, the volume of a gas varies inversely as the pressure affecting it, so long as the temperature remains constant: consequently, in doubling or trebling the pressure the volume becomes one-half or one-third respectively. According to Charles's law, if the volume of a gas be kept constant, the pressure varies as the absolute temperature, and if the pressure be kept constant the volume varies as the absolute temperature. By the law of the transmutation of energy, work performed on a body, whether solid, liquid, or gaseous, is evidenced by a definite decrease of temperature in that body, and we are familiar with that fact as shown in the simple laboratory experiment of exploding a small charge of gun-cotton in a strong glass cylinder, through the rapid heating of the air contained in it by a sudden jerk of a tightly fitting piston. Consequently, when air is compressed it is heated; when heated it expands, and the volume of air to be compressed is proportionately increased with a corresponding expenditure of the power required to compress it. Could the temperature of the air undergoing compression be kept constant (isothermal) during the process, and the heat taken up from it returned to the air during its expansion in the motor while doing work, all loss from this source would be avoided. This, however, is impossible, and the aim of modern compressors is to prevent an increase in the volume of the air by keeping down the temperature during the period of compression—that is, by approximating to what is termed the isothermal process. It is clear that the least efficient compressor is the one in which no provision is made for cooling the air during the actual period of compression—that is, one working on what is termed the adiabatic process.

(2.) Air-compressors.

Although compressed air had been used to a small extent previously, it was not till 1850, when the Mount Cenis tunnel was constructed, that its use became general.

Two forms of compressors are in use, in each of which a reduction of the temperature of the air is aimed at—in one case by the use of a liquid piston in the cylinder, and in the other way by a water-jacket round the cylinder, or by an internal spray of water. The former is termed a "wet" and the latter a "dry" compressor.

Wet Compressors.—Of these there are two types: (*a*) Where the water-piston owes its energy to the fall of water from a height; (*b*) where the water is actuated by a steam-driven piston. At Mount Cenis, Mons. Sommeiller made use of water with a fall of 86 ft., and by utilising the momentum of the falling water he was able to obtain an air-pressure of 75 lb. per square inch. Though extremely low in efficiency (not more than 6 per cent.), and necessitating clumsy plant, the arrangement gave results sufficiently good. This principle has been applied in other cases, and one arranged by Hathorn, Davey, and Co., Leeds, was successfully used for many years in Mexico.

The application of the principle is simple, and where an abundant water-supply exists excellent results are obtained. The second form of wet compressor has attained a wide application on the Continent of Europe, where, particularly among the highly educated Belgian and French engineers, the principles of air-compression are more thoroughly understood than in Britain. It is, however, a question if their adherence to this method is not an instance of the length to which a desire to reach an ideal perfection may lead one from the best practical solution of a problem. As will be shown later on, the dead space at the end of the air-piston stroke is undesirable, and it was largely to eliminate this defect and to keep the air cool that liquid pistons had such a vogue on the Continent. The water forced back and forward in the cylinder and up the pipe at each end, carrying the necessary valves, filled the dead space. But, unfortunately for this ideal, there are a number of inconveniences attendant on the system. The cooling of the air is insufficient because it is only on the surface of the water. The speed of the piston is extremely limited, and cannot exceed 40 ft. to 50 ft. per minute, on account of the mass of water to be moved; consequently the number of compressors required for a given work is large. The water agitated by the motion is frothed and causes an excessive moisture in the air. Various devices more or less successful have been used to lessen these defects; but, in spite of all, the fact remains that in other countries these compressors have not found favour.

Dry Compressors.—This type of compressor has a cylinder and piston similar to those of a steam-engine, with suitable outlet- and inlet-valves at the cylinder ends. The temperature of the air is kept within reasonable limits by the constant flow of cold water through the water-jacket of the cylinder from the bottom upwards. It is, however, doubtful if the process of cooling, even under the most favourable conditions, does more than keep the cylinder from becoming excessively heated, and so imparting heat to the incoming air. A more thorough method of cooling is obtained by injecting a fine spray of cold water into the cylinder near the outlet-valves. To this the objection has been strongly urged that the presence of water, with its non-lubricating properties, causes an undue wear-and-tear in the cylinder and loss in power.

(3.) Causes of Low Efficiency in Air Compressors.

These causes, briefly stated, are the heating of the air during compression, mechanical defects in the inlet- and outlet-valves, and leakage past the piston. It has been already shown that air when subjected to compression is heated, and that as the volume is thereby increased much power is uselessly expended in dealing with the heated air. The most efficient compressor, therefore, in this regard, must be the one presenting the best cooling arrangement for the air as it is being compressed. That form of compressor in which the piston is represented by the falling water supplying the power, such as Sommeiller's, permits of a very thorough cooling, as the water-piston is renewed each stroke, and the cylinder is kept perfectly cool. But in the second form of wet compressor, such as Dubois's or Mariehaye Colliery, Belgium, in which the water, only slightly renewed per stroke, becomes considerably heated, the cooling is not more perfectly effected than in the dry compressor. As the pressures to which the air is raised become greater the losses from this source become serious, and as the efficiency of the motors increases with the pressure, and the size of the conduits can be correspondingly small, it is desirable, particularly in large installations, to use high-pressure air. The most satisfactory results in this direction have been obtained by stage compression—that is, by pressing the air to a certain pressure in one cylinder, and further compressing it in a second, and, if desired, in a third, or even a fourth. By this system the air is cooled between each stage, and the losses from this source are minimised. For low pressure it is doubtful if any practical economy would result from stage compression, but it is now fully demonstrated that for pressures above 60 lb. the advantages of stage compression are very marked. To diminish the losses caused by resistance to the passage of the air through the inlet, and outlet-valves many devices have been resorted to. In the ordinary valves held to their work by springs the valves rattle or chatter if the springs are weak. On the other hand, if the springs are made very strong a resistance to the passage of the air is set up, resulting in a loss of power which, in some cases, becomes serious. To obviate this defect the valves are occasionally devised to open mechanically. In a short paper such as this it is impossible to enter into the details of the various valves used. It is not uncommon to hear much stress laid on the losses caused by the unavoidable dead space occupied by compressed air at the end of each stroke, and it may be pointed out at once that the loss is not in power, but solely in the volumetric capacity of the compressor. To diminish this inconvenience the air-piston is usually run as close to the cylinder ends as practical, and care is requisite to avoid sailing too close to the wind in this direction and damaging the mechanism. The best plan is to arrange trick passages, or grooves, on the inside of the cylinder, for a short distance back from each end, to allow the air in the dead space to pass the piston to the end in which compression is about to begin. The inside pressure against the suction valves is thereby relieved, and compression on the other side of the piston begins at once. To prevent knocking, through the sudden relief caused thereby at the end of the stroke, a certain amount of cushioning in the steam-cylinder is required. The low efficiency due to leakage in the pistons can only be effectually reduced by carefully attending to their condition. Naturally, the higher the compression the greater the leakage; but stage compression greatly lessens this evil.

(4.) Air-conduits.

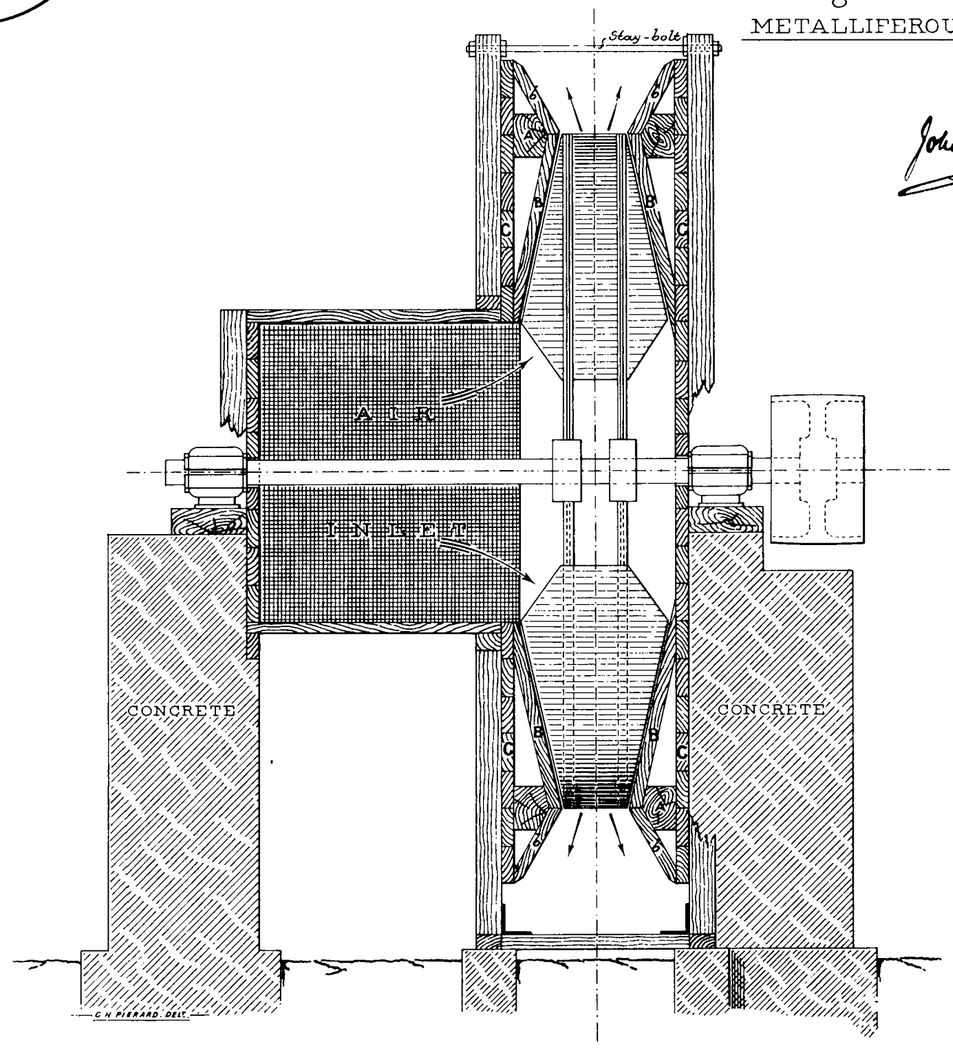
Two considerations are of importance in determining the pipes to be employed; these are the size of the pipes and the character of the joints. The frictional loss in the passage of the air through the pipes increases very rapidly as the diameter decreases, as shown by the following example: If a volume of air at 60 lb. pressure, equivalent to 18,000 cubic feet per hour at atmospheric pressure,

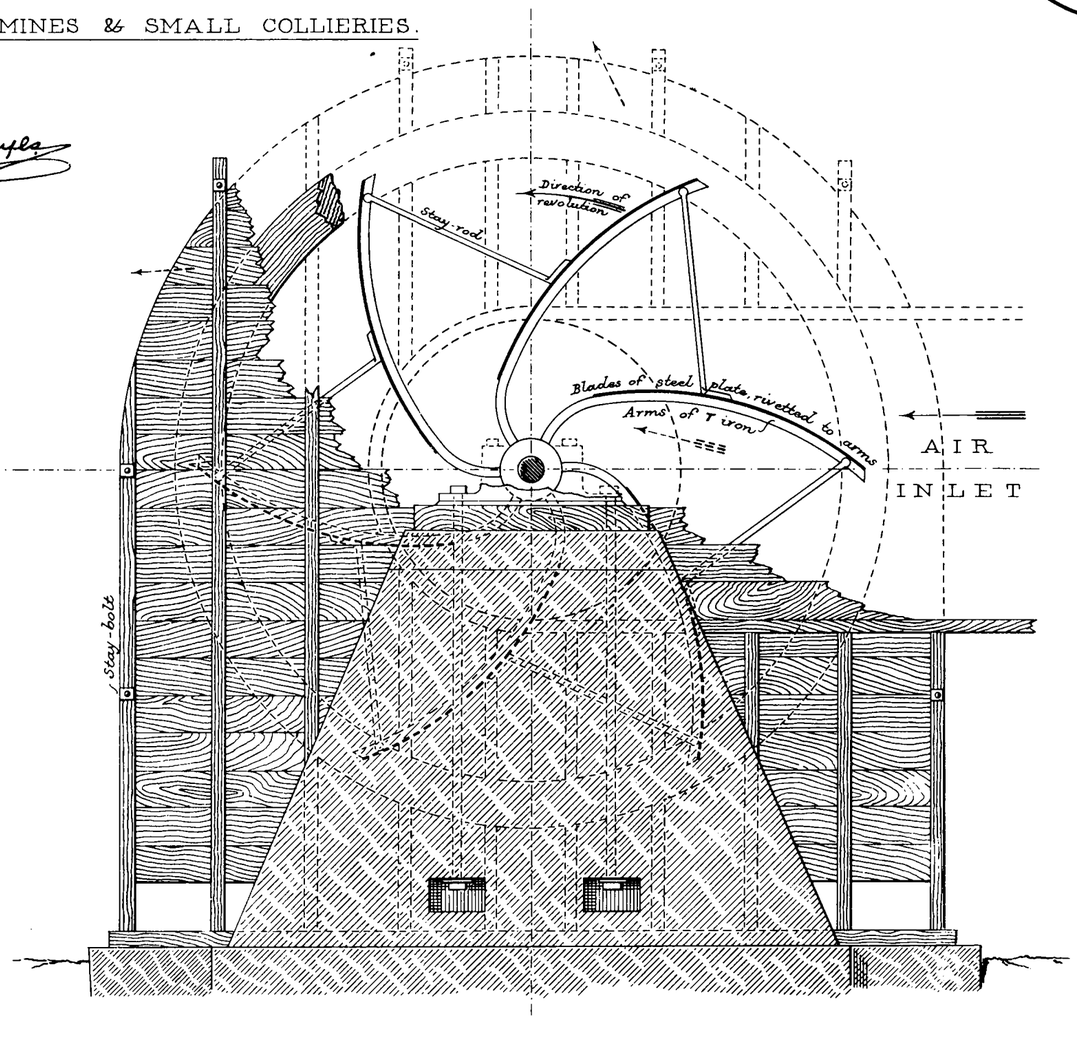
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John Hayes





be passed through 1,000 ft. of pipes, the loss of pressure of air for 2½ in., 3 in., 3½ in. and 4 in. pipes would be 5¾ lb., 2 lb., 1½ lb. respectively. Leakage at the joints through the expansion and contraction of the pipes is a fruitful and at times a serious loss of power. A receiver of suitable size should always be placed alongside the compressor, and where a considerable length of pipes is used it is an advantage to have a receiver as near the motor as practicable.

(5.) Method of using Compressed Air.

When air is compressed it is heated, and when it expands it is cooled. The latter fact gives rise to the inconvenience so frequently met with in air-motors of ice being formed in the ports through the freezing of the moisture in the air. Where the air is admitted to the motor, practically during the whole stroke there is little danger of ice being formed, but there is a terrific waste of power, for it is as important for economy to use air expansively as it is to use steam expansively. While a little moisture in air used expansively results in the formation of ice in the ports, it may be pointed out that aqueous vapour has a specific heat nearly double that of air, and consequently cools less rapidly under expansion than dry air, and the tendency of an excess of moisture is to reduce the cooling. The specific heat of water being still greater, a spray of water may be effectively used in the motor-cylinder to prevent cooling to the freezing-point. The writer was familiar many years ago with an instance where, in the case of large haulage-engines placed underground, the inconvenience caused by freezing was so serious that compressed air was abandoned, and steam, though inconvenient, was substituted. Reheating the air is, however, the most effective method of allowing air to be used expansively without the formation of ice in the ports, and this can best be done by passing the air near the motor through a coil of pipes heated by a small furnace; and a further elaboration, permitting the highest degree of expansion, is affected by introducing a small quantity of water into the heater, where it is converted into steam. A move in the latter direction was made years ago, by the use of a jet of steam in the air-pipe near the motor. In practice it is found that reheating the air not only prevents freezing, but results in a very great economy in the use of compressed air, at a small cost both for plant and fuel.

(6.) Dangers attending its Use.

These are so slight as to be scarcely worth considering, but their existence is worthy of passing notice. A few cases are known where an explosion, more or less marked, has occurred in the receiver placed near the compressor. In these instances combustion has been set up apparently in the carbonaceous matter deposited from the lubricants used in the compressor. The readiness with which a piece of old oily waste takes fire at comparatively low temperature is well known, and it is possible that a similar action may take place in the deposited carbon if subjected accidentally to abnormal heating by a failure in the cooling apparatus of the compressor.

The use of compressed air seems at first sight an extremely simple one, and consequently the principles surrounding its use are seldom inquired into. The results obtained from it are, in consequence, at times appallingly poor, and its reputation as a means of transmitting power suffer proportionately. In the worst forms of machines 10 per cent. only of the power expended may be obtained, and the writer has a distinct recollection of the care with which his Belgian professor demonstrated the impossibility of obtaining more than 33 per cent. of useful effect from compressed air. But to quote from Professor Goodman: "In the best cases, without reheating about 55 per cent., and with reheating 75 per cent., of the total power is given out by the motor." The extensive use made of compressed air in metalliferous mines, particularly for rock drills, should naturally induce an intelligent interest in its use in the Australasian Colonies, and a discrimination in the proper and improper methods of employing it.

In the following appendix will be found the annual reports of Inspectors of Mines, Wardens and other officers; the questions used at the recent examinations of candidates for certificates of competency as mine-managers and battery-superintendents, together with a list of persons holding such certificates; and the usual schedules.

I have, &c.,

John Hayes,

Inspecting Engineer.

The Hon. the Minister of Mines.

APPENDIX.

REPORTS OF INSPECTORS OF MINES.

Mr. James Coutts, Inspector of Mines, Thames, to the Under-Secretary, Mines Department.

Sir,— Inspector of Mines' Office, Thames, 8th February, 1901.

I have the honour to furnish herewith the returns and report on the gold-mining industry in the Hauraki district for the nine months ended 31st December, 1900.

The gold returns from the mines worked by companies on the Thames have been very disappointing, and the important development-works in the Thames-Hauraki Mine have been greatly retarded by a series of misunderstandings about the drainage and contributions from the mines interested, until at last money from England has not been forthcoming to carry operations on any longer, and the Thames-Hauraki Company have applied, and been granted, six months' protection for the mine. Several mines around Coromandel have also been closed down for the want of funds; still, it is pleasing to hear that some of the outside mines are looking well, and likely to give payable returns; also the mines in the Ohinemuri district, such as the Waihi, New Zealand Crown, and Waitekauri Mines, continue yielding excellent returns.

Great Barrier Island.

Barrier Reefs Gold-mining Company (Limited).—This company's crushing plant, with all the necessary appliances, &c., as mentioned in last annual report, was completed some three months ago. The mill bunker has a capacity of 200 tons, and the main storage-bunkers behind the mill have a capacity of 1,000 tons of quartz; from this bunker the quartz is trucked by hand-labour to the mill and dumped into the ore-crusher, one man working eight hours daily being sufficient to keep the battery running continuously for the twenty-four hours. The distance from the main bunker to the mine by the tramway is about half a mile; the trucks are steel, and hold 1 ton of quartz each. They are hauled from the bunker by horses to the various shoots in the No. 3 level, where they are loaded and taken out, then braked down from the tunnel to the battery on an easy graded tramway. The process and treatment of the ore is by amalgamation, concentration, and cyaniding. The cost of milling in December was 9s. 1d. per ton, and of mining and trucking 15s. 9d. per ton; total cost, £1 4s. 10d. Two lots of concentrates were shipped to Australia and sold to a smelting company, and recent experiments made by the battery superintendent, Mr. Noble, indicate that a good extraction of the values from the concentrates can be obtained by agitation in cyanide solution. Should further tests prove this can be done, it will pay to put up a small plant to treat the concentrates at the mill, as the cost of such treatment should not be more than one-third the cost of shipment, smelting, and other charges incurred by sending it to Australia. The operations in the mine are confined to driving and stoping at and above the No. 3 or low level that connects with the battery. The eastern drive on the reef at this level has been extended a distance of 100 ft., and a little stoping has been done on the back of the level, but most of the quartz treated at the mill has been obtained from the stopes over No. 1 and No. 2 levels, where the reef varies from 1 ft. to 3ft. in thickness. The reef has been driven on for a distance of from 700 ft. to 950 ft. at the different levels, and the levels are about 100 ft. apart. The returns show that 3,038 tons of ore has been treated for 3,654 oz. of bullion, value £3401 3s. 7d., exclusive of that received for the concentrates sold; and an average number of eighty-five men have been employed on the property during the year.

Coromandel.

Kapanga Mine.—This company's operations have been directed in prospecting and working on the various reefs and leaders that traverse the property between the 450 ft. level and the surface, employing on an average thirty-eight men; but the various places tried have ended in disappointment. This is to be regretted, as the company have worked the mine continuously for a large number of years on calls, and have received no dividends for the very large amount of money that has been expended on the property. The reefs operated upon have been from 6 in. to 3 ft. in thickness, and during the nine months 73 tons of general quartz and 72 lb. of specimens have been crushed and treated for 151 oz. 16 dwt. of gold; value, £434 18s. 11d.

Hauraki Mine.—During the period under review work has been steadily carried on, the operations being chiefly confined to driving and stoping on the reef and leaders known to exist above the Nos. 1, 2, 3, and 4 levels. These vary from 2 in. to 2 ft. thick. The greater part of the work has been carried on over the back of No. 3 level, where the No. 1 Legge's, and cross leaders were worked with excellent results. On the No. 4 or low level the Castle Rock and other reefs are being operated upon, but apparently no rich chute of ore is met with as in the upper levels, and no new or important discoveries have been made. 1,130½ tons of quartz was treated for 2,934 oz. 17 dwt. of gold; value, £9,148 7s. 3d. An average of seventy-nine men have been employed.

Blagrove's Freehold Mine.—Operations have been steadily carried on in this mine. The results have been anything but encouraging for the large amount of work that has been done. Driving, sinking, stoping, and prospecting-work generally were prosecuted on the eastern and western sections of the property. Sometimes encouraging prospects were obtained, but unfortunately no payable ore to any extent was met with, owing, no doubt, to the country being very much broken and the leaders heaved about. 10 tons of quartz and 15 lb. of specimens have been treated for 22 oz. 9 dwt. of gold; value, £67 2s. 8d. An average of eighteen men have been employed.

Kathleen Mine.—This is a freehold property, and is owned by an English company, who have expended a large sum of money in developing the property. The claim being situated on low-lying ground and only a few feet above sea-level, expensive pumping and winding machinery had to be erected to enable the work to be systematically carried on. A shaft was sunk to a depth of 320 ft., and crosscuts and other work carried on at the 200 ft. and 300 ft. levels. Over 1,000 ft. of crosscut drives were put in, and 1,190 ft. were driven on Carlyon's, Hartridge, and Hauraki North reefs. Although the reefs were well defined, nothing of a payable character could be found, and, the future prospects not being encouraging, operations in the mine have now been suspended.

Kathleen Crown Mine.—This mine is on freehold property, and was closed down in the early part of the year pending a reconstruction of the company to raise money to further open up the reefs that were intersected at the different levels driven from the shaft, from which encouraging prospects were obtained. Operations have lately been resumed, but work is being carried on at the surface-levels until further instructions are received from London. Six men are employed.

Golden Pah Mine.—An average of twenty-one men were employed in this mine up to the month of October last, the work being directed in opening up the reefs and leaders, which vary from 2 in. to 3 ft. in thickness at the 80 ft., 130 ft., and 180 ft. levels. Small quantities of picked stone were occasionally obtained, but not sufficient to pay, and, as a considerable amount of money has been spent in opening up the mine with little prospect of getting remunerative returns in the near future, operations have been suspended. 40 tons of quartz was treated for 69 oz. 19 dwt. of gold; value, £220 3s.

Hauraki South.—A little work was done on this ground at the surface-levels by tributers. Not finding anything to pay they stopped work, and the small pumping and winding plant, together with the buildings erected on the mine, were sold by auction to pay wages, &c., and a plaint has been laid for the forfeiture of the ground.

Hauraki Freeholds (Limited).—The property comprises an area of 95 acres, situated on the main spur which runs down from the Kapanga Mine to the sea-beach near the wharf. The freehold portion of the property includes the old Wynyardton Township, and the leasehold of 8 acres consists of the Welcome Find and Galconda. The base of operations (from which all future work will be carried on) is the Welcome Find shaft, where there is erected a substantial pumping and winding plant. The shaft is down to a depth of 230 ft. below the surface, and three levels have been opened out from it. From the No. 1 or 110 ft. level there are at present two main crosscut drives being extended in a north-west and south-west direction. It is considered these will intersect all the different lodes that traverse the company's property, and as soon as the reefs are opened up at this level the second and third levels will be extended to open up the reefs at the lower levels to enable a regular supply of ore being kept up. Gold in payable quantities has been mined to a depth of 150 ft., and there is every reason to believe that the chutes of ore will continue down to a much greater depth, with a fair chance of a rich patch of gold being found. 22 tons of general dirt was crushed for 5 oz. 14 dwt. of gold; value, £16 13s. 5d.

Hauraki Main Lodes.—This mine is situated on the foreshore. A large amount of work has been done, and money expended in the erection of machinery, sinking a shaft, and general development, but, as nothing in the shape of a payable reef was discovered, operations in the mine have been suspended and the machinery sold. Ten men were employed in the mine for a short time.

Hauraki No. 2.—This mine has been steadily worked, two men being employed in crosscutting and driving on reefs and leaders at the surface-level. The company have lately increased their area of ground by taking in a portion of the Zealandia Claim, on which no work has been done for some time past. 9 tons of quartz was crushed for 3 oz. 5 dwt. of gold; value, £9 15s.

Bunker's Hill.—This company has had an average of eight men continuously employed during the last nine months, the operations being directed in driving and stoping on what is termed the 4 in. leader over the back of No. 3 level. A little work has been done on the cross-leader at No. 2 level, and a trial crushing of 33 tons was broken out of the big reef and sent to the mill for treatment. This gave a return of a little over ½ oz. to the ton. 61 tons of quartz and 72 lb. of specimens were treated for 165 oz. 18 dwt.; value, £467 0s. 3d.

Trig Hill.—This mine is still being worked by Moore and Verran (tributers), who have been engaged in driving on a leader varying from 2 in. to 4 in. in thickness. At the surface-level 37 tons of quartz has been treated for 27 oz. of gold; value, £81.

Ring's Hill.—Mr. Horne has had one man employed on this ground, and took out 3 tons of quartz. On being crushed the yield was 4 oz. 5 dwt. of gold; value, £12 15s.

Cabbage Bay District.

Extended Quartz Claim.—Two men have been continuously employed. Their work comprised prospecting and driving on leaders varying from 2 in. to 9 in. in thickness at the surface-levels. They have had what is termed Vizard's battery repaired, and have had two parcels of general dirt, consisting of 18 tons, treated for 20 oz. 13 dwt. of gold; value, £57 18s. 4d.

There are a few other men prospecting in this district, but no new or important discoveries have been reported.

Kennedy Bay District.

Macoronic Mine.—Two men have been steadily employed on the property, their work resulting in a good deal of driving and trenching on the leaders, which vary from 2 in. to 3 ft. in thickness. Most of these carry a little gold, but so far nothing has been discovered that might be considered payable. 1 ton of quartz broken out from one of the leaders was treated at the public battery, Coromandel, which gave the moderate return of 9 dwt. of gold; value, £1 4s. 9d.

Keep-it-Dark Claim.—This claim has been worked by W. McNeil and party, who have had three men employed on the mine for some time past, the work being confined to driving on the small leaders that have been intersected in the No. 1 level, from which 16 cwt. of stone was treated at the Hauraki Associated battery for a return of 11 oz. 7 dwt. of gold; value, £30 4s. 3d. The Baden-Powell Claim is worked by the same party, and the leaders are similar to those in the Keep-it-Dark Claim. From this claim 1½ cwt. of general quartz and 122 lb. of specimens were treated for 41 oz. 14 dwt. of gold; value, £114 13s. 6d.

Lilly Claim.—Two men employed in this claim. They have cut through several leaders in surface-drives driven by them, and, although good dish-prospects can be obtained in the creek close to where they are working, yet so far no payable quartz has been met with. A trial parcel of 2 tons was put through the battery for 1 oz. 2 dwt. of gold; value, £3 0s. 6d.

There are also eight men prospecting in this district. No important finds have been reported by, nor returns received from, them.

Waikoromiko District.

Four-in-hand Mine.—Operations in this company's mine have been vigorously pushed ahead, the work being chiefly confined to driving and stoping on the reef above No. 1 and No. 2 levels where the reef maintains an average width of 2 ft. throughout, and has yielded a little over 1½ oz. gold to the ton. Although no rich chute of ore has been met with, excellent hauls of specimens have been obtained from time to time as the work proceeded. A rise has been put up over the back of No. 2 level, and a connection made with No. 1 level, the distance between the two levels being 70 ft.; and from this rise an intermediate level has been started, and driving is now proceeding on the reef, which is looking well, gold being freely seen in the stone in breaking out the quartz. A surface-level is being driven with a view to getting under a run of gold worked in the Cuirassier section, and prospecting has been done on other portions of the property, but nothing of importance discovered. 824 tons of ore was treated for 1,317 oz. 18 dwt. of gold; value, £3,768 17s. 3d., out of which £1,125 was paid in dividends, making a total of £2,250 paid in dividends since commencing work. Twenty-one men are employed.

Lillis Mine is situated on the Kauri Freehold Estates Company's property, and is worked by tributers, two men being employed, who are working on small leaders on the surface-levels. They crushed one-third of a ton for 5 oz. 15 dwt. of gold; value, £13 19s.

New Trilby Mine.—This claim contains 5 acres of ground, and is worked by two men, who are engaged in working on leaders from 1 in. to 3 in. in thickness. Only the best of the quartz is sent to the battery for treatment. 2 tons of ore was treated for 99 oz. of gold; value, £290 5s. 9d.

Forest Queen (Area, 20 acres).—This is owned by a syndicate, who have confined the operations in the mine to working on the leaders at the surface, No. 2, and low levels. At No. 2 level the McIsaacs reef was intersected about 190 ft. in from the mouth of the tunnel. It was driven on for a distance of 140 ft., and from the stopes on the back of this level some very good ore was obtained, but, owing to the mine being situated a distance of six miles from an available crushing plant, only the best of the ore was selected for treatment. As good ore was found in the floor of this level, it was decided to put in a level 100 ft. lower to intersect the reef, but after driving it 116 ft. the funds ran out, which was to be regretted, as the country-rock was of a very favourable description, and other leaders that are known to exist may have been met with at any time. 4 tons of ore was treated for 79 oz. 7 dwt.; value, £235 6s. 4d. Three men employed.

Tokatea.

Royal Oak of Hauraki (Limited).—This property was granted protection in April, and was closed down until the month of May, when work was again resumed with twenty men, but at the end of August the number of men was increased to forty. The principal work carried on during the last nine months has been the further development of the property, the main drives on the tribute lode being extended east and west. The main rise from No. 5 level is being continued, and the management expect to complete the connection with No. 3 level about the end of January, 1901, when intermediate levels will be driven off from the rise, and the block of ground (189 ft. in depth) between the said levels will be thoroughly proved, and from which payable results are expected. During the course of developments a leader, now known as "Turnbull's leader," was discovered, and a large amount of driving and stoping has been done on it with most satisfactory results. The company is now being reconstructed, and a vigorous course of development has been decided upon; therefore a much larger number of men is likely to be employed in the next few months. 282 tons of quartz and 1,004 lb. of specimens were treated for 591 oz. 2 dwt.; value, £1,487 12s. Forty men were employed.

Hauraki Associated Mine.—The company's operations on the Rainbow and Foot-wall leaders at No. 3 level, from which payable ore was fully expected, did not give as good results as anticipated. As all the capital of the company had been called up, and there was no money in hand to proceed with further development-work, the directors decided to stop operations on their own account, and let portions of the mine on tribute until the company could be reconstructed. Although the tributers have not discovered anything of importance, yet they have been successful in producing some payable ore, and sufficient to meet the expenses incurred in breaking and treating it. 24 tons of quartz was treated for 153 oz. of gold; value, £425 19s. 4d. An average of eight men have been employed.

Harbour View Mine.—This mine is worked by tributers, their operations being directed to working on the leaders that are opened up, and from which rich specimens have been obtained. As they are not opening up what might be considered new ground, the chances of any important discovery is remote. 14 tons of stone was crushed for 52 oz. 12 dwt. of gold; value, £144 13s.

West Tokatea Gold-mining Company.—This company's operations for the last nine months have been on a limited scale, work being solely confined to the No. 2 level. Two men have been employed in opening up blocks of ground on the Nos. 3 and 4 leaders, and the prospects met with have been of a very satisfactory character. No stoping on the leaders has been done, as the company are awaiting the erection of their three-stamp battery and two berdans, which will be finished by the end of February next, when crushing will be commenced, and sufficient men will be put on to break out quartz to keep the mill constantly running. Five men have been employed.

Queen of the North.—This mine is worked by tributers, who have been employed working on the small leaders that run through the property. As only a limited amount of quartz is broken out, the quantity of ore crushed is small after it is selected. Couch and Howes (tributers) crushed 3 tons for 32 oz. 4 dwt. of gold; value, £88 11s.

Tokatea Consols Mine.—This mine was under protection for the greater part of the nine months, and very little work of any kind has been done on the property for some considerable time. When the mine was sold it was fully expected that work would be more vigorously proceeded with than for some time past, but this has not been the case. Of late nothing has been heard of any systematic scheme to develop the property.

East Tokatea Mine.—This mine is still being worked on tribute by Silke and Oliver, their attention being directed to following up the small leaders, from which a large amount of specimen stone has been obtained from time to time. They had 5 tons of ore and picked stone treated for 48 oz. 5 dwt. of gold; value, £124 5s. 10d. Two men employed.

Hauraki Gem Mine.—This mine is worked on tribute by Gunn and party, who have been prospecting and working on the small leaders, but they have not been successful in making any important discovery, and have received very little for their labour. They crushed 3½ tons for 7 oz. of gold; value, £18 4s.

Scotty's Mine.—This company's operations have not given as good results as could be desired for the large amount of money that has been expended in developing the mine. The men for some time past were mostly employed on Scotty's reef at the Corby level, where excellent stone was occasionally obtained, and the indications were such as to lead the management to believe that a rich chute of ore was going to be met with as the drives advanced. As no important discovery was made (all the available money for development-work being expended, and sufficient gold not being obtained from the mine to meet the current working-expenses), instructions were received to close the mine down until the directors gave the shareholders an opportunity of considering the advisability of reconstructing the company or otherwise. The company crushed 101 tons 1 cwt. of ore for 217 oz. 18 dwt. of gold; value, £639 11s. 3d. Seventeen men were employed.

New Hauraki Gold Properties.—This mine, which is better known as the "Success," has been steadily worked till within the last month, when instructions were received to close down the mine, the reason given being the want of funds. This is to be regretted, as the company has expended a very large sum of money in searching for the precious metal. Although rich specimens were obtained occasionally, and the prospects appeared most encouraging at times, yet it invariably ended in disappointment. As the country-rock is hard, the leaders that carry the gold in most cases are very thin, and of a very patchy nature. The company's operations were latterly directed to developing the Success branch leader at No. 3 level, where a small quantity of good ore was broken out, and 160 lb. of the selected ore crushed for 79 oz. 17 dwt. of gold; value, £232 10s. 2d. Twelve men were employed.

Glencoe Mine.—This mine is situated near the Triumph battery, at the head of Paul's Creek, and is worked by A. H. McNeil and party, who have discovered several reefs carrying gold, varying from 9 in. to 5 ft. in thickness. They have driven on what is termed the No. 1 reef 10 ft., and obtained good prospects; also driven on No. 2 reef 30 ft., sunk on it 7 ft. and stoped out over the level 12 ft. by 25 ft.; and have crushed 1 ton of quartz for 16 oz. 7 dwt. of gold; value, £46 19s. 10d. They now intend to put in a low level to intersect the reefs about 60 ft. below the present drive.

There are a few other men working in this locality who remove from place to place.

Karaka Block.

Poneke 2 and 3.—There has been little or no work done on this property for some time past.

Pukemaukuku.

Aiken's Freehold.—The mine is being steadily worked by three men, who are employed in prospecting on the various reefs running through the property. It is said excellent prospects are obtained, but no gold returns have been received for some considerable time.

Preece's Point Mine.—There has been little or no work done on this property for some time past.

Tiki District.

Progress-Castle Rock.—A considerable amount of work has been done in development on the Progress-Castle Rock and Reynold's reefs. The former has not proved as good as anticipated, and consequently operations on it have been suspended for a time. The work in hand is being directed to opening up Reynold's reef in the Matawai section. A rise has been put up from the bottom level with a view to proving the reef upwards; after rising a few feet the reef began to improve, and opened out to 15 in. in thickness, showing gold freely in the stone. Stoping operations were then commenced from the rise (on the reef) over the back of the level northwards, and here encouraging results are being obtained. The drive on the reef at the bottom level is also being extended north, and is looking exceedingly well. 180 tons of quartz and 135 lb. of specimens were treated for 188 oz. 8 dwt. of gold; value, £555 10s. 2d. An average of seven men were employed.

Coromandel Freehold.—Beyond a little prospecting, no work of any consequence has been done on this property for some considerable time.

Prospero Mine.—The work in this mine is still being directed to extending the low level for the purpose of intersecting the reef. Two men are employed.

There have been a few men engaged intermittently on some of the other mines in this district, but I have heard of nothing important being discovered.

Manaia District.

There have been a few men employed prospecting on the Leading Wind, British Fleet, and Golden Hill Mines. No returns.

Opitonui.

Kauri Freehold Estates Gold-mining Company.—Operations in this mine have been vigorously carried on during the period under review, the operations chiefly consisting of opening up and developing the reefs at the various levels. In the Carvall section the shaft has been sunk a further distance of 100 ft., and a chamber opened out at what may be termed No. 2 level. From the chamber a crosscut drive is being put in to intersect the reef, which should be met with in about 80 ft. of driving. When the reef is cut it is the manager's intention to drive north and south on it and open up the blocks as expeditiously as possible. There is every reason to believe that valuable blocks of ground will be opened up here, as good payable ore was obtained in driving on the reef in the No. 1 level from the shaft. Maiden section: Sinking operations are proceeding in the main shaft, which is down a depth of 62 ft. below No. 2 level, and the intention is to sink it a further distance of 40 ft. before opening out for the No. 3 level, when a chamber will be opened out and a drive put in to cut the reef, which should be met with in 112 ft. of driving from the shaft. The No. 1 and No. 2 levels—on the reef north of the shaft—are also being extended to open up ground to be ready for stoping, so as to enable a constant supply of ore being obtained to keep the battery constantly crushing when the slime plant is completed. This is now under construction, and is expected to be finished in the course of a few weeks. There has been very little stoping done on any of the reefs for some time past, and the ore that is obtained from the drives now being extended on the reefs is about sufficient to keep the battery running eight hours a day. This will be continued until the slime plant is completed. Lanigan section: Operations in this section at the deep levels have been suspended for some time, and the water has been allowed to rise in the shaft to the surface outlet, pumping having been dispensed with for the present. The main adit-level on the surface is being extended towards the Hilda on the reef, and some work is also being done on the reef in the surface-levels at the Hilda. 11,923 tons of ore has been treated for 6,636 oz. of bullion, value £13,322 5s. 2½d.; 165 men have been employed.

Kuaotunu District.

Mining operations on this part of the goldfield have been very limited, owing to the Mariposa and Kapai-Vermont Mines having been closed down during the year pending arrangements for the amalgamation of the two companies for the purpose of raising capital to enable them to develop the mine at deeper levels. This, I am informed, has been arranged, and it is anticipated that systematic operations will soon be resumed.

Great Mercury Mine.—This mine has been steadily worked by a party of seven tributers during the last nine months. Their operations have consisted in driving and stoping on the No. 1 and Red Mercury reefs on the eastern section of the property. Their time expired in December, but they have retaken the mine on tribute for another term, and have commenced to open up the Try Fluke reef and hanging-wall lead at the No. 2 level on the western side of the hill, where a payable chute of ore was previously worked by the company. 346 tons of ore was treated for 212 oz. 16 dwt. of gold; value, £507 15s. 9d.

Irene Mine.—This mine is owned by an English company, and has been worked for some time past by White and party (tributers), who have done a considerable amount of work on the different reefs, and especially on the Try Fluke reef, where they have stoped out a large block of ground over the No. 2 and No. 3 levels. The work at present is confined to extending the drive on the reef in a north-east direction—with three shifts—for the purpose of opening up a block of ground. The country-rock in the face of the drive is very tight, and the reef is a little split up, but it is expected that it will improve in thickness and quality as it is stoped upon from the level. 512 tons of ore was treated for 392 oz. 10 dwt.; value, £803 16s. 6d. An average of seven men were employed.

Waitaia Mine.—This mine has been worked steadily with from three to six men, who have been employed in driving on and developing the reef in No. 3 level. The reef has varied in size from 6 in. to 4 ft. in thickness. A limited amount of stoping has been done over No. 5 level. The mine is well opened up on the various reefs, and the company are considering the advisability of erecting a crushing plant near the mine to enable them to treat a large quantity of ore that is in sight which would not pay under present arrangements, but is said would pay handsomely if the company had a battery of their own and a cheaper mode of conveying the ore from the mine to the mill. 371 tons of ore was treated for 448 oz. 6 dwt. of gold; value, £1,279 15s. 5d.

Juno Mine.—This mine is worked by Campbell and party (tributers), who have directed their operations to extending the low level a distance of 120 ft., and stoping out the leader from the back of the level for some distance upwards. The leader that carries the gold varies from ½ in. to 1½ in. in thickness. 5¼ tons of general ore and 119 lb. of picked stone was treated for 252 oz. 5 dwt. of gold; value, £579 15s. 3d.

Handsworth Mine.—This mine is worked by Mr. Woodcock, who has completed the erection of a three-stamp battery, and has crushed 56 tons of quartz. He only saved the gold that was caught on the plates; the tailings were collected, and will be treated when he gets berdans erected. The

work in the mine is confined to stoping on the No. 2 reef, and gold has been seen frequently in breaking out the quartz in the stopes for over 100 ft. in length. The reef varies from 1 in. to 18 in. in thickness, and has been driven on for a distance of 200 ft. 56 tons of ore was treated for 141 oz. 13 dwt. of gold; value, £345 8s. 10d.

Mercury Bay District.

Colorado Prospecting Claim.—This ground is held by a syndicate, who are carrying on work on the surface-level by contract. The reef has been driven on south of the crosscut for a distance of 100 ft. For the first 30 ft. the reef was 4 ft. thick, and assays made from time to time gave a value of from £1 to £1 5s. per ton; but as the drive proceeded a softer class of country was met with, which had the effect of causing the reef to split up into stringers, and the assays taken from here were not so good as where it was more compact. 25 ft. have been driven on the same reef north; here it is from 18 in. to 3 ft. thick, and assays about the same as the reef on the south side of the crosscut. The shareholders are now considering the question of opening up the reef at a lower level, as it is more solid and compact (in tight country) and assays better. They are of opinion that where they have been working is too close to the surface. Two men have been employed.

Mahakirau.

Peep of Day Claim.—This claim has been worked by two men continuously, who have completed about 500 ft. of driving, and done a considerable amount of prospecting, in the shape of trenching, &c. In the first drive put in an excellent class of andesite, containing nice mineral veins, was cut; yet no leaders of an encouraging nature were met with. A drive was also put in from the level of the creek under a slip, where, some years ago, some very rich stone was got, but unfortunately this party found nothing but a few small stringers that would not pay to work.

Day Dawn Mine.—This mine was worked by a syndicate, who did a large amount of prospecting, in the shape of driving and trenching on the various leaders that run through the claim. These vary from 4 in. to 4 ft. in thickness, and are running through an excellent class of country. Gold was frequently seen in the quartz, but it did not turn out as well as anticipated, and in consequence operations were suspended. In the month of October last 17 tons 10 cwt. of quartz was treated for 12 oz. 5 dwt. of gold; value, £31 5s. Four men were employed.

Nil Desperandum.—This is a claim lately taken up by A. Prescott and party, who, it is said, have made an important discovery. I have not seen the claim, but as soon as time permits I will visit it. I am informed it is situated about two miles up the creek from the Government public testing plant. They crushed 50 b. of specimens for 51 oz. of gold; value, £137 14s.

The Government public testing plant, I am sorry to say, only crushed 17 tons 10 cwt. during the last nine months.

Gumtown.

Big Beetle Mine.—The work that has been done in this mine is chiefly of a prospecting character, in the shape of driving and trenching. Drives on the reefs have been put in the following distances: On No. 1 reef—Top level 38 ft., middle level 90 ft., low level 50 ft.; No. 2 reef—Upper level 43 ft., lower level 22 ft. This company intend to erect a small crushing plant as soon as the county road leading from Gumtown to the mine is completed. This will enable them to get the machinery on the ground. The prospects met with are, I am informed, very encouraging. No returns.

Kapowai.—The operations in this mine are chiefly prospecting and driving. The No. 1 drive was put in a distance of 63 ft. to intersect the No. 1 reef. The No. 2 level has been extended 112 ft. on what is termed No. 2 lode; there is only a formation in the face of the drive, and, as it is carrying little or no gold, work here has been suspended for a time. A rise has been started over this level to see if it improves going upwards. A crosscut has been put in 44 ft. to cut the reef about 88 ft. above No. 2 level, but this is now stopped. A drive is being extended on what is supposed to be No. 2 lode, and so far nothing of importance has been met with. Five men are employed in this mine.

Welcome Jack Mine.—This company has done a large amount of prospecting and driving on the reefs, the prospects met with being sufficiently encouraging to warrant the erection of a five-stamp battery, and a contract has been let for the cartage of the battery from Mercury Bay to the mine, which the owners intend to have erected and ready for crushing in the month of May. A crushing of 5 tons 18 cwt. 72 lb. was treated at Fraser and Sons' plant, Auckland, for a return of 227 oz. 18 dwt. of gold value, £263 10s. 10½d. Seven men have been employed.

Prospecting operations are proceeding on the Rangihau, Prince Edward, Golden Reefs, and Perseverance Claims, in which very good surface-prospects are obtained; but further development will be required to prove the value and permanency of the reefs. Two men are employed on each of those claims.

Mata Creek.

There have been a few men prospecting intermittently in this locality, but no discoveries of any importance have been reported, and no returns of gold received.

Tapu.

Mahara Royal.—Operations in this company's mine were directed for a time to opening up the Royal reef to the north of the crosscut at the lower level. In driving on the reef here the prospects were exceedingly encouraging, but in stoping it out over the back of the level the quartz obtained did not yield so well as anticipated, and in consequence the number of men was reduced. The few who were retained were put on to prospecting-work. 664 tons was crushed at the company's mill for a return of 368 oz. 7 dwt. of gold; value £1,085 11s. 1d.

Bullion.—This mine has been steadily worked by C. Manuel and party (tributers), who have confined their operations chiefly to stoping out a block of ground that was opened up on the Sheridan reef over the back of the low level. This is nearly exhausted, and before much more can be done it will be necessary to extend the drives on the reef to open up fresh blocks and ascertain its value. This is hard to do, as the ground is of a very patchy nature. The tributers crushed 119 tons of quartz for 407 oz. of gold; value, £1,190 9s. 6d. An average of seven men were employed.

Black Swan.—In this claim work has been carried on by C. Kelly and his mate, who have done a considerable amount of work in opening up and prospecting on several leaders that are striking through their claim, varying from 1 in. to 4 in. in thickness, from which 10 tons of quartz has been treated for 11 oz. 10 dwt. of gold. Two men are employed.

The Bendigo, Diehard, and Panama Route have each had two and three men employed on the claims, operations being directed to prospecting on the various leaders that are known to exist in this locality.

Waiomo.

Monowai Mine.—Work in this mine has been vigorously proceeded with, and a fair amount of success has resulted. The place where most of the quartz has been obtained recently is over the back of No. 3 level, the reef here being from 8 ft. to 14 ft. thick, and when last inspected stopes were being carried along for about 70 ft. in length and were up about 60 ft. above the level. The whole of the reef was taken out except about 2 ft. of the foot-wall portion. About the same thickness on the hanging-wall side was saved for treatment; this contains a considerable amount of heavily mineralised ore, including gold and silver, but of a very refractory character, and the great difficulty has been to get a suitable process for extracting the precious metals. I am informed this has been got over by the company crushing the ore at their own battery and concentrating the same on the Frue vanners, then shipping the concentrates to New South Wales for treatment. The results obtained have been very satisfactory. 1,439 tons of quartz has been treated for £1,830 16s. 3d. (or £1 5s. 5¼d. per ton). This cannot be considered rich ore, but a better extraction has been obtained by the process mentioned than any hitherto tried on the quartz from this mine.

Broken Hills.—This company's property was protected for a time, and when the protection expired two men were put on, and are now engaged in driving a low level with the object of intersecting the Monowai reef.

Hector McDonald.—This is a claim lately taken up by Lowrie Brothers, who found rich surface-prospects and a mullocky reef, from which they crushed 8 tons of ore for 6 oz. 8 dwt. of gold; value, £19 4s. Two men are employed.

Considerable attention has of late been directed to the Waiomo and Puru Creeks, where large mineral lodes are known to exist, and a number of new claims have been taken up with the object of ascertaining if the concentration process will prove suitable for the extraction of gold and silver from those ores.

Puru.

Puru Consolidated.—The company have only done a limited amount of work in this mine for some time past. The ground was worked for a short time by tributers, but not being successful in discovering a payable chute of ore they gave it up, and the company have two men employed prospecting the different reefs that are carrying a little gold. So far no ore of sufficient value has been discovered to warrant sending it to the battery for treatment.

Puru Big Reefs.—This property has been recently taken up by a syndicate, who are opening up and testing the reefs along the outcrop on the eastern side of the Puru Stream. Some work was done on this property during the boom, but it was given up, as the assays made and value obtained were not sufficient to warrant a large sum of money being expended in opening up the reefs. However, the present syndicate are determined to give it a fair trial, and have sent samples of the ore from the big reef to New South Wales to be treated similarly to the Monowai concentrates, and the results obtained are said to be exceedingly encouraging. Three men are employed.

Tararu Creek.

Eclipse (Limited).—Operations in this company's mine have been vigorously carried on in driving and stoping on the No. 1 and cross reefs over the back of the main level, driven from the bottom of the shaft at a depth of 150 ft. The No. 1 reef is a large body of stone about 6 ft. in width, but is not what may be considered high-grade ore. It has been driven on for some hundreds of feet, thereby opening up a large block of ground which is now available for stoping. The cross-reef—on which a very large amount of driving and stoping has been done—is apparently of better quality, and averages 3 ft. 6 in. in width. 1,334 tons of quartz has been treated at the company's battery for a return of 935 oz. 8 dwt. of gold; value, £2,666 5s. 4d. Twenty-four men have been employed.

Chicago.—There has been very little work done in this mine for some time past, and no returns of gold have been received.

Iron Cap Mine.—Prospecting-works have been carried on in this mine, two and sometimes three men being employed in driving on the No. 1 reef, which has varied from 4 in. to 16 in. in thickness. Occasionally a little gold is seen in the stone, but so far no rich chute of ore has been met with, although most of the quartz broken out is saved for treatment. No returns have been received.

Tararu Creek Mine.—Operations in this company's mine have been steadily carried on, the work being chiefly confined to driving, rising, and stoping on the reef over the battery-level. The reaf has varied from 4 ft. to 20 ft. in size. During the period under review 11,096 tons of quartz

has been produced from the mine, and treated at the company's mill for a return of 3,753 oz. of bullion; value, £8,342 15s. 10d. (or 15s. 0½d. per ton). It will be seen that the ore treated was low grade, but the management was always in hopes of meeting with better ore as the work proceeded, and in consequence kept working the mine at a loss until the end of the year, when the mine was at last temporarily closed down. An average of eighty men were employed.

KURANUI.

Kuranui Mine.—The whole of the company's operations (which have been of a prospecting character) have been carried on above the tunnel-level. About two months ago a strong, well-defined, and highly mineralised lode was met with in the vicinity where rich stone was obtained in former years, the quartz being of such appearance as to lead the manager to believe that a rich chute of ore was going to be met with, but so far no important discovery has been made. There have been five tributers working in the mine, their attention being directed to working on leaders from 2 in. to 6 in. thick at the surface-levels. The tributers crushed 28 loads of quartz for 58 oz. 3 dwt. of gold; value, £151 19s. 9d. The company had seven men employed.

MOANATAIARI.

New Alburnia.—This mine was closed down for some considerable time for the want of funds, and pending a reconstruction of the company to raise sufficient capital to further develop the property. I am informed this has not been yet accomplished, but it is fully expected sufficient capital will shortly be forthcoming to enable the proposed works to be carried out. The company had a few men employed on wages for a time breaking out quartz, but after crushing 5 tons for 1 oz. 7 dwt., value £3 12s. 10d. (which did not pay), the men were discharged, and portions of the mine were let on tribute. Four men are employed.

Tudor.—This ground has been worked by two men, who have done a good deal of work in driving and stoping on small leaders, which vary in size from 2 in. to 4 in. in thickness. A little gold is occasionally seen, but nothing of a payable character has been met with. 8½ tons of ore was crushed and treated for 9 oz. 4 dwt. of gold; value, £24 16s. 10d.

Golden Drop.—Two men are employed on this claim working on small leaders from 2 in. to 4 in. thick, and from which a little picked stone is sometimes obtained. 5 tons of quartz was treated for 21 oz. 2 dwt. of gold; value, £58 0s. 6d.

Seahorse.—This claim is worked by the owners—C. Taylor and mate—who are working on small leaders, from which they obtained 49 lb. of specimens, and treated the same for a return of 24 oz. 12 dwt. of gold; value, £67 13s.

Alburnia East.—This ground was abandoned for a time. Power and party subsequently worked on it without registering or procuring a title, and within a short time had three parcels of specimens treated, amounting to 210 lb., for a return of 123 oz. 15 dwt. of gold, value £334 12s. 7d., and which they stated had been obtained from this ground. Since then the ground was pegged off, and has been amalgamated with the Thames Talisman Gold-mining Company, who have been granted permission to work the mine with six men, and are now engaged putting in a low level.

Kimberley.—Two men were employed on this mine up to the month of October, and during the period crushed 54 lb. of stone for a return of 33 oz. 13 dwt. of gold; value, £95 4s. 3d. This ground is now included in the Thames Talisman Special Claim.

New Whau.—Operations have only been carried on with a small staff of seven men for the period mentioned, and good progress has been made with the work in hand. The drive at No. 1 level has been extended on the course of the Sons of Freedom reef for a distance of 196 ft. westward of the crosscut, and 42 ft. eastward. The width of the lode in the western face is 3 ft. 6 in., but in the eastern face it is a little split up. Some nice specimens were obtained in driving the level on the reef some six months ago, but, as no more payable stone was met with as the drive advanced, it was deemed advisable to put up two rises over the places where the specimens were secured, and here a block of ground 128 ft. in length by 70 ft. in height is being stoped out. From these stopes 75 loads of quartz have been treated for a return of bullion; value, £180 2s. 4d. In a crosscut driven from the No. 1 level to connect with the old Sons of Freedom pass for ventilation a nice-looking leader from 6 in. to 8 in. was cut, and, although the quartz was most promising, yet only something like 22 ft. have been driven on it. A large amount of work has been done by tributers in the Sons of Freedom Section, but nothing that can be called payable has been met with. Seven parcels of ore, making a total of 23 loads, were broken out and treated. Bullion to the value of £56 6s. 2d. was obtained.

New Moanataiari Mine.—At the No. 3 level in the Cambria section the reef was driven on to its junction with the Red Queen leader. Here a short block of ground was stoped out for a length of 60 ft. by a height of 40 ft., from which a parcel of 70 tons of payable ore was treated at the company's mill for a return of 71 oz. 2 dwt. of gold, value £203 15s. 3d.; but as the stopes ascended the ore gradually became poorer, and all the work was then discontinued at this level. The No. 4 level was driven a further distance of 25 ft. on the course of No. 1 reef, making a total distance driven of 130 ft. As nothing of a payable nature was met with, all work was suspended in this portion of the mine. In the Reuben Parr section a crosscut was driven from the Reuben Parr reef to the hanging-wall of the Golden Age reef. Nothing of a payable nature being discovered, work here was stopped. The men were then employed in effecting necessary repairs to the different levels throughout the mine, and some of them engaged in driving a prospecting crosscut in the foot-wall of the Golden Age reef at the Point Russell level. This drive has now been extended a distance of 145 ft., and is passing through an excellent channel of country. There has been an average of nine men employed on wages, and fifty-six tributers; most of the latter are working blocks of ground in the surface portion on the foot-wall of the Moanataiari slide, and have crushed 632 tons of general ore and 620 lb. of specimens for a return of 1,336 oz. 11 dwt. of gold, value £3,690 18s. 5d.;

making a total of 702 tons and 620 lb. of specimens crushed for 1,407 oz. 13 dwt. of gold, value £3,894 13s. 8d.

Kuaranui–Caledonian Mine.—This mine is at present being worked solely by tributers on the sliding-scale principle, the company finding the engine-driver and braceman. No royalty or winding-cost is charged until the men's earnings exceed £2 per week per man. A large number of tributers have been constantly engaged, some of whom have met with a fair amount of success. The different reefs and leaders operated upon vary from ½ in. up to 2 ft. in thickness, but, so far, none of the large reefs have been tried by any of the tributers on account of the quartz in those reefs being mostly low grade, and which will not pay to break out and treat. An average of fifty men has been employed, and this large number is in a great measure due to the advantages offered by the system under which the tributes are let. The amount of ore treated from April to the end of December, 1900, is as follows: 449 loads of general ore and 919 lb. of specimens, for 1,668 oz. 4 dwt. of gold; value, £4576 13s. 8d.

Waiotahi Creek.

Waiotahi Mine has an area of 22 acres. This mine still continues to be the most consistent gold-producer in this locality, having paid dividends regularly for the last twenty-three years. During the period under review a sum of £1,350 has been paid to shareholders, making a total of £37,800 paid in dividends since operations were commenced. Work in the mine is proceeding as usual at the Nos. 1, 2, and 3 levels on the various well-known gold-bearing leaders, varying from ½ in. to 4 ft. thick, and from which 975 tons of quartz has been broken out and treated at the company's mill for 1,451 oz. 5 dwt. of gold; value, £3,891 9s. 6d. Sixteen men have been employed.

Nonpariel Mine.—The work carried on in this mine for the past nine months has been confined to tributers. During that period there has been an average of sixteen men engaged in working on the various reefs and leaders, the total tonnage broken out and treated being 353¼ tons for 445 oz. 1 dwt. of melted gold; value, £1,201 18s. 7d. The principal ore-bodies operated upon have been the Liverpool Boys reef and the Wade leader, the former being a well-defined body of ore, averaging about 20 in. in thickness, and yielding 1½ oz. to the ton. The Wade leader is a parallel lode to the Liverpool Boys reef, and about 90 ft. to the southward of hanging-wall of it; this reef is also well defined, and carries clean hanging-and foot-walls. The whole of the work is conducted through adit-levels driven from the side of the hill in the Waiotahi Creek.

Fame and Fortune.—Operations in this mine have been principally confined to driving and stoping on the No. 3 and hanging-wall leader of the Golden Age reef. The No. 3 reef is about 2 ft. 6 in. in thickness, and has been operated on to a fair extent, and although a little gold was frequently seen in the quartz in breaking it out, yet no rich chute of ore was met with. A considerable amount of work has been done on the hanging-wall leader, which is 6 in. thick, and the ore is apparently slightly better in value than that from the No. 3 reef. There were over forty men employed for a time, but through the returns falling off the number was reduced to twenty-five. A large sum of money has been spent in developing this mine from time to time, and it is to be regretted that something of a payable character has not been obtained. 824 tons of quartz has been treated for 618 oz. 7 dwt. of gold; value, £1,773 18s. 9d.

In this locality work has been carried on in the following small claims, on which from one to three men on each have been employed: West Coast, Little Muriel, Ballarat, Little Maggie, and Infant Claims. Small returns of gold have been received from each.

Grahamstown.

Victoria Mine.—During the nine months ending the 31st December operations have been conducted by tributers, the company having received permission from the Warden to work on this system owing to the inability of the company to find money to carry on work on their own account. The tributers have been engaged in driving and stoping on various leaders in the Victoria and Tookey sections of the mine, whilst a considerable amount of work has been done in prospecting on the surface-levels. 26 tons of quartz was broken out and treated by the tributers for 39 oz. 15 dwt. of gold; value, £110 9s. 5d. Five men were employed. The property is now under offer to an English syndicate, and should the negotiations prove successful the directors propose to put down two bores (1,000 ft. and 1,500 ft.) in order to prove what class of country is to be found on what is known as the seaward side of the slide.

May Queen Mine.—During the period under review a considerable amount of work has been done in this mine, sixty-five men being employed on wages by the company, and thirty-five men engaged in tributing, the operations by the company being chiefly confined to working the reefs at and above No. 7 level in the May Queen and Saxon sections of the property. The water is lifted from No. 7 to No. 6 level by the company's Cameron pumps, and the work accomplished may be summarised as follows:—Driving on the lodes: May Queen No. 7 level on No. 4 lode, 110 ft.; intermediate level on north-west lode, 66 ft.; Saxon No. 7 level on No. 1 lode, 340 ft.; intermediate drive on No. 1 lode, 42 ft.; Cardigan No. 7 level on No. 2 lode, 440 ft.; Cardigan No. 6 level on No. 1 lode, 90 ft.: total, 1,088 ft. The stopes on the different lodes were advanced as follows: Cardigan No. 6 level on No. 1 lode, 862 ft.; Cardigan No. 7 level on No. 2 lode, 324 ft.; Cardigan No. 6 level on No. 2 lode, 750 ft.; Saxon intermediate level on No. 1 lode, 120 ft.; new lode, 48 ft.; May Queen No. 7 level on No. 4 lode, 3,452 ft.; May Queen No. 7 level on foot-wall leader, 156 ft.; intermediate level, north-west lode, 66 ft.: total, 5,778 ft. Driving crosscuts: Cardigan No. 7 level, 209 ft.; drive foot-wall of Saxon No. 1 lode, 80 ft.; drainage crosscut, 233 ft.: total, 522 ft. Rising on lodes: Cardigan No. 7 on No. 2 lode, 56 ft.; May Queen No. 7 on north-west lode, 108 ft.: total, 164 ft. Sinking winzes: Cardigan No. 6 level on No. 2 lode, 112 ft. The total distances of drives, crosscuts, rises, winzes, and stoping amounted to 7,664 ft. The company crushed 5,216 tons of quartz for 3,029 oz. 4 dwt. of gold, value £8,806 17s. 4d.; and the tributers had treated 444 tons for 1,322 oz. 8 dwt. of gold, value £3,629 10s. 7d.

Thames-Hauraki.—Operations in this mine were vigourously proceeded with during the greater part of the year, sixty-six men being employed. The principal work consisted of sinking the main shaft (which has attained a depth of 828 ft.—78 ft. having been sunk since my last annual report), but in the month of September a dispute arose between the May Queen Company and the Thames-Hauraki Company over the contributions to be paid and the depth at which the water was to be kept down in the shaft by the latter company. Sinking was suspended and the water allowed to rise to the No. 10 level (150 ft. above the bottom of the shaft). Then another crisis arose in connection with the company's financial affairs in London, when the pumps were stopped and an application made to the Warden for six months' protection. This was granted. An arrangement was entered into between the Thames Drainage Board and the Thames-Hauraki Company, whereby the latter agreed to take over the old Big Pump and unwater the mines on the north end of the drainage area on certain conditions, and until the end of December. This arrangement was fulfilled and the pump again handed over to the Thames Drainage Board. The old pump was kept going sixteen hours a day, which was sufficient to keep the water down to the depth required.

Karaka Creek.

Karaka (Limited).—Work was carried on for some time, and consisted of the extension of the main cross cut from the Collarbone Creek in a north-easterly direction. This was driven a further distance of 150 ft. Seven men were employed. No returns.

May Queen Extended.—This mine has been steadily worked. The shaft has been sunk to a depth of 150 ft., a crosscut driven 160 ft. from the shaft to intersect Hokianga reef, the reef driven on for a distance of 70 ft., and a rise put up on the reef to a height of 50 ft. The company's future operations will be directed in extending the drive on the reef at the 150 ft. level, and stoping out the reef as it is opened up. The shaft is sunk on the side of the creek, and is kept clear of water by a small plunger-pump, having a diameter of 4 in. and 12 in. stroke, running at the rate of sixteen strokes per minute. It is driven by a small water-wheel 8 ft. diameter and 14 in. breast, the water to drive the same being obtained from the creek. The stuff broken out of the drives, &c., is raised to the surface by what is termed a "horse-whip." Eight men are employed. 23 loads of quartz was treated for 35 oz. of gold; value, £98 14s.

Claremont is a small holding, and consists of 1 acre. It is worked by the owner (G. Briant) with highly payable results, his attention being directed to working on small leaders, which, I am informed, junction with what is termed "flinties," where rich specimens are frequently obtained. 572 lb. of specimens were treated at his own crushing-machine for a return of 276 oz. of gold; value, £745.

Gloucester.—This mine was lately taken up by R. Martin, who is working the ground with a limited number of men. The operations consist in extending the low level to intersect the Greenstone reef. It has been worked to some extent in the upper levels, where it varies from 4 in. to 10 in. in thickness, from which I am informed good stone was obtained. Work is also being carried on at the No. 1 level on Cowling's leader with encouraging prospects. Gold is frequently seen in breaking out the quartz. 1 ton of quartz was treated for 1 oz. 14 dwt. of gold value, £4 18s. 7d. Eight men are employed.

There has been some prospecting done in this locality in the Manchester and Summerhill Claims, but no important discoveries reported.

Una Hill.

Occidental Mine.—What is termed the North Star tunnel has been extended a distance of 230 ft., making a total length of 1,800 ft. In driving this tunnel four highly mineralised lodes have been cut through, varying from 1 ft. to 35 ft. thick—viz., the North Star, Hague Smith, Adelaide, and Duke; also several small leaders. Most of them are still unprospected, having just been cut through in the tunnel. A portion of stone from the Hague Smith reef was saved (for about 14 ft. in width), from which assays were made showing a value of £1 15s. 9d. per ton. There has, so far, only been a limited amount of work done on this reef, although in the early days of this goldfield a good deal of payable crushing-dirt was taken out of the surface-levels. The intention of the company now is to drive on the Duke reef until it junctions with the Hague Smith reef, which will be driven through for the purpose of intersecting the Lord Nelson reef. Two men are employed on wages for the company, and four men tributing, who had 40 tons of ore treated for 31 oz. 5 dwt. of gold; value, £85 7s. 8d.

Hape Creek.

Fortuna Mine.—This holding had absolute protection in the early part of the period under review, pending a new scheme of development which was anticipated would be undertaken by the company. At the expiration of the period for which protection was granted the company were not prepared to go on with the work, and the surface portions of the mine were let on tribute. Ten men are engaged in tributing on the ground, and have crushed 17 loads of quartz for 14 oz. 9 dwt. of gold; value, £39 19s. 8d. So far no important discovery has been reported.

Ethel Reefs.—Operations, which consisted in prospecting and developing the various reefs that run through the property, were vigorously carried on in this mine up till nearly the end of the year. The principal work was driving, rising, and stoping on the Stevenson reef, which varies from 6 in. to 18 in. in thickness, and from which the greater portion of the ore treated was obtained. A good deal of development was also done on the Souvenir, Jupiter, and Prescott's lodes: but, as these are of a very patchy nature, and sufficient gold not being forthcoming to meet the working-expenses, all work that was being done on the company's account was suspended, and portions of the mine let on tribute. The company had thirty-three men employed, and 653 tons 4 cwt. of general ore and 599 lb. of specimens were treated for a return of 592 oz. 3 dwt. of gold; value, £1,511 2s. 2d.

KERIKERI.

Fleming's Mine.—This mine was worked by the owners in the early part of the period. They had from two to four men employed, but, as the results obtained from the ore treated did not pay the owners, the men took the mine on tribute for a short time. Not meeting with payable ore they gave it up. The company crushed 3 tons of quartz and 10 lb. of picked stone for 17 oz. 14 dwt. of gold, value £48 0s. 6d.; and the tributers crushed 17 lb. of specimens for 14 oz. 3 dwt. of gold, value £36 10s. 10d.

PURIRI.

Puriri Gold Estates (Limited).—Work was carried on for a time in the Inverness and Mandoline sections which proved unremunerative. It was then decided to take up another lease—viz., the Amazon ground, now known as the Moncraith Special Claim, and work has for a time been confined to this section. A prospecting-drive was put in on the reef that gave fair dish-prospects, and was driven on for a distance of 100 ft., the reef varying from 1 ft. to 18 in. in width. Assays along the same gave a value of £5 11s. per ton. Two bags of quartz, weighing 2 cwt., were forwarded to London and assayed, and gave a value of £10 8s. per ton. In view of this satisfactory result, and in order to test the reef at a lower depth than it was possible to do by means of an adit-level, a shaft was sunk to a depth of 70 ft.; at this depth a crosscut is being driven to intersect the reef. During the year the company purchased the properties of the Orion Gold-mining Company, consisting of the Lucky Chance and New Aurareas Special Claims, together with aerial tramway, battery of eight heads stamps, water-race, and water-rights. Ten men are employed.

Miner's Right Claim.—This mine has been steadily worked with four men, the work consisting of driving and stoping on small leaders varying in size from 2 in. to 6 in. These are carrying payable gold in what is termed good country, but as soon as the leaders run into the hard rock the quartz is worthless. 221 tons of quartz was treated at their own battery for a return of 172 oz. 6 dwt. of gold, and value £442 8s. 11d.

OMAHU.

Sheet Anchor.—This ground is worked with four men, who have been chiefly engaged in prospecting and driving on the reef. This carries a fair-sized body of quartz varying from 3 ft. to 5 ft. thick, and from which parcels of high-grade ore have been treated. The reef has very little underlie, and is very much broken and disturbed; the greatest depth it has yet been intersected does not exceed 40 ft. below the surface, and is apparently not in solid country. As it will necessitate the sinking of a shaft or driving a low level for some considerable distance to prove the value of reef at a depth, the owners are negotiating for the raising of capital to carry out this important work. They found the small two-stamp Tremain battery, which was erected at the mine for wet crushing and amalgamation, was not suitable for the treatment of this ore on account of the gold being very fine in the stone. In consequence some of the quartz had to be treated at the Thames School of Mines. 2¼ tons of ore was treated for 86 oz. 16 dwt. of gold; value, £72 1s. 6d.

Klondike.—Two men, who did a fair amount of prospecting, were employed on this ground for a time. A reef formation which contained gold was discovered outcropping on the side of a spur. It was sunk on for a few feet, and a drive put in to intersect it about 80 ft. below the outcrop, where it was driven on for a few feet, and a trial crushing taken out for 5 oz. 8 dwt. of gold; value, £12 10s. As the return was not sufficient to pay, protection was applied for and granted. A little prospecting was done on other small claims in this locality, but nothing of importance discovered.

NEAVESVILLE.

Golden Belt.—Only a limited amount of work has been done on this ground, and was chiefly confined to extending the low level (with six men), the object being to intersect the reef which had been operated on to a considerable extent at the upper levels some years ago. After driving this level a further distance of 150 ft. (making the total distance driven from the mouth of the drive 630 ft.) to the point where the reef was expected to be met with, it was not found, and, the company's funds becoming exhausted, all work was stopped and the mine protected. I am informed the property has again been taken over by one of the original owners, who intends to give it a further trial. He has confidence in being able to make it pay, as previously the ground was worked with payable results.

TAIRUA.

Broken Hill.—This mine has been steadily worked during the period under review, but the results of the operations have not proved as successful as at first anticipated. Whilst the twenty-stamp battery was being erected a large amount of development-work was done in the mine on the large ore-body, and in making connections between Nos. 2, 3, and 4 levels for the purpose of conveying the quartz from the upper workings to the level on the top of the self-acting incline, and from thence to the battery. On the completion of the battery (which was fitted up for the ordinary wet process and treatment by amalgamation) in June last a large quantity of ore was put through the mill, but, the results obtained not being satisfactory, the battery was stopped for a time and a cyanide plant erected to treat the tailings, &c. When this was completed crushing was again resumed, and carried on up to the month of October, when the mine was closed down and stoping operations on the large ore-body were suspended, the quartz being found to be of too low grade to pay under present conditions, more especially as the plant was being driven by steam-power. The company's attention has since been directed to prospecting some of the smaller leaders in the No. 3 level on the western side of the hill: the Seaver leader has been driven on for 180 ft. from the crosscut. This leader is small, and varies from 1 in. to 5 in. thick, and is striking through a tight channel of country. In the drive north-east on this leader the Blucher reef was intersected, crossing the Seaver's at nearly right angles. This reef is about 18 in. thick, and I am informed that assays made of the stone from time to time have given highly encouraging results. On the

eastern side of the hill the Blucher reef is being driven on from a level about 100 ft. below No. 3 level, and when this is far enough advanced a connection is to be made between the two levels. 2,218 tons of ore was treated for 673 oz. recovered by amalgamation, and 668 oz. was recovered by the cyanide process, for a value of £1,457 8s. Twenty men were employed.

Chelmsford.—The property has been steadily worked, and with very encouraging prospects. The operations in the mine have been mostly confined to opening up the No. 1 or main reef at the low level, preparatory to stoping operations being proceeded with on the completion of the ten-stamp battery, together with the amalgamation and cyanide-process appliances in connection therewith. The No. 1 reef will average 3 ft. in thickness, and has been driven on at No. 1 level for a distance of 60 ft., from which 65 tons of ore have been saved; and at No. 2 level it has been driven on for 80 ft., 20 tons of quartz from here having been broken out and saved. From the information received it may reasonably be expected that a considerable amount of payable ore will be obtained from this part of the mine. The No. 2 reef is about 2 ft. in width, but only a limited amount of work has been done on it. On the outcrop it has been exposed for a length of 20 ft., gold being freely seen in the stone. The No. 3 reef is about 1 ft. in width, and prospects obtained by pestle-and-mortar test would favour the opinion as to the ore being of a payable nature. It is expected the battery will be completed about the month of March, when crushing will be commenced. An average of eight men have been employed.

Wharekawa.

Whangamata Gold Corporation (Limited).—The operations in this mine were principally confined to stoping out blocks of ore that were opened up over the back of Nos. 1, 2, and 3 levels, the payable portion of which became exhausted in the month of October, and necessitated closing the battery down pending further developments in the mine. These are at present being pushed on as speedily as possible. It having been decided by the company to sink from No. 3 low level, with a view to proving the value of the reef at a depth, the temporary sinking plant which was used in sinking the shaft from the surface was removed down to this level. It consists of a small Tangye pump and steam-hoist, which will enable sinking to be carried on for a time; but the company contemplate erecting a permanent winding plant and pumping machinery of the Cornish type, which will be capable of unwatering the mine to a considerable depth. Fair progress is being made with the shaft, which is to be sunk 100 ft. below the No. 3 level before opening out. This will make a total depth of 400 ft. below the crown of the hill. A good deal of prospecting-work has been done on various parts of the property in anticipation of discovering other reefs of a payable quality, but without success. The reef where operated on in the upper levels will average 5 ft. in width, and is what might be termed a true fissure-vein, the filling being of thermal origin. The ore consists of very finely divided gold, together with sulphides of silver, in veins disseminated through the stone. Previous to the battery closing down, 5,120 tons of ore was crushed and treated by the cyanide process for 4,316 oz. 5 dwt. of gold; value, £6,832 3s. 5d. At present thirty men are employed (a large number having been paid off when the battery was stopped), but it is expected the number will shortly be increased to carry out the scheme of development contemplated by the company.

Ohui.

Mining is still very quiet in this locality. A little prospecting is being carried on in the Maori Dream and in two other claims, but with only two men in each. No returns of gold have been received.

Whangamata.

Mananu (late Wentworth Mine).—Operations in this mine have been steadily carried on, with satisfactory results. The ten-head stamp-battery that was being erected in the beginning of the year was completed in the month of July, when crushing operations were commenced, the mode of treatment adopted being wet crushing, amalgamation, and cyaniding. In the mine the work has been chiefly confined to driving, rising, and stoping on the Studholme reef at the Nos. 1, 2, and intermediate levels, where good-sized blocks of ore are opened up. The reef is very irregular in size, varying from 4 ft. to 12 ft. in thickness, but I am informed it is payable throughout. The Ruanui reef is also operated on at the No. 4 or low level. This reef varies from 1 ft. to 2 ft. thick, and is also considered to be of a highly payable character. I am informed that through the satisfactory results obtained from the ore put through the mill, and the reefs in the mine opening up even better than anticipated, the company contemplate erecting an additional ten heads of stamps to further increase the output of gold. Since the battery commenced working 1,002 tons of ore was crushed for a return of 466 oz. 16 dwt. of gold recovered by amalgamation, and 902 oz. 2 dwt. recovered by cyanide, of a total value of £2,605 12s. 4d. Fifty-two men are employed.

Maratoto.

Hikutaia Gold Syndicate.—There has been very little work done on this property for some time past. The mine is under protection pending instructions from the directors as to the future developments. It is proposed to erect a large crushing plant to deal extensively with the ore opened up to a considerable extent at the different levels from the side of the hill, but which is of very low grade. At present only a caretaker is on the ground looking after the property.

Maraioto.—From April to September a good deal of work was done in opening up and developing the ore-bodies in the Maratoto and Pay Rock sections of the property. The Maratoto reef—which is a large body of stone—was opened up to a fair extent at the Nos. 1 and 2 levels, and is said to be carrying a good percentage of bullion. The fifteen-head stamp-battery, and also the cyanide plant, which was in the course of construction at the time of my last report, was completed in May, when crushing was commenced, and carried on up to the month of September. 580 tons

of ore was crushed and treated for 532 oz. 5 dwt. recovered by amalgamation, value £332 7s. 7d.; and 3,262 oz. 8 dwt. recovered by cyanide, value £479 16s. 2d.: or a total value of £812 3s. 9d. As will be seen by the above return, it was a low-price bullion. Owing to the ore treated from the upper levels not turning out as well as expected, and the funds becoming exhausted, the battery was stopped and only a limited number of men kept on in the mine, pending a reconstruction of the company for the purpose of providing capital to prove the reefs at a depth, as it was found the ore was increasing in value going down. I am informed work is to be resumed with renewed vigour. An average of eleven men were employed.

Waitekauri Extended.—This mine has been steadily worked. Operations have principally been confined to driving, sinking, and stoping on the reef at and over the back of No. 3 or low level, where the reef has an average width of 12 ft. On the north and south of the crosscut at No. 3 level, large blocks of ground are opened up on the reef between Nos. 2 and 3 levels, which are connected by a rise on the reef. As the levels named are 200 ft. apart, an intermediate level was driven from the rise, about half-way up, for the purpose of more thoroughly proving the value of the reefs opened up. The ore in the stopes over the back of the No. 3 level becoming poorer as the stopes ascended, all work here was stopped, and the operations then directed to prospecting and proving the value of the reef under the No. 3 level. An underhand stope was carried along the bottom of the level to a depth of 5 ft., and a winze sunk on the reef to a depth of 50 ft., from which it is said good payable ore was obtained all the way down. The battery was closed down in the month of December, pending the development of the reef at deeper levels, it having been decided by the company to sink a shaft from No. 3 level to a depth of 200 ft., for which preparations are being made. At this depth a level will be opened out and the reef intersected. Should the prospects be of a satisfactory character the shaft will then be sunk to a depth of 500 ft. A chamber is being cut out in the level for the machinery where the shaft is to be sunk. The present little temporary plant will be used for sinking for a time, but, as this will not be sufficient to cope with the water to any great depth, a more powerful machine is to be erected. 2,255 tons of ore was treated by the cyanide process for 2,117 oz. 6 dwt. of bullion; value, £2,223 3s. Forty men were employed.

Komata.

Komata Reefs.—During the last nine months the only work carried on has been the completion of the No. 4 level tunnel, and connecting the same with No. 3 level (a vertical distance of 300 ft.) by means of a rise put up to meet a winze sunk from No. 3 level on the reef; also opening up the reef at No. 4 level, and driving an intermediate between No. 4 and No. 3 levels. Alterations are being made to the battery, and it is expected that crushing will be commenced about the middle of March. The process to be adopted will be amalgamation, concentration, and cyaniding of the tailings. A considerable amount of outside work has been done in connection with the water-race and ground tramway. A small amount of bullion was produced during the period under review; this was obtained from cleaning up around the battery from a small parcel of high-grade ore treated. 4 tons of tailings were treated for 134 oz. of bullion; value, £299 6s. 2d. Thirty-five men were employed.

Karangahake.

Woodstock Mine.—Considerable development-work and improvements have been carried on during the past nine months. The dam and penstock to which the new pipe-line (extension of old line) is to be connected has been completed. The dam is 140 ft. long over all, has 120 ft. overflow, and in flood-time has carried a crest of 8 ft. of water. The grade-line for this new pipe-line of about 1,800 ft. has been completed, being built up of rubble-work, walling, and trestling. To carry the pipe across the Ohinemuri Gorge a Warren truss-bridge of 80 ft. span has been built. This bridge has a 7 ft. wide decking in the clear between the trusses, and the bottom chord is 24 ft. above ordinary water-level, and 6 ft. above the highest known flood-level. The water-pipe which this bridge carries is 3 ft. 9 in. in diameter, and is now being connected up on the grade-line. This extension gives a head of 80 ft. at the Pelton wheel (which is to be erected under the battery building), more than doubling the old pressure-head. The old water-power main has been shifted to a lower level at the battery end in order to make room for the air-compressor and steam plants. Two air-compressors are to be erected—one of 1,000 and the other of 40 cubic feet free air per minute, the former an Ingersoll-Sergeant and the latter a Schram compressor. The Pelton wheel to be installed is 11 ft. 2 in. in diameter over all, and is to drive the air-compressors and battery during the greater part of the year. It is intended to install an auxiliary steam plant to give the necessary power when the water is deficient in the summer months. The large turbine by which the mill was recently driven has been removed, as it was quite unsuitable to the increased head of water. The excavation for the air-compressors and steam-engine and boilers is 63 ft. by 57½ ft., the foundations being upon solid rock. The extreme height or depth of this excavation from surface at the back of battery to the bottom of the wheel-pit is 74 ft. of rock. The arrangement of machinery is so designed that the battery or air-compressing plant may be driven separately by either steam- or water-power, or both together may be driven by either of these powers, or the water and steam plants may be coupled together to drive the whole of the machinery. A new tail-race 69 ft. long under the mill, and below the old tail-race, has been driven and timbered so as to gain the utmost pressure-head. The old bridge across the Waitawheta Stream (connecting the battery with mine tram-line) has been taken down, as it was much decayed and too light for the economical ore-supply to the battery. A new and more substantial bridge going direct to the battery ore-hopper has now been almost completed. This bridge is 180 ft. long over all. It is designed for the transmission of horse and train of trucks as they come from the mine, and will carry such a distributed load aggregating 10 tons. In the mine, developments have been confined to the extension southwards

of Nos. 2, 3, 4, and 5 levels, Maria reef; No. 4 level, Shepherd's reef; No. 3 and Tramway levels, Ivanhoe section; and sinking a vertical shaft to intersect the Maria reef direct, and from which the other reefs will be reached by crosscutting. These developments are said to be satisfactorily proving the existence of further and valuable ore-bodies. The shaft-chamber in No. 5 level, which is 45½ ft. long by 37½ ft. wide, and 40 ft. high, has been completed, and a connection from it to the surface also made. The shaft is being sunk 8 ft. by 18 ft. in the clear, and has two hoisting-compartments, 6 ft. by 4 ft.; also a pumping-compartment and ladder-way, 6 ft. by 6 ft. 6 in. The shaft is now down 40 ft. from the floor of the chamber, the collar-set in place, and the concrete work around the shaft-mouth and chamber-floor completed. A small steam-boiler and winch have been set up in the shaft-chamber to expedite sinking until the air-compressor plant is completed. Average number of men employed, sixty. No returns.

Talisman Consolidated.—This company has been vigorously pushing on with developments in the mine, besides the ordinary work, pending the completion of the new reduction plant. This will comprise rock-breakers of the Blake type, fifty heads of gravitation stamps, amalgamating, concentrating, and cyaniding plant, and is expected to be completed about the month of April. The new mill will be of the wet-crushing type, and the number of stamps will be gradually increased with the increase of output from the mine. In the mine the crosscut to the Dubbo reef is now in a distance of 400 ft., and is passing through a good channel of country. A few feet more driving should reach the reef. At No. 5 level—Bonanza section—the reef in the south stopes is from 2 ft. to 8 ft. in width. A large tonnage of ore is being broken out here and forwarded to the mill for treatment. The south drive at No. 6 level is now in a total distance of 300 ft.; the reef is split up, and, in case of anything of importance being left, a crosscut is being put into the east to prove the foot-wall portion of the lode. At No. 7 level the south drive has been extended 130 ft. on the course of the lode. Stoping is also being continued over the back of this level in the Talisman section; the reef is from 3 ft. to 8 ft. in thickness, and is producing good payable ore. The crosscut adit at No. 8 level is now in 400 ft. On the Dubbo reef a rise has been started from No. 1 level on the reef, and is up 60 ft.; the lode is from 1 ft. to 4 ft. thick, the quartz being of a very kindly description. This rise will open up 100 ft. of backs; and from the assays of the stone made from time to time this block should prove highly payable. The crosscut to intersect the No. 2 lode is now in a distance of 135 ft., the country in the face being all that can be desired. The No. 2 level is in a distance of 530 ft. from the point where the reef was intersected. The country has been very hard, but a change for the better has taken place, and with the change the assays made of the quartz shows a great improvement in value. In the Talisman Extended section the north drive on the lode is in a distance of 180 ft.; the lode is 2 ft. 6 in. in width, and is improving as it is driven upon. 7,961 tons of ore was treated for 29,725 oz. 4 dwt. of bullion, value £21,980 2s. 1¾d.; and it is fully expected, with the additional stamps, a considerable increase may be expected next year. 150 men have been employed.

New Zealand Crown Mines Company.—This company has been vigorously pushing on with the development-works in the mine in sinking the main underlie shaft, extending the Nos. 1, 2, and 3 levels from this shaft, and stoping out the reef over the back of the levels from the No. 3 level upwards. The No. 1 underlie shaft has been sunk on the reef to a depth of 225 ft., and the reef has varied from 6 ft. to 12 ft. in width. The whole of the ore broken has been sent to the mill for treatment, and has given highly payable results. The No. 1 level from the main shaft has been driven on the reef south a total distance of 1,530 ft., and north it has been driven on for a distance of 60 ft. The No. 2 level has been driven south on the same reef a total distance of 1,575 ft., and north 225 ft. The No. 3 level south has been driven a distance of 217 ft. on the reef, and 38 ft. north. Driving is also proceeding on a new reef lately discovered in the Waitawheta tunnel, and the prospects of the mine generally are most encouraging. Good payable ore is being obtained from the new lode, and, as the main reef is explored under the Waitawheta (or bed of the river), the outlook is even better than anticipated. The company's works are well supplied with all necessary appliances for economically working the mine; instead of hand-labour, rock-drills are at work in most of the principal places (the motive-power being compressed air), thus reducing the cost of breaking the ore. The company has erected an electric plant, which is used for lighting up the engine-rooms, brace, and shaft, also for firing shots and signalling purposes. The installation of the new pumping plant and the addition to the battery are works of value, and should have an important bearing upon the future prosperity of the company. The tramway between the mine and the battery is undergoing an overhaul, the old rails being replaced with new and heavier rails. 26,130 tons of ore was treated for 26,397 oz. 16 dwt. of bullion, value £52,339 12s. 6d.; and a dividend amounting to £10,000 was paid to the shareholders, making a total of £30,000 paid in dividends. 240 men were employed.

Imperial.—The work carried out in this mine has been of a prospecting and development character. Three separate reefs have been operated on, which have averaged 3 ft. in width, and the same has been driven on for a total distance of 390 ft.; also 90 ft. of crosscutting has been done, 21 ft. of rising, and 37 ft. of sinking. At present there is no machinery on the ground, but the prospects are such that the board of directors contemplate erecting a small crushing plant. A trial crushing of 9 tons was treated for 12 oz. of gold; value, £30. Four men were employed.

Comstock.—The Waverley tunnel has been repaired and timbered for a distance of 500 ft., and 150 ft. also driven on the course of the lode. As the drive advanced, crosscuts were put in to prove the thickness of the lode, which was found to be 60 ft. in places, and carrying a little gold, but not sufficient to pay. As the reef was apparently better going down, the holders decided to extend the low tunnel, which is 300 ft. lower than the one mentioned. The low tunnel is in a distance of 528 ft., and will require to be extended a further distance of 450 ft. to intersect the reef. As the mine is in a good locality and well situated, the prospects are fairly encouraging. Four men are employed.

Crown-Woodstock Junction.—The operations in this claim have been of a prospecting nature. 300 ft. of driving has been done, 200 ft. of trenching and cuttings, and stoping done on leaders to the

extent of 90 ft., from which 3 tons of ore was treated for 4 oz. 3 dwt. of gold; value, £10 11s. 6d. Two men are employed.

Adeline Reefs.—Work of a prospecting character was carried on in this mine with two men. I am informed the claim has lately been sold to Messrs. Bewick, Moreing, and Co.

Owharoa.

Ohinemuri Syndicate Mine. — The work in this mine has been confined to extending the Eliott tunnel, which is now in a distance of 2,300 ft. This tunnel is being driven through the northern end of the syndicate's property, and is crosscutting the country. No reefs have been cut in this tunnel, but in the last few hundred feet nice brown andesite country has been passed through, containing small quartz veins. The tunnel is now penetrating the line of country where it is expected the reef should be met with. A considerable amount of work was done on the surface ahead of the tunnel, and the prospects, it is said, were most encouraging. It is intended to sink a shaft about half-way between the above-mentioned tunnel and the Owharoa shaft, at a point where a nice class of country is going down. Crosscut drives will be put in from the shaft when a depth of 150 ft. has been reached, for the purpose of intersecting the Rising Sun and the other lodes that are known to traverse this part of the property. Eight men are employed. No returns.

Rising Sun.—Two men were employed in this mine, the work being confined to extending the low level and prospecting the reef in the upper levels. Several tons of quartz are stacked at the mine, but no crushings have taken place during the period under review.

Waitekauri.

Waitekauri Mine.—The most important development-works carried on by this company have been as follows:—Golden Cross section: At the No. 5 level of No. 1 shaft (500 ft. below the surface) a crosscut was put in from the shaft and the reef intersected, then driven on for a distance of 200 ft. This is a large body of stone, and the quality is not as good as could be desired; but it is expected to improve as it is driven upon. There has been a considerable amount of stoping and driving done on the Southern Cross reef, from which a large amount of payable crushing-dirt has been obtained, the reef varying from 3 ft. to 25 ft. in width. At No. 3 level it has been driven on for 136 ft., and No. 4 level for a distance of 208 ft., and on the main reef a large quantity of ore was obtained from the stopes over the back of Nos. 3 and 4 levels. Various crosscuts have been driven into the walls of the main reef at those levels for the purpose of ascertaining if any ore-bodies were to be found striking away or running parallel with it. At No. 4 level, No. 2 shaft (352 ft. below the surface), the crosscut to explore the ground to the north-west of the property is now in a total distance of 424 ft., without anything of a payable character being discovered. The Socket low level is an adit, and has now been driven a distance of 2,610 ft. The ground passed through for some distance back from the face of the drive has been a mixture of clay and boulders, and required very strong timber to keep the drive open. For some distance sets of timber that had only been in for a few weeks had to be taken out and replaced with 15 in. props and cap-pieces. A drive has also been driven from the No. 1 shaft to meet the Socket level, and is now in a distance of 290 ft. In the Komata section the shaft is being sunk, and has now attained a depth of 440 ft. From this shaft chambers have been cut out at Nos. 3 and 4 levels, and a crosscut is now being driven from No. 3 level to intersect the reefs. The eastern low-level crosscut that is being driven towards the Komata shaft is pushed forward with all possible speed, and is now in a total distance of 2,076 ft. To expedite this important work rock-drills are used; the tunnel is consequently being driven more rapidly than it could be done by hand-labour. At the old Waitekauri section steady development-work has been carried on at the various levels, the principal work in hand at present being confined to the extension of the Horn level 180 ft. below the Queen level. The reefs in this section vary in size from 10 in. to 4 ft. 6 in., and are opened up to a considerable extent, and connected by rises between the different levels. It is said that some of the ore is of a highly payable character. 19,813 tons of ore was treated for 56,458 oz. of bullion, value £49,836 15s., 9d.; and £21,775 was paid in dividends, making a total paid in dividends since commencing work of £84,035. 350 men have been employed.

Jubilee Mine.—This mine was worked by tributers up to the month of October. They crushed 46 tons of ore, and recovered by amalgamation 17 oz. 13 dwt. of bullion, and by cyanide 321 oz. 15 dwt. of bullion; value, £257 14s. Four men were employed. Since then the company has had twelve men employed on wages; the work they have been engaged at has been repairing drives, prospecting, &c.

Waitekauri Cross.—The company intended to sink the underlay shaft on the reef to a depth of 500 ft.; it had attained a depth of 180 ft. when an inflow of water came in, and this being more than the pump could cope with the work was abandoned. After this 60 ft. of driving was done on the reef at the 160 ft. level in a southerly direction. Not meeting with success, the claim was protected; but work has been resumed, and preparations are now being made on the surface with a view to sinking a vertical shaft. No returns.

Alpha Mine.—The principal work has been directed in extending the main exploring crosscut at the No. 4 level, which has now attained a distance of 1,090 ft. Four reefs have been cut through in this tunnel, varying from 2 ft. to 4 ft. in width, and when subjected to assay-test gave a value of from 18s. to £1 2s. 10d. per ton. This value is barely payable; still, it proves the reefs to be gold-bearing and well worth prospecting. As the work proceeds payable chutes of ore may be met with.

Young New Zealand.—This claim was protected for a time, but work was resumed in the month of August, and since then the men have been engaged in repairing drives and prospecting, &c. Four men are employed. No returns.

A limited amount of prospecting has been done on the Eclipse, Hunua, Diamond Gully, and Waitekauri King. From one to three men were employed on each claim. No returns.

WAIHI.

Waihi Gold-mining Company's Mine.—The following is a description of the company's operations during the period under review:—Shafts: The three old shafts—viz., Nos. 1, 2, and 3 have been deepened: the first 44 ft., the second 92 ft., and the third 42 ft. Shafts Nos. 4 and 5 have been commenced, and at the end of the year had attained depths of 353 ft. and 264 ft. respectively. No. 3 shaft has been used in connection with the supply of quartz to the Victoria wet-crushing mill for some time. At No. 4 shaft the necessary brace has been erected, and a siding (connecting the hoppers with the Waihi–Waikino Railway) has been excavated. The hoppers will also be excavated during the next few weeks. The shaft is now in good working-order, provided with safety-cages, and connected down to No. 4 level in the mine. A winding-engine by A. and G. Price, of Thames, and a tubular boiler by Tangye have been provided for this shaft; a good smithy has also been erected. A large brace has been erected at No. 5 shaft, together with a portion of the engine-and-boiler house. A Hathorn-Davey pump has been procured, and has arrived at the mine. Two Babcock and Wilcox boilers are on order, and are expected shortly. The No. 5 level in the mine was opened out at a depth of 90 ft. below No. 4 level. Three crosscuts were then driven off the No. 5 level chamber, one going north-west, one west, and one south-east. The latter has been extended 374 ft., and has intersected four large reefs, besides nine smaller veins and leaders. The four large reefs, where cut through, aggregate a total width of 40 ft. 6 in. The western crosscut was extended 104 ft., intersecting three large bodies of ore, besides two smaller veins. The three large bodies of ore are all branches of the large lode met with in the north-west crosscut. The north-west crosscut has been driven a total length of 280 ft., intersecting four large and distinct bodies of ore, besides numerous small veins and leaders. The united width of these four large bodies of ore, where cut through, is 85 ft., but the second was not intersected at right angles, and hence some deduction has to be made for this. The foot-wall section of the last (the Martha lode) has not yet been intersected. The Martha lode has been driven on eastward for a distance of 66 ft. The first lode intersected in the north-west crosscut (the Magazine) was driven on for a distance of 426 ft. At the No. 4 level the old south-east crosscut, in which the existence of the Albert, Prince, Empire, and Princess reefs were first discovered, has been extended a distance of 594 ft., making a total distance of 1,393 ft. At 1,199 ft. a new reef was discovered—now called the Royal—which is 9 ft. in width where cut through, and has been driven on for a distance of 298 ft. The mine-development and distances are as follows: Shaft-sinking, 1,188 ft.; No. 5 level, driving on reefs and crosscuts, 1,367 ft.; No. 4 level, driving on reefs, winzes, and crosscuts, 5,901 ft.; No. 3 level, driving on reefs, winzes, and crosscuts, 3,223 ft.; No. 2 level, driving on reefs, winzes, and crosscuts, 2,552 ft.; No. 1 level, driving on reefs, winzes, and crosscuts, 981 ft.; adit-level, driving on reefs, winzes, and crosscuts, 540 ft.; smithy level, rises and crosscuts, 167 ft.; old intermediate level crosscuts, 125 ft.; surface drives, 554 ft.: total, 16,598 ft. In the mine itself, apart from the mills, &c., an average of 603 men have been employed. During the nine months ended 31st December 79,808 tons of ore was treated for a return of 201,014 oz. of bullion; value, £223,576 11s. 5d. Until the end of September 190 stamps were at work, and since then 240 stamps, the remaining fifty stamps not having been started. The new 100 head of stamps at the Victoria mill, Waikino, are intended for wet-crushing. Six Union vanners have been erected, and the necessary treatment plant, the sands and slimes being separated and subjected to different treatment by the cyanide process. The cyanide plant used in the dry-crushing mills has not been altered. An additional locomotive and sixty-two trucks have been added to the rolling-stock of the railway from Waihi to the Victoria mill, Waikino. A 550-horse-power Yates and Thom engine, and five Babcock and Wilcox boilers, providing auxiliary steam-power for the 200 head of stamps at the Victoria mill, have been erected. The new stamps were made by Fraser and Chalmers, and weigh 1,250 lb. each.

Union Waihi Gold-mining Company (Limited).—The No. 1 Union shaft has been sunk 200 ft., making it a total depth of 668 ft. The shaft is now being opened out at a point 16 ft. from the bottom, where a chamber is to be cut, and the drawing-lift section of the main pump fixed. The second plunger section of this pump is also to be fixed at No. 5 level. When these works are finished crosscuts will be driven from the lowest level to intersect the lodes. The following extensions at the different levels from the shaft have been made during the nine months ending 31st December, 1900: No. 1 level, 149 ft.; No. 2 level, 296 ft.; No. 3 level, 45 ft.; No. 4 level, 283 ft.; No. 5 level, 356 ft.; making a total distance of 1,129 ft. In connecting those levels at different points rising and sinking have been done to the extent of 626 ft., and crosscutting off the different levels to the total extent of 200 ft. Stoping has also been carried on over Nos. 2, 3, and 4 levels. In the Mascotte section 200 ft. of driving has been done on the lode, 80 ft. of sinking, and 70 ft. of rising. In the Silverton section the pumping-engine was overhauled and put in good working-order, and the shaft repaired and strengthened with new timber to carry heavy pump-work. A Cornish pump-plunger and draw-lift, with all necessary pit-work, was put in, and an adit-level driven to the shaft. On the completion of these works the shaft was deepened 90 ft.; the sinking has been suspended since December for the purpose of placing a new sinking-pump in position. It is now about ready. The drive north on the lode at No. 4 level has been extended 245 ft., crosscut east at No. 4 level extended 150 ft., and stoping has been carried on over the back of No. 1 level. Amaranth section: The lode has been driven on for a distance of 280 ft., a rise put up to a height of 150 ft., and stoping has been carried on over the road adit-level. Extensive surface-works have been done in laying tram-roads on the flat and incline-trams to connect the mine with the battery, also the construction of hoppers, &c. The mill, consisting of forty head of stamps which formerly belonged to the Waihi-Silverton Company, and had been used almost exclusively as a dry-crushing mill by that company, has been overhauled and repaired, a No. 3 Gates crusher erected, and the treatment plant added to, the chief addition being the fitting-together of one of the steel tanks which had not been previously used, and

the erection of two large slime-collectors 32 ft. in diameter by 14 ft. in depth. An air-compressor pressure-tank and filter-press were also added to the plant so as to adapt it to wet-crushing. The process adopted is the same as that in use in the wet-crushing plant at the Victoria mill, Waikino, the sands and slimes being separated, and the latter dealt with by means of a filter-press. The mill was started on the 25th September last, working with two shifts for a time, and then increased to three shifts per day. Up to the 31st December 4,199 tons of ore was treated for 3,385 oz. of bullion; value, £4,558 3s.

Waihi Grand Junction.—This company had a large amount of water to contend with in the Junction section, which had the effect of considerably increasing the cost and retarding the work. The new pumping plant was started early in April, and the pumping-shaft sunk to the 500 ft. level by the end of the year, when repairing the level and development-work were at once proceeded with. In the Waihi West section the C shaft has been sunk 142 ft., making the total depth of this shaft 210 ft., and it is to be sunk to a depth of from 400 ft. to 500 ft., "or until favourable country is met with," when a level is to be driven from the shaft to intersect the reef and thereby prove its value in this section of the property. An average of fifty men have been employed. No returns.

Waihi Extended.—The operations in this company's mine have been principally directed to the sinking of a main shaft, the erection of machinery and poppet-head. The shaft was sunk by the aid of the windlass and bucket to a depth of 80 ft., when the water was too much to contend with by those means and machinery was erected. Work was then resumed, and a depth of 200 ft. attained by the end of the year, but the company intends to sink a further distance of 120 ft. before opening out for a level and driving to intersect the reefs. The machinery consists of a Tangye coupled winding-engine (mounted on a wrought-iron frame), with a pair of 8 in. cylinders and 14 in. stroke, and is capable of winding a load—exclusive of weight of cage—of 27 cwt. at a speed of 300 ft. per minute. The boiler is also a Tangye 14 horse power nominal or 30 horse power actual, made of steel with thirty 3 in. tubes, and to carry 100 lb. working steam-pressure. Ten men have been employed. No returns.

Waihi Consols.—This company's property was protected for a time, work being resumed in the month of September. The work has been mostly confined to driving a prospecting surface-drive on the western end of the property, which has attained a distance of 200 ft. without any reefs, &c., being intersected, and the intention is to drive it to the boundary, a further distance of 200 ft. A bore has also been put down on the flat near the southern boundary; this has reached a depth of 160 ft., but will have to go down 600 ft. or 700 ft. before a change (or the gold-bearing country) can reasonably be expected to be found. Six men are employed. No returns.

Waihi South.—Operations in this mine for a time were confined to extending two prospecting crosscuts in a north-easterly and south-westerly direction from the bottom of the shaft, at a depth of 270 ft., with the expectation of intersecting one of the Waihi Company's well-known lodes, when a large inflow of water was cut in the north-east crosscut. This was more than their pump and plant could contend with, and in consequence work was stopped, and the property protected, pending arrangements being made to raise capital to erect suitable machinery to cope with the water. During the time the work was carried on twelve men were employed. No returns.

Waihi Consolidated.—Only a limited amount of work has been done on this ground, the work being directed to prospecting the property by means of boring. Boreholes have been put down in several places, with a view to intersecting a reef and ascertaining the class of country, also the most suitable place to sink a shaft to develop the ground; but so far no important discoveries have been made. From three to five men have been employed. No returns.

Waihi Gladstone.—Operations in this mine have been confined to the development of the main reef in the No. 3 level, which varies in size from 4 ft. to 6 ft., its strike being north and south. It has been driven on at this level for 60 ft., and is said to be of a payable character so far as exploited In the Nos. 1 and 2 levels the reef has been opened up to a considerable extent. There are several hundred tons of quartz stacked on the surface and intended for treatment, but so far no large quantity has yet been put through a mill. Six men are employed.

Several claims have lately been taken up in the neighbourhood of Waihi, and prospecting operations are also being carried on in the Federal, Pride of Waihi, Waihi Monument, and Prince of Waihi Claims, from two to four men being employed on each. So far no important discovery has been reported.

Waihi Beach United Claim.—Prospecting operations have been carried on to some extent with from four to six men at the surface-levels, although no work of what may be termed a permanent character has been undertaken. I am informed sufficient capital has been raised to enable the owners to more systematically develop the property, and it has been decided to sink a shaft and prove the value of the various reefs at a depth.

Wharekiraupunga.

A little prospecting has been carried on in this locality, but no important discoveries have yet been reported.

Royal Standard.—There has been very little work done in this mine for some time past; it is under protection pending the owner (Captain Hodge) raising sufficient capital in England to enable him to more systematically develop the mine, which he is sanguine will yet prove to be a valuable property.

Waiorongomai.

Empire and New Mine.—This property has been steadily worked by the owner (Mr. E. H. Hardy), who is of opinion that when the mine is opened up it will again become one of the leading gold-producing mines in the district. The present operations are being directed to driving and stoping on the reef in the Empire section of the property, the results being highly

satisfactory, 1,189 tons of ore has been crushed for 882 oz. 9 dwt. of gold; value, £1918 11s. 9d. Twenty men have been employed between the mine and battery.

Loyalty Mine.—This ground has been worked with two men, whose attention has been directed to driving and stoping on some of the small leaders that have been opened up, and which vary from 1 in. to 8 in. in thickness. In places rich little patches of ore are found. 30 tons of ore was treated for 27 oz. 1 dwt. of gold; value, £67 12s. 6d.

A little prospecting-work is also carried on in two or three other claims in this locality, but no returns of gold have been obtained from them.

Te Puke.

There has been very little work done in this locality for some time, but it is reported an important discovery of alluvial gold was made by a miner named Tillsley between Te Puke and Rotorua. So far neither Mr. Ryan nor myself have visited the place, and therefore cannot give an estimate of the extent or value of the discovery.

Sunday Labour in Mines. — Permits issued by the Inspector and in force on the 31st December, 1900.

District.	Mine.	Date of Issue.	Number of Men.	Date of Expiry or Remarks.
Ohinemuri	Waihi Company	9/1/99	20	Until notified or other alterations are made.
"	"	23/1/99	10	
"	"	10/11/00	6	
"	Grand Junction	1/3/00	4	
"	Union Waihi	18/1/99	5	
"	"	10/11/00	6	
"	New Zealand Talisman ...	9/1/99	14	
"	" Crown ...	9/1/99	14	
"	Waitekauri	11/1/99	21	
"	" Extended ...	23/1/99	4	
Thames	The Mananu	24/9/00	5	
"	Whangamata Proprietary ...	10/11/00	6	
"	Thames-Hauraki ...	23/1/00	10	
"	Big Pump	11/1/99	4	
Coromandel	Kapanga	18/1/99	6	
"	Hauraki	18/1/99	12	
"	Royal Oak	18/1/99	9	
"	Hauraki Freeholds ...	8/9/00	6	Six men granted until water is taken out of shaft, then three men.
"	Kauri Freeholds	18/1/99	14	
"	"	5/7/99	7	
Great Barrier Island ...	Barrier Reefs	7/11/00	9	
Waikato	Taupiri Coal-mines ...	28/1/99	4	
			196	

Fatal Accidents.

A fatal accident happened to John McDonald on the New Zealand Crown Company's tramway on the 13th April, 1900. A report was forwarded on the 16th April, 1900.

An accident happened to William Wilson in the No. 1 shaft, Waitekauri Company's mine, on the 27th May, 1900. He was struck by an endless-chain block whilst at work in the shaft. He lived for a little over six weeks after it occurred. A report was forwarded on the 2nd June, 1900.

Charles Pohlman, whilst employed in the Waihi Grand Junction Mine, fell off the ladders in the pump-shaft, and was killed, on the 10th June, 1900. A report was forwarded on the 13th June, 1900.

James Maher was killed in the Talisman Company's mine on the 18th June, 1900, by a piece of rock falling on him whilst at work in a stope. Reported on the 22nd June, 1900.

Non-fatal Accidents.

There were fourteen non-fatal accidents, due notice of which was sent to this office, the same being inquired into without delay. Those which appeared to be of a serious nature were reported on in the usual way.

I have, &c.,

James Coutts,

Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

Mr. R. TENNENT, Inspector of Mines, Westport, to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,— Inspector of Mines' Office, Westport, 17th April, 1901.

I have the honour to report as follows on the gold-mines in the Marlborough, Nelson and West Coast districts for the period ending 31st December, 1900 :—

QUARTZ-MINING.

BLENHEIM.

Jubilee (Owners, Jubilee Gold-mining Company ; C. D. Morpeth, legal manager, Wellington).—The Jubilee Terrace forms the elevated north bank of the Top Valley Creek, and at an altitude of of 1,150 ft. No. 2 crosscut intersects the lode at a distance of 160 ft. From this point the lode is driven on 60 ft. north and 50 ft. south. A winze connected with the outcrop insures ventilation and a suitable means of filling in. The stone is conveyed by aerial tramway to a steam-driven ten-stamp battery at the foot of the hill. On a later visit I found operations had been suspended since November, and that the works were under charge of a caretaker.

Wellington (Owners, Wellington Syndicate ; Philip K. Watty, director in charge).—This newly opened mine is situated on the Jubilee Range, about a mile and a half further up stream from the Jubilee battery. Mining developments near the cap of the hill comprise a winze sunk to a depth of 35 ft. in the outcrop. The lode varies in thickness from 2 ft. to 3 ft., and is being intersected by a crosscut at a vertical depth of 50 ft. A ten-stamp battery is under construction at the base of the hill, to which the stone will be conveyed by aerial tramway.

COLLINGWOOD.

Taitapu Gold Estates (W. M. Fulton, mine-manager).—Operations chiefly consist of stoping a flat block 7 ft. in thickness in the Anthill section of the property. The stone is much improved in quality, and very encouraging returns have come to hand. In view of testing the auriferous values of the river beds and flats prior to dredging, four men are employed carrying out a series of borings.

Golden Blocks, Taitapu (F. Johnstone, mine-manager).—Since the Fraser and Chalmers three-stamp battery was increased by Price Brothers' five additional stamps, crushing operations have been continuous during the year. The quartz-supply stoped from No. 1 level showed a high grade average. Extension of No. 2 level on line of lode is being driven south. The workings in general are in good order, and ventilation satisfactory.

WESTPORT.

Britannia (Local syndicate ; W. Smith, mine-manager).—Mining operations, situated 2,000 ft. above sea, consist of three short crosscuts and several winzes sunk in the outcrop. The broken country affords unfavourable working-conditions, the lode varying in thickness from 9 in. to 3 ft., with no defined position or underlie. A two-stamp battery driven by water-power is connected by aerial and level tramways to the mine. Eleven men employed.

Twins.—All work at this mine is abandoned.

LYELL.

Alpine Extended (R. S. Shallcrass, legal manager).—During the greater part of the year operations at this mine have been suspended, and the works are now under the charge of the battery-manager.

Tyrconnel (owners, Tyrconnel Syndicate).—This rich leader is worked by a tribute party of four men, who obtain very profitable returns. Working-conditions are satisfactory, with good ventilation.

BOATMAN'S.

Kirwan's Reward (Owners, Kirwan's Reward Gold-mining Company ; W. Kirwan, mine-manager).—This open-faced quartz-deposit, situated about 300 ft. from the crown of the hill, has no defined geological position and varies in depth from 6 ft. to 30 ft. The Anglo-Continental Syndicate, who held an option on the property, spent considerable sums to determine the existence of the supposed lode, but without success. The original company then resumed possession and built a ten-stamp battery to treat the quartz-deposit referred to, the gold yield from which amounted to 1,873 oz. 7 dwt. 7 gr. for last year, with a cash value of £4,765 14s. 4d., from 1,763 tons quartz operated on. With a view of intersecting the main lode, the present company have driven a crosscut, 180 ft. in length, from the level of the aerial tramway. Twenty-two men are employed clearing away surface *débris*.

Welcome.—A connection has been made between No. 5 level, Welcome, and the low level, Specimen Hill, from which a back drive was driven a total distance of 1,153 ft. south ; then a crosscut of 120 ft. west to cut under the winze, which was connected by a vertical rise. All attempts, so far, to trace the stone down to the low level have proved futile, and now nothing remains to be done but mine out the stone in sight. Six men employed.

Just in Time.—After expending a considerable amount in exploration-work on the 400 ft. level the company decided to cease work as the prospects were not encouraging. The mine has since been let on tribute to a party of seven men, who repaired the old Reform level for nearly 900 ft., and effected a considerable amount of repairs on other drives prior to abandonment. The shaft is again full of water.

REEFTON.

Wealth of Nations Group.—The 700 ft. level was opened from the shaft and driven north for a distance of 440 ft., exposing a strong reef for nearly the whole length. Prior to deeper sinking a winze was sunk to the 800 ft. level, and the incline shaft sunk to the same depth, with additional

sump room, ventilation being maintained between the shaft-bottom and winze. The 800 ft. level (north and east) was vigorously pushed. The reef was tapped on this level at 142 ft. north of the shaft, from which point it was driven on to the eastern termination of the stone, and is now being continued north on a good width of reef. The total footage completed is 761 ft. driving and crosscutting, and 215 ft. of sinking and rising. Stoping commenced in December in a general manner on the 500 ft., 600 ft., 700 ft., and, more recently, the 800 ft. levels. The production of quartz milled, from development and otherwise, amounted in all to 1,979 tons, yielding 711 oz. 5 dwt. 23 gr. of gold, at a cash value of £2,834 7s. 11d. Surface arrangements have undergone considerable alterations and extensions. The twenty-stamp battery was thoroughly overhauled and readjusted, and the 50 ft. diameter overshot water-wheel substituted by a 6 ft. Pelton for driving purposes. Directly in connection with the mill is an extensive cyanide plant, consisting of six wood-built tanks and two sumps. The pulp coming directly from the amalgamation-tables is lifted 13 ft. by an 18 ft. diameter elevating-wheel and discharged into a classifying-box, from whence the pyritic slimes are separated over a series of twelve concrete tables, 15 ft. by 12 ft. The coarse sands are then passed over two Wilfley tables, on which the concentrates are extracted, leaving the filtered sands to flow on down a launder into the cyanide-tanks for treatment. The water-race capacity has been increased to meet working requirements, and the reduction-works are provided with electric light from a Crompton dynamo. The average working-capacity of the mill is about 1,100 tons a month, which quantity the management anticipate to treat monthly during the ensuing year.

Golden Fleece Group: Low-level Tunnel.—The amount of work done on this property during the year comprised 2,368 ft. of driving and crosscutting, and 598 ft. of rising. The following developments have been carried out since my last report: The winding-shaft from the low level to connect with Golden Fleece No. 6 level is completed, and fully equipped with a Ledgerwood double-geared drum engine (actuated by compressed air) installed in a chamber 24 ft. by 7 ft. by 11 ft., connected to the head of the shaft by an enclosed tapered rope-way. Other works—comprising excavation of chambers in Nos. 9, 8, 7, and 6 levels, building of engines, and connecting by 6,666 ft. of 5 in. and 1,815 ft. of 3 in. and 2½ in. compressed-air-pipe-line from the Murray Creek installation—were completed in October. During the construction of these works the various levels and rises were extended from the crosscut north and south on Nos. 9, 8, and 7 levels, the same being connected by rises where necessary. Stoping was started at the end of October, and milling operations operations have been going continuously since early in November. The tonnage crushed was 1,918 tons, yielding 1,946 oz. 15 dwt. 9 gr., with a total cash value of £3,859 5s. The whole plant is in excellent order and working satisfactorily.

Progress Mines of New Zealand (Limited).—Operations at the mine were carried on continuously during the year. Development-work, comprising 3,071 ft. of driving and crosscutting, and 913 ft. of sinking and rising, has resulted in opening out a large body of ore in sight, which, compared with the corresponding period of last year, shows an increase of 21,000 tons, in addition to the output of 40,564 tons quartz milled during the nine months of last year. This increased tonnage has decreased the cost of production by 1s. 9·696d. per ton on that of the preceding year. The eastern side of the mine was opened generally on levels Nos. 1, 2, 3, 7, 8, 9, and 10, and the B winding-shaft sunk from No. 9 to No. 10, a depth of 187 ft. (including 37 ft. of water-storage), making a total depth of shaft of 1,286 ft. Transport: The quartz transport by aerial line has given very little trouble since the "lock-coil" ropes were adopted on the loaded side. Several sections on the return side have been renewed with portions of the original rope and the plant is in good working-condition. The cost of transport has been reduced to 4·556d. per ton milled. Chlorination: Owing to the refractory nature of the concentrates, the work of the chlorination-furnace has been chiefly confined to roasting, preparatory to shipping them to New South Wales for smelting. Cyanide plant: The percentage extraction from the cyanide plant has not come up to expectations, and greater trouble has been experienced with the refractory matter than was anticipated by the results of earlier experiments. However, by varying the process slightly, better results may be expected from this source. The cost per ton is also slightly above the original estimate, being practically 4s. per ton, of which cyanide accounts for 2s. Prospecting: The company propose to start energetic prospecting in the neighbourhood of the old Globe shaft, from the surface down. Hoisting machinery being necessary to clear out the old shaft, the County Council is now regrading and widening the country track to enable the machinery being brought to the ground.

Keep-it-Dark Quartz-mine.—Mining and milling on this property were carried on steadily during the year, but outside the ordinary routine of work there are no fresh developments of importance to note. The ore-body west from main shaft is intersected and worked from three main levels, which form the centre of active operations. The output of quartz crushed was stoped from Nos. 2 and 3 levels. Thickness of ore shows no material change, but the grade varies somewhat as the working proceeds. No. 2 level was driven south 150 ft., but nothing of importance was disclosed; while north, on the same level, a block 50 ft. in length was passed through. A rise of 64 ft. connects this block with the south stopes. On No. 3 level north a fair-sized lode is exposed for 291 ft., and the No. 2 north face is nearly connected by a rise of 104 ft. Cyanide plant: Under the supervision of Mr. R. M. Aitken, this process has been working very successfully during the year, and the returns therefrom are regarded as highly satisfactory.

Hercules and *Keep-it-Dark No. 2 Mines* are still shut down.

New Scotia Quartz-mine.—This property, formerly held by the Sir Francis Drake syndicate, was lately bought by a local company, who acquired all rights to work the mine. Convenient to the accumulated tailings-heap, the new company erected a very complete cyanide plant, under the supervision of Mr. R. M. Aitken, of Reefton, and the returns yielded show a high percentage

extraction. Beyond unwatering and clearing up the mine, little or no work had been done at time of visit. New poppet-head gear was under construction.

Big River Quartz-mine.—The gold-production from this property for the past year has not been encouraging. Active prospecting was carried on in No. 6 level and other sections of the mine with unsuccessful results. A small pocket of stone, which pinched out with a yield of 74 tons ore, was worked on No. 2 level. Rising was continued on the track, but the prospects were considered unfavourable. The plant is in good condition.

Big River No. 2 Quartz-mine.—This property adjoins the original Big River Mine, and is held by a local company, who opened and extended an old tunnel to a total distance of 350 ft. So far the country-rock shows no favourable reef indications, but I was informed that a 6 ft. quartz outcrop was unearthed on top of the hill.

Last Chance Quartz-mine.—The A1 leader having pinched out, the party were obliged to turn their attention to a more profitable section of the property, where they are now working the quartz leaders in the sandstone formation.

Golden Lead Quartz-mine.—Under-crossing the Big River Road at a vertical distance of 50 ft., two miners have driven a tunnel south 350 ft. This intersects several gold-bearing leaders, but so far the prospects are not considered payable.

New Inkerman Mines (Locality, Merrijigs and Rainy Creek; B. Sutherland, mine-manager).—Mining matters on this property have been rather quiet lately. In the early part of the year the leading stope in No. 2 Supreme low-level reef was driven north and south to the face and securely timbered for ventilation. Afterwards a chute of stone, considered to branch from the main ore-body, was discovered a few yards westward from the Supreme south face. To prospect this offshoot downwards a winze has been sunk on the stone to a depth of 100 ft. below the Rainy Creek level, and a crosscut is being driven at that depth to prove the existence of the main lode. The manager intends to sink the winze to a further depth of 200 ft. or 300 ft., with a view of developing the ore-bodies to greater depth and increasing the supply of stone in sight. A battery-site is being surveyed on the west bank of the Inangahua River, two miles above its confluence with Rainy Creek; also a tramway to convey the ore from Rainy Creek tunnel to the battery.

Cumberland Quartz-mine.—After a lengthened period of unsuccessful prospecting by the late proprietors the property was sold by public auction, and bought by a local company. No effort has yet been made by the new company to develop the mine.

Paparoa Ranges.

Crœsus (Paparoa).—For battery purposes stoping is continued on Nos. 1 and 2 levels. The contractors in No. 3 low level ceased work after driving 6 ft., pending an advance in footage price or a concession in explosives.

Taffy Quartz-mine.—This open-face slate formation, intermixed with quartz leaders, is worked 35 ft. in width by 15 ft. in height, the ore being crushed by a five-stamp battery driven by water-power. According to the percentage of gold obtained from the large body of material crushed, the veins show a fair gold average, and give profitable returns. Ten men are employed.

The *Garden Gully*, *Minerva*, and *Roaring Meg* are all idle.

Accidents.

There have been no serious accidents reported from the quartz-mines during the year 1900.

General Remarks.

The present and future success of the gold-mining industry in the Reefton district must inevitably depend upon the productive capacities of the Consolidated Goldfields and Progress Mines of New Zealand; for, considering the extensive unexplored gold-bearing areas held by these companies, the high stage of development which these mines have recently attained, the large reserve bodies of ore in sight, and the scientific and newly erected, up-to-date crushing and gold-saving appliances, these gold-producing properties should not only maintain their past output, but show a substantial increase on previous returns.

Next in productive importance is the Keep-it-Dark Mine. The marked success of this property has depended wholly on the more modern and systematic mine-developments, the improved crushing machinery, and the scientific system of treating the low-grade ores by cyanide. Under these conditions a continuance of profitable returns may be looked for.

Should the New Inkerman Mines carry out their proposed extension—*i.e.*, to build an up-to-date sixty-five-stamp battery, with modern appliances, capable of treating successfully the extensive low-grade ores characteristic of this property—a large field will be opened for employment, and payable returns may be anticipated.

ALLUVIAL AND HYDRAULIC MINING.

Mahakipawa.

King Solomon Mine (Alexander Campbell, mine-manager).—Mining operations are suspended since the Cullensville Creek flood-water filled the new shaft to the surface (in July last), and carried away 10 chains of flume-line which supplied the motive-power for pumping and winding. However, the flume is rebuilt in a substantial manner, and arrangements are being made to start two direct 9 in. bucket lift-pumps, worked from quadrants, to unwater the old shaft. Four men employed.

Mahakipawa.—About twenty-five miners find a living along the Cullensville Creek and its tributaries.

Wakamarina Gorge Claim.—This company has made another effort to clean out the lower end of the claim between the pumps and tail dam. An incline tramway, worked by a haulage-rope from the pumping-engine, is constructed to raise the washdirt in trucks and discharge it over a washing-table into the river. A water-race two miles in length is under construction for washing purposes. During dry weather the pumps are able to pump the water one day in three. Eight men employed.

TAKAKA.

Waingaropupu.—On the Bu-Bu Diggings a number of miners continue to find employment, but scarcity of water is complained of. Dredging has made no move in this district.

COLLINGWOOD.

Parapara Hydraulic Sluicing Company (Area, 150 acres; William Peters, mine-manager).—The Hit-or-Miss and the Gungile sections of this property are the active centres of sluicing operations, where five nozzles are continuously employed. Weather conditions have been favourable, and a full water-supply of thirty heads maintained. Extension of these works is carried out on a large scale, and working appliances are in good order and condition. The yield of gold for the nine months was 1,366 oz. 7 dwt., with a total value of £5,294 12s. 1d. Twenty men employed.

The Collingwood Goldfields Company, Quartz Ranges (Area, 279 acres; F. G. Mace, mine-manager).—Extensive developments have been carried out on the sections of this property known as the Simmon's and Washbourne faces, which are continuously operated on by four nozzles, discharging thirty-five heads of water. The washdirt is deposited on an irregular schist formation, and varies in depth from 20 ft. to 40 ft. Water-races, pipe-lines, and other work in connection with the working of this property are constructed in a practical and substantial manner. Yield of gold was 356 oz. 11 dwt. 12 gr., with a total value of £1,314 11s. 10d. Seventeen men employed.

Rocky River Excelsior Sluicing Company.—When this property was visited Mr. Trent, the manager, was the only person employed.

Slaty River Sluicing Company.—This company have recently acquired this property, and the construction of a large dam is the only work towards development.

Badcock and Party (two men) continue to sluice on the creek, with varied results. The gold is very coarse.

Lower Rocky.—Squires's is the only party employed on this creek. The results for the year are very satisfactory. Four men employed.

Parapara Mud-flat.—Boy's and Cappel's syndicate have two men employed prospecting the locality in view of dredging. So far the prospects are satisfactory.

Scarlett's Claim, Karamea River.—Mackerrow and party, of Wellington, formerly worked this claim for a period of three years; but, results having proved unsatisfactory, they abandoned the property, which, according to agreement, reverted to the present owners. This party is now making various alterations in the tables and gold-saving appliances, with improved methods for working the property on a more extensive scale. These works are expected to be ready for sluicing operations in a few months.

Oparara River, or Fenian Creek, supports a few fossickers.

Simpson and Party's Claim is under a six-months protection, granted to enable them to construct a water-race for hydraulic sluicing and to erect gold-saving appliances to treat the fine gold.

WESTPORT DISTRICT.

The Wellington Old Diggings, Buller River (O. S. Watkins, legal manager).—Sluicing operations are in full swing with one shift of four men. Scarcity of water has tended to hinder the work.

Mackle and Party.—The original holders of this claim have sold their rights to another party, who are now working it. About twenty miners find employment along the terraces and tributaries of this creek.

Fairdown.—This hydraulic-sluicing claim, formerly held by the General Exploration Company, was lately purchased by a local syndicate, who have four men employed making necessary alterations for future development.

Waimangaroa River.—A few parties continue to find profitable employment by tunnelling in the banks of the river.

Halligan and Party.—The six shareholders of this sluicing and elevating claim continue to work it with satisfactory results.

Garry Owen Claim.—This sluicing and elevating claim, worked by Carmody and party, continues to give profitable returns.

Shamrock Claim (Philip McInroe, owner).—Since the elevating and sluicing plant was removed operations are confined to the north side of the property.

Virgin Flat Gold-mining Company (Limited), (William Snodgrass, engineer).—Satisfactory progress is being made with the various works, which consist of lining the outlet-tunnel 46 chains in length, the erection of gold-saving tables, and completion of the water-race flumes. The making and laying down the pipe-line to connect and convey the water from the race will be started at once. With regard to the general character of the works, they are carried out in a substantial manner. Twenty-six men employed.

CHARLESTON.

Powell's Hydraulic-elevating Claim.—Operations at this black-sand elevating claim were suspended, pending various extensions and alterations, which were being pushed forward with eight men.

Flynn and Party.—The cemented sand from this claim is crushed by a four-stamp battery, worked eight hours per day, with profitable results.

Dublin City.—This party work their cement-crushing claim with an eight-stamp battery, but the results are discouraging.

Golden Sand, Addison's Flat.—The results from the ordinary amalgamation treatment not being satisfactory, a 6-ton sample of the sand was bagged and sent to Sydney for special treatment.

AHAURA.

Nelson Syndicate.—On the north bank of the Ahaura a sluicing claim lately taken up by a Nelson syndicate is in charge of Mr. Bird, late mine-manager, Thames, who is taking out a trial washing. If the result is favourable, the proprietors intend to work the ground on a very extensive scale. The terraces and tributaries of the Ahaura River give employment to about twenty Europeans and a few Chinese.

ORWELL CREEK.

Dredge-construction is the principal mining news to note from this district.

NELSON CREEK.

Bellhill Sluicing Company (Dr. Scott, of Kumara, secretary; Mr. C. Carison, mine-manager).—Since the present company took possession of this hydraulic-sluicing property their time has been chiefly employed in the construction of dams and extension of water-races, in view of working the claim on the most modern principle. The washdirt is of exceptional depth, and unless water-supply in large volume is applied success is doubtful.

German Gully, near Callaghan's Creek.—This company has abandoned operations.

Healey's Gully (Owners, the Republic Sluicing Company; Mr. Morgan, mine-manager).—Sluicing operations were much hindered owing to scarcity of water during the heavy frosts. The miners were engaged opening out a new face with a less depth of washdirt. The yield of gold was 133 oz. 10 dwt., valued at £527 6s. 6d. Eleven men employed.

Montgomery Terrace.—With the limited water-supply at command, good prospects and progress were made. Three men employed.

Three Jacks.—Charles Hellier, mine-manager, was notified with regard to the careless manner in which gelignite was dealt with in the claim. Four men employed. Scarcity of water has been very much felt in this district owing to the very dry season.

Roaring Meg Gold-mining Company.—Operations have been suspended since Christmas, 1899. Twelve miners are sluicing the terraces and creek-bed with very profitable results. The gold is very coarse, and some very nice nuggets were found lately.

No Town Creek.—This district was not visited.

GREY VALLEY.

Sulky Gully.—This claim is worked by a Chinese company, under a rental of £20 a year to the owners, F. Wills and W. King.

Waiwhero Sluicing and Dredging Company (Limited), Barrytown (H. W. Young, engineer; J. Morris, mine-manager).—This company is a reconstruction of the original Waiwhero Sluicing Company (No liability), which—owing to many unforeseen difficulties—it was found necessary to reconstruct, with stronger finance. The company is now on the eve of completing its main Canoe Creek water-race, six miles and a half in length, and calculated to carry thirty heads of water. Completion of the race was delayed in consequence of the unfavourable conditions of sea-transit from Greymouth of the large quantity of timber required. The company propose to work this terrace-face by sluicing and table-washing, and other adjoining flat areas by hydraulic elevating and dredging. The yield of gold for the year is nil, but the total value of gold produced up to date is £1,346 15s. Forty men are employed.

Pactolus Sluicing Company (No Liability).—This company suspended active operations about the middle of June last.

Barrytown No. 1 (Alexander MacKay, owner; W. White, mine-manager).—The recent breakdown on the water-race is repaired, and mining operations on the blow-up principle are in full work. Fourteen men employed.

Considering the limited water-supply, a few hatters make a fair living on the beach terraces.

HOKITIKA.

Humphrey's Gully Hydraulic Sluicing Company.—The works in connection with this extensive water-race scheme are not yet completed. A contractor named John Foster was accidentally killed while rolling a log over the terrace.

Craig's Freehold.—Generally, with regard to timbering and ventilation, both sections of this property are worked in a practical and systematic manner. In the matter of mine-management, the company appointed Messrs. Goudie and Chesterman, the leaders of the respective tribute parties, to take the responsibilities under the Mining Act. The yield of gold for the year was 780 oz. 6 dwt. 12 gr., of a total value of £3,081 15s. 6d. Twelve men employed.

James Main and Party, Kanieri.—Several visits were made to this claim during the year, but on each occasion the mine was shut down and the employés absent. On the 13th November a miner named Stewart was partially buried by a rush of loose sand and gravel in the face. The Assistant Inspector, being in the locality, took full charge of necessary operations, and after five hours' work Stewart was rescued, with slight injuries only.

Ross.

Donnelly's Creek Drainage-race.—Operations on this drainage-race have ceased.

Ross United.—The yield of gold for the year was 212 oz. 6 dwt. 16 gr., with a cash value of £806 4s. 6d. The property continues to be worked on tribute by ten men.

Mont d'Or (Charles Davey, mine-manager).—As a *bonâ fide* hydraulic-sluicing concern, the company have the satisfaction to know that the plant and all material necessary to make the working of the claim a success are kept in good order, the only drawback being scarcity of water. During the year the yield of gold was 1,361 oz. 8 dwt., valued at £5,306 12s. Twenty-nine men employed.

Prince of Wales.—A dredge is under construction to work this claim.

Waiho.

Waiho Hydraulic Sluicing Company (Mr. Nicholas, mine-manager).—The manager has received instructions from his directors to make a survey and estimate of cost to bring the water to the most practicable position on the claim, in view of further extending operations. Five men employed.

Duffer's Creek.—Three Europeans and one Chinese are working on this creek. Several dredging claims are taken up, and four men are employed by an Otago syndicate to prospect the creek bed and flats. Three miners have lately opened out a sluicing claim at Lake Ianthe.

McArthur and Party, Waitaroa.—This party obtain very favourable results from their sluicing claim. The want of a pack-track round the Gorge Bluff is very much felt.

Wataroa.—About four miles up the Wataroa River three men are bringing in water to work the river-beach, which is considered payable from recent prospects.

Accidents and Fatalities.

Humphrey's Gully Water-race.—(19/10/1900): John Watson, a contractor, was killed whilst rolling a large root over the terrace.

Dredging Accidents.

Greenstone Junction.—(5/10/1900): John Lawson (not an employé) fell overboard into the stream, and was drowned.

Consolidated, Three-channel Flat.—Darcy Inwood, engine-driver, had his third finger on right hand crushed at first joint while placing his hand on air-pump bearing to feel if it was hot.

DREDGING.

Dredging, as a legitimate and practical gold-mining industry, has not reaped the rich harvest of success which non-practical and unscrupulous speculators so confidently predicted at the commencement of the boom. Fortunately, failure cannot be attributed to any defect in the auriferous or other natural conditions of the West Coast river-bed and beach-flat deposits, for they are prepared to yield the hidden treasures which they undoubtedly contain, provided the most advanced scientific and mechanical appliances are skilfully applied to unearth and save the precious metal.

Needless to say, success and economy in dredge-building have not received that solid consideration from our engineers which we anticipated, and which the importance of the subject demands; for, in studying the mechanical and gold-saving appliances of our most modern and up-to-date dredges afloat, they cannot be considered capable of effectively coping with the heavy and deep character of the ground, and of saving efficiently the fine gold common in our submerged alluvial deposits. As a consequence of these conditions, frequent stoppages from breakage and alterations of machinery, and leakage of pontoons, interfere seriously with the progress of the industry. Even in the case of dredges that are paying their way, the gold yield might be much enhanced if proper steps were taken to remedy the defects referred to.

The first principle of success, however, and one that should enable the engineer to base his calculations on a sounder and more practical footing, is the carrying-out of a more thorough and efficient system of prospecting preparatory to designing a dredge. Should this system be effectively pursued on honest reliable lines, the progress of the industry will be enhanced and more satisfactory results obtained.

Considering the immense wealth imbedded in the highly auriferous black-sand and other deposits within easy access, this important factor of wealth does not appear to receive the careful attention which we would naturally expect. Judging from the lucrative earnings won by the beach-combers by the most primitive system of gold-saving, and in many cases with scarcity of water, modern dredges of less lifting and more gold-saving capacity ought to effectively cope with these deposits at a minimum expenditure both in construction and maintenance.

Working Dredges visited by Inspector of Mines, Westport.

Name and Situation of Dredge.	Owners.	Dredge-master.	Remarks.
Marlborough.			
Moana	Moana Gold-dredging Company ..	George Mirk ..	Pontoons not fenced; manager promised to have it done at once. Copies of regulations posted to manager.
Buller River.			
Rocklands	Rocklands Gold-dredging Company ..	James Morel ..	Dredge fully equipped; ready to start dredging operations.
Consolidated	Consolidated Gold-dredging Company ..	George Crompton ..	Dredge fully equipped according to regulations.
Mokoia	" ..	Charles Cedarman ..	Dredge fully equipped, with the exception of a small life-boat, which was ready at Greymouth.
Buller Junction	Buller Junction Gold-dredging Company		Fully equipped; ready to start operations.
Waipuna, Totara Flat ..	Waipuna Gold-dredging Company ..	Sidney Fasche ..	Well-hole and exposed machinery not fenced; manager promised to have it done at once.
Boatman's.			
Reeves's Proprietary ..	Reeves's Proprietary Gold-dredging Company	R. Scott	Sleeve required on engine-shaft, and deck manholes not covered.
A1	A1 Gold-dredging Company	R. Liddicoat ..	Nearly ready to start.
Nelson Creek.			
Nelson Creek	Nelson Creek Gold-dredging Company ..	Robert Edmunds ..	Sleeve wanted on engine-shaft, and ends of elevator-shafting required to be covered; hand-rail wanted on gangway and across end of tables.
Pactolus No. 1	Pactolus Gold-dredging Company ..	James Cowan ..	Sleeve wanted on engine-shaft, and other parts of the machinery require fencing.
Grey River.			
Ford's Creek	Ford's Creek Gold-dredging Company ..	J. NcNeill ..	Sleeve wanted on engine-shaft, and fencing required for other parts of machinery.
Grey River	Grey River Gold-dredging Company ..	A. Cowan ..	Well-hole required fencing, and the engine-shaft required a sleeve.
Dobson No. 2	Dobson No. 2 Gold-dredging Company ..	R. Newel ..	Dredge fully equipped, and fencing according to regulations.
Greymouth.			
Leviathan	Leviathan Gold-dredging Company ..	P. McCormac ..	Well-hole and parts of the machinery require fencing.
New River	New River Gold-dredging Company ..	J. Naylor.. ..	Defects in the railing and machinery fencing pointed out.
Kumara.			
Greenstone Creek	Greenstone Creek Gold-dredging Company	J. Robertson ..	The electric light is installed on this dredge.
Hokitika.			
Mahinapua	Mahinapua Gold-dredging Company ..	G. H. Chevestan ..	This dredge is worked on a railway-line, and the material is lifted on to large movable tables for washing.
Totara River, Ross.			
Totara	Totara Syndicate	William Robertson	Two exposed arms of the engine to be covered, and a light line to be replaced at the bows.

LIST OF DREDGES BUILDING, WORKING, OR STANDING.

The following is a list, up to date, of the dredges in the Marlborough, Nelson, and Westland Mining Districts, and the locality where the dredge is situated :—

Dredges Building.

Marlborough.—Omdurman, Top Valley Creek; Golden Point, Wakamarina River.
Westport.—Wareatea, Island Creek.
Buller River.—Premier, Welcome.
Ahaura River District.—Callaghan's Creek, Ahaura, Moonlight, Watterson, Shellback.
Ngahere.—Red Jack's, Red Jack's Creek.
Grey River.—Ruby Creek, Grey Valley United.
New River.—Marsden No. 1, Maori Queen, Great Greenstone.
Hokitika.—Hokitika River, Hokitika Junction.
Ross.—Prince of Wales, Ross Day Dawn.

Dredges Working.

Marlborough.—Moana.
Buller River.—Rocklands, Consolidated, Mokoia, Buller Junction, Buller No. 2, Four Rivers
Boatman's.—Reeves's Proprietary, A1.
Nelson Creek.—Nelson Creek, Pactolus No 1.
Totara Flat.—Waipuna.
Grey River.—Ford's Creek, Grey River, Dobson No. 2.
Greymouth.—Leviathan, New River.
Kumara.—Greenstone Creek.
Hokitika.—Mahinapua.
Totara River, Ross.—Totara.

Dredge Standing.

Imperial, Wakamarina.

Dredges not visited.

Buller River.—Buller No. 2, Four Rivers.

HEMATITE PAINT AND KNIFE-POLISH.

Washbourne Brothers' Parapara Hematite-paint Works.—The year's output—60 tons—of paint shows a steady increase on preceding years, and the proprietors are sanguine of further increase in sales as the preserving properties of the paint on wood are better known. Sales of knife-polish have materially increased during the year, and the agents' reports from the purchasers are satisfactory. The works are under important alterations and improvements in order to meet the growing trade necessities.

I have, &c.,
R. TENNENT,
Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

Mr. EDWIN RIDLEY GREEN, Inspector of Mines, Dunedin, to the UNDER SECRETARY, Mines Department, Wellington.

SIR,— Office of Inspector of Mines, Dunedin, 13th April, 1901.

I have the honour to report on the several gold-mines and dredges visited by me.

ALLUVIAL AND HYDRAULIC MINING.

Round Hill Gold-mining Company, Round Hill (G. Lee, manager).—Three paddocks are being worked alternately, as water suits. The bush is felled and cleared in advance. The upper 20 ft. of the face (which is about 40 ft. deep) is carried ahead, the silt elevated, and the roots and tree-stumps cut out and burnt. The best of the wash is on the bottom, and has been driven and blocked out by Chinese in the early days. Patches of original bottom-wash are occasionally met with, and these carry very good gold. At a subsequent visit I noticed that Mr. J. Ramsay (who has been appointed manager in succession to Mr. G. Lee) had somewhat modified the method of operations. Instead of working separate paddocks as formerly, the water is concentrated, and only one paddock worked, with, it is said, more satisfactory results. The tables have been enlarged, and an extra box added at the head, making three parallel boxes into which the elevator discharges. The elevator and directors (two) are lifting 56 ft., and working under a pressure of 270 ft. head, about twenty-seven heads of water being used.

Ourawera Gold-mining Company, Round Hill.—Two paddocks at present being worked. Excellent water-pressure (450 ft. head) facilitates the breaking-down of the hillside, and good work is being done. This claim, like the Round Hill, is working on the true bottom (diorite), and good results are obtained where the ground has not been previously worked. The plant as at present erected is elevating 36 ft., but the lift is about to be increased to 42 ft., to give more fall for the disposal of tailings. The high water-pressure enables the men at the nozzle to stand well back from the face, which is 50 ft. to 60 ft. high. Mr. James Coulling has been appointed manager in succession to Mr. J. Ramsay, who is now with the Round Hill Gold-mining Company.

Smith Gold-mining Company, Round Hill (J. Smith, manager).—Working up the old bed of the Ourawera Creek. Dirt principally consists of tailings from old diggings on the hillside, with 2 ft. to 4 ft. of virgin ground on the bottom. Elevating, 30 ft., under 150 ft. head of pressure.

Arthur Dandy and Party, Round Hill.—Reworking tailings from old diggings in California Gully, and working up the creek-bed. Elevating, about 25 ft.

Undaunted Gold-mining Company, Orepuki (Cross and party).—The old company recently sold out to a party of working miners. The shaft and drives have collapsed, owing, probably, to the timber giving way underground, causing rents to the surface, and a soakage of water from the many races caused the sand to "run." The new owners are now sluicing the whole claim-face away.

Sorrenson, Orepuki.—Ground-sluicing; water turned over the face of the claim.

R. King, Orepuki.—Sluicing up the gully under very few feet head of pressure.

J. Forbes, Orepuki.—Driving and blocking out; timber carefully set right up to the face, which is near old workings.

Forbes and King, Orepuki.—Driving and blocking out. An abundance of timber is used; it is well put in, and a large stock is kept on the surface near the mine-mouth.

Evans and Tilley, Orepuki.—Driving and blocking. The old entrance to the drive has been sluiced away by the adjoining claim-owners, and the owners were busy laying down a new tip and tail-boxes.

Whelan and Wallace, Orepuki.—Driving. Like Evans's claim, the entrance has been sluiced away. To allow of this, no work has recently been done in the drive.

C. Evans, Orepuki.—Ground-sluicing. A good area of ground has been turned over since my last visit.

There are about seventy European and thirty Chinese miners at regular work throughout this district (Orepuki). Some of the miners declare that the available ground will be worked out in from three to five years.

Mr. J. Corbett, lately manager of the Undaunted, has been prospecting at Pahia, with very encouraging results, in grounds said to resemble the Round Hill deposit.

Goldie and McIvor, Landslip, Waikia.—Driving and blocking out at the foot of the terrace on the river-bank. The wash, which is fairly rich, runs from 8 in. to 2 ft. in thickness, and is resting on a pipeclay false bottom. A seam of lignite, which has been worked to some extent, underlies the wash.

Moonlight No. 1 Sluicing Company, Moonlight (T. Sanders).—About 2 acres have been worked. A tail-race 5 chains long by 25 ft. deep has been cut through the solid rock. The face is 150 ft. deep, and no "bottom." A new lower-level tail-race tunnel is shortly to be driven. The deposit lies in an old river-bed running parallel with the present Moonlight Creek. The water is brought in from Dead-horse Creek. The race is two miles in length, and carries about four heads.

Moonlight No. 2 Sluicing Company, Moonlight (P. D. Resta, manager).—This claim extends from Dead-horse Creek up the valley. A large race on which some £5,000 has been spent is not yet completed. About 100 tons of plant will be required to work the claim. Most of the plant is on the ground, to which point it has been "packed" on horseback from Arthur's Point, a distance of about eight miles over very difficult country.

Skipper's Sluicing Company, Skipper's.—A tail-race tunnel 8 ft. high by 4 ft. 6 in. wide has been driven 350 ft. through a band of very hard rock, which lies between the present bed of the Shotover River and the old river-bed formation on which the claim is situated. The face is about 150 ft. high, the upper layers are principally silt, carrying a few seams of gravel containing a little gold. The lower portion of the formation carries very large stones and rough wash with coarse gold. The face is too perpendicular; the top should be sluiced off, and more batter given to the sides to provide for the safety of the men employed, and also to avoid the possibility of the mouth of the tunnel becoming blocked by a large fall of material. A fatal accident occurred in the tail-race tunnel on the 7th November, 1900, whereby the manager and two of the men lost their lives. (For particulars see appendix, "Accidents").

Morgan and Hughes, Shepherd's Flat.—Ground-sluicing. The face is high, and not sufficient batter kept on it for safe working. The material treated is stony, and a large amount of hand-labour is required to dispose of the blocks met with.

Shepherd's Flat Claim, St. Bathan's (J. Ewing).—The Vinegar Hill water is being used, and one elevator is kept working constantly. The ground treated is very stony.

Vinegar Hill Claim, St. Bathan's (J. Ewing).—Not working. Nothing has been done here for some time past.

Kildare Hill Deep Claim, St. Bathan's (J. Ewing).—No work has been done here for some time. The sides are falling in, and there is considerable depth of water in the paddock. A fence, if carried round the perpendicular faces, might prevent persons inadvertently walking over the sides and falling into the paddock, in the event of which happening escape would be extremely improbable.

Eagle and Gray, St. Bathan's.—Blowing overburden away to make room for tail-race on the lower cut.

M. and E. Company, St. Bathan's.—A fairly large paddock has been taken out and benched. The upper portion is sluiced down and elevated, and the lower part of the paddock is worked by a suction pump. Good returns are being obtained on the bottom (reef).

C. Nicholson, St. Bathan's.—Stripping and ground-sluicing the surface of old digging-workings, from which good returns are being got.

Scandinavian, St. Bathan's (N. Nicholson).—This company recently started to use their own water instead of selling it as formerly. Two elevators are kept fully employed, and a good wash-up is expected at the end of the season.

ACCIDENTS IN ALLUVIAL CLAIMS.

Fatal Accidents.

11/9/1900.—William McWhirter, age seventy, Whitechapel Flat, Arrowtown. Deceased worked alone in his claim, and was found under a large stone, which, it appears, he was in the act of removing when it fell striking him on the back of the head. Verdict: Accidental death.

18/10/1900.—William Williams, sixty-three years of age, Cambrian's, was working in an old tunnel removing some washdirt when a fall of earth took place and buried him. Coroner's jury brought in a verdict of "Accidental death."

7/11/1900.—Skipper's Sluicing Company, Londonderry Claim, Skipper's Point. The tunnel tail-race being blocked, three men named James Scott (the manager), Martin Tobin, and William Low were busy removing the obstruction, when the whole mass of tailings and dead-water standing in the paddock broke away, overwhelming the three men, who were carried along the tunnel and smothered in a mass of tailings and water on the dump on the bank of the Shotover River. The Coroner's jury brought in a verdict "that there was personal recklessness by all concerned, and that the manager did not take sufficient care to protect the lives of the men."

4/12/1900.—Thomas Lister, Arrow River. Caught by a large fall of earth from the face and smothered while working alone in his claim.

Non-fatal Accidents.

23/9/1900.—John Arkell, aged sixty-five, Lowburn. A small fall of gravel from the face struck Arkell on the leg, causing fracture above the knee. Arkell was taken to the Cromwell Hospital, where he died about a fortnight later, death being caused by an attack of pneumonia. An inquest was not deemed necessary.

Working Dredges Visited by Inspector of Mines, Dunedin.

Name and Situation of Dredge.	Owners.	Dredge-master.	Remarks.
Lawrence.			
Lawrence	Lawrence Gold-dredging Company	A. Wakefield	Regulations generally well observed; deck planking forward is somewhat rotten, and is to be renewed where required; the pontoons through overloading at the stern have only 5 in. of a freeboard.
Gabriel (late Tuapeka Flat)	Gabriel Gold-dredging Company	J. P. Uren	The old dredge has been reconstructed, pontoons renewed and enlarged, and dredge is in good working-order; rules complied with except boat, timber for construction of which is on the ground.
Tuapeka	Tuapeka Gold-dredging Company	J. Donaldson	Everything generally in proper order; hand-rail requires to be extended to the end of tail-boxes.
Golden Rise, Wetherstones	Smyth and party	R. Young	Fencing adequate; other rules complied with. The dredge is working half the width of the claim; the other half is being worked by hydraulic-elevating plant, and is saving a larger percentage of gold than the dredge from a given quantity of material treated.
Waitahuna.			
Manuka (late Adam's Flat)	Manuka Gold-dredging Company	W. T. McKenzie	Not properly started work yet; opening up paddock; rules observed.
McCormac	McCormac and party	W. T. Thomson	Generally in good order, and appliances in their proper places; fence required at the main drive, as pointed out to master.
Havelock	Havelock Gold-dredging Company	..	All appliances required by special rules in good order and in their proper places; fence-rail required at the engine main drive, and the projection of the main shaft in the travelling-way requires to be protected.
Imperial	Imperial Gold-dredging Company	George Scott	Rules complied with, and dredge in good working-order.
Waipori.			
Golden Point	Golden Point Hydraulic Dredging Company	William O'Brien, jun.	Claim below Nardoo Creek includes Nardoo Flat. Bought Perry's old dredge at Waitahuna, and removing it to the claim at Waipori. It is proposed to drive machinery by Pelton wheel under hydraulic pressure. The water-pipes will be carried in paddock on small pontoons, an arrangement of universal points will allow the dredge to move freely while working, and the pressure will be continually maintained.
Glenore.			
Gold Bank	Gold Bank Gold-dredging Company	A. Thomas	Old rules only posted; no boat-hook or light-line in the boat. I noticed one of the crew going ashore by travelling along the elevator while the dredge was working. I drew Mr. Thomas's attention to this, and subsequently wrote requiring him to have the practice discontinued owing to the risk of a serious accident therefrom.
Stirling	Nelson and party	J. Nelson	Machinery undergoing repairs, and putting on new screen and elevator.
Miller's Flat.			
Pringle and party	Pringle and party	J. Pringle	Fencing and appliances in good order; no rules posted.
Golden Gate	Golden Gate Gold-dredging Company	D. Ballantyne	Dredge and all appliances in excellent order.
Otago	Otago Gold-dredging Company	R. Williamson	No boat-hooks on board, and rules not posted; dredge undergoing repairs.
Roxburgh.			
Gold Queen	Gold Queen Gold-dredging Company	T. H. Gourlay	In good order generally; gangway across well too narrow and temporary; no life-belts on board. Secretary written to requiring him to provide proper gangway and life-belts.
Clyde.			
New Alexandra	New Alexandra Gold-dredging Company	D. McMath	Old rules posted, and only one boat provided; bows require to be cleared of timber and fenced. This is a bank claim on the east bank of the river.
Matau	Matau Gold-dredging Company	H. Sanders	Dredge and boats fully equipped with life-saving appliances; fence required on the outside of the side shoot from the tables; one chain only as fencing round the hull, instead of two chains as required by regulations.
Unity	Unity Gold-dredging Company	T. Barry	Dredge stopped for repairs; bows require to be fenced; rules well observed. Face of work in the bank 60 ft. deep, of which 20 ft. is below river-level.
Vincent	Vincent Gold-dredging Company	James Hewitt	Regulations generally well observed; fence required at bows; the fence at stern unsafe, one of the stanchions being broken. The dredge is working on the up-river side of the Clyde Bridge, the after part being immediately under it.

Working Dredges Visited by Inspector of Mines, Dunedin—*continued.*

Name and Situation of Dredge.	Owners.	Dredgemaster.	Remarks.
Clyde—continued.			
Vincent Extended	Vincent Extended Gold-dredging Company	A. Kennedy ..	Dredge, fencing, and all appliances in excellent order, and rules well observed.
Kelly and Casey	Kelly and Casey Gold-dredging Company	T. G. Brown ..	A new dredge on the point of starting; well equipped with boats and life-saving appliances; fencing required at bows and well, as pointed out to the dredge-master.
Cromwell.			
Alpine Consols	Alpine Consols Gold-dredging Company	T. Shore	Dredge and appliances in good order, and Regulation 83 complied with.
Alpine No. 2..	Alpine No. 2 Gold-dredging Company	A. Gibson ..	Fence required on the outer side of the side shoot from the tables; fencing and appliances in good order, and rules well observed.
Hartley and Riley	Hartley and Riley Gold-dredging Company	George McLay ..	Dredge generally in good order, and regulations observed; to fence side shoot at tables.
Central Electric	Central Electric Gold-dredging Company	James Ledingham..	Dredge supplied with life-belts, life-buoys, and boat-hooks; bows to be fenced. W. B. Morgan, one of the crew of this dredge, was drowned on 16th October, 1900, the result of a boat accident while running a line. For particulars see Appendix, "Accidents."
Junction Electric	Junction Electric Gold-dredging Company	A. Ross	All in good order; rules well observed.
Electric Extended	Electric Extended Gold-dredging Company	A. Bremner ..	Dredge well equipped, and rules observed.
Cromwell	Cromwell Gold-dredging Company ..	N. P. Kloogh ..	Old rules only posted; one rail only in fences at well and stern of dredge, where two rails required; otherwise in good order.
Lady Ranfurly	Electric Gold-dredging Company ..	A. Steele	Fence-bar required at engine main drive and rope-way; appliances in good order.
Magnetic	Magnetic Gold-dredging Company ..	W. H. Kitto ..	Stopped for repairs; fence-bar required at the engine main drive; rules complied with.
Kawarau Gorge.			
Second Magnetic	Second Magnetic Gold-dredging Company	J. F. Kitto ..	Dredge and appliances in good order; well-hole requires to be covered or fenced.
Voltaic	Voltaic Prospecting Gold-dredging Company	C. Stevens ..	Old Turakina pontoons removed from Springvale, Manuherikia, and re-erected on this claim. A boring plant is fitted up on the pontoons by Mr. Osborne, of Christchurch, and the claim is being successfully prospected at a small cost as compared with the usual method of building a complete dredge capable of working the claim in event of proving payable.
Upper Magnetic	Upper Magnetic Gold-dredging Company	J. C. Ray.. ..	Dredge and all appliances in excellent order; one of the best-equipped dredges on the river.
Meg and Annie	Meg and Annie Gold-dredging Company	J. D. McIntosh ..	Generally in good order, and rules observed; to fence silt-shoot at the tables.
Gibbston.			
Merrimac	Merrimac Gold-dredging Company ..	D. McLean ..	Regulations practically ignored; boats not equipped with life-buoys, boat-hooks, and light-lines; no boat-hooks on board; well unfenced, and a fence required at the side shoot from the tables. Wrote secretary, Mr. R. Pilling, of Lawrence, requiring him to provide appliances forthwith.
Galvanic	Galvanic Gold-dredging Company ..	A. Young.. ..	Only one boat at the dredge, the other boat being used for crossing an arm of the river some distance away from the dredge. I have written the secretary of the company requiring him to keep the dredge provided with two boats; no life-buoy at stern; fence required at side shoot and stern.
Metallic	Metallic Gold-dredging Company ..	Charles Allen ..	Side shoot requires to be fenced; dredge is well equipped; fencing good, and rules complied with.
Arrow Junction.			
Arrow Junction	Arrow Junction Gold-dredging Company	A. Maxwell ..	Fence required at the bows of the dredge, and also bars across the side doors; no life-buoys, boat-hooks, or light-lines on board, I have written to the secretary of the company requiring him to furnish them forthwith.

WORKING DREDGES VISITED BY INSPECTOR OF MINES—*continued*.

Name and Situation of Dredge.	Owners.	Dredge-master.	Remarks.
Arthur's Point, Shotover River.			
Arthur's Point	Arthur's Point Gold-dredging Company	J. Johnston ..	Well to be covered or fenced, and a proper gangway required between the dredge and the bank.
Bannockburn.			
Shepherd's Creek	Shepherd's Creek Gold-dredging Company	F. Woodhouse ..	Low fence required round winch-engines and spur-gearing attached thereto.
Cardrona.			
Rolling Stone	Rolling Stone Gold-dredging Company	J. von Haast ..	No life-buoy, light-lines, or boat-hooks ; dredge incomplete, and stopped for finishing touches. This dredge was fitted with hand-winches, which caused three slight accidents during the short period she was at work (two months); they are now taken out, and are to be replaced by steam-winches. The former dredge-master (Robinson), while doing something about the spur-gearing, got his arm crushed, and it was subsequently amputated at the shoulder.
Livingstone.			
Maerewhenua	Maerewhenua Gold-dredging Company	C. Milne	Dredge working, though not completed; three buoys on board, but no boat-hooks or light-lines. The boat, a "flatty," not suitable for river-work.
Waikaka.			
Little Waikaka	Brownlee and party	Robert Brownlee ..	Working-face, 12 ft. to 16 ft.; 4 ft. of clay on top, which is troublesome in the boxes, supply of water being barely sufficient to carry it away. Only one life-buoy aboard; rules observed; pontoons awaiting timber for repairs.
Lillieslief (late Woolshed No. 2)	Nicoll and party	William Mercer ..	Owing to the depth of clay stripping, dredge failed to pay on her former claim, and she has been removed from Drowning Creek and re-erected on a claim near the "Forks."
Waikaka Forks	Waikaia Forks Gold-dredging Company	..	Repairing and altering; the revolving screen has been taken off and replaced by tail-boxes.
Waikaka Queen	Waikaka Queen Gold-dredging Company	J. Wallace ..	All in good order, and special rules complied with; fencing at bows, fly-wheel, and pump-driver required.
Waikaka United	Waikaka United Gold-dredging Company	W. Wilson ..	In good order, and appliances in proper place; wheel to be fenced or covered.
Globe	Globe Gold-dredging Company ..	George Lee ..	In good order; alterations are being made for the purpose of increasing the spread of tables and the supply of water for treating the material raised.
Ibbotson's	Ibbotson and party	J. H. Maslin ..	All in good order, and life-buoys, &c., in their proper places.
Premier Waikaka	Premier Waikaka Gold-dredging Company	E. Reed	Rules complied with, and dredge in good order; rope-drive to be fenced.
Record	Record Gold-dredging Company ..	A. E. May ..	No copy of rules posted; no boat-hooks or light-lines on board; rules posted; the hooks and lines not yet in hand, but the dredge-master proved to me that they were on their way to the dredge.
Pioneer	J. R. Perry	H. Parsons ..	Special rules observed; dredge in good working-order; pontoons have been recently renewed; Lee's tables, which are a modification of the Round Hill Gold-mining Company's tables, have been placed on the dredge, and a spread of 450 ft. is obtained; the water-supply has been increased 20 per cent., and the dredge-master informs me that 10 per cent. more gold is taken from the ground than formerly.
Patterson's Freehold	Patterson's Freehold Gold-dredging Company	J. M. Walker ..	Rules well observed, and dredge in good working-order.
Gleniti	Gleniti Gold-dredging Company ..	A. Rennie ..	Only one buoy on board, and no boat-hooks or light-lines at bow or stern.
Waikaia.			
Dome Creek	Dome Creek Gold-dredging Company	W. H. Kitto ..	Generally in good order; regulations complied with; rope-drive to be fenced.
Nugget	Nugget Gold-dredging Company ..	..	No one about; dredge closed down meantime; ladder too short and unable to bottom.
Charlton.			
Charlton Creek	Charlton Creek Gold-dredging Company	F. Bennett ..	Dredge and appliances in good order.

WORKING DREDGES VISITED BY INSPECTOR OF MINES, DUNEDIN—*continued.*

Name and Situation of Dredge.	Owners.	Dredge-master.	Remarks.
Charlton—continued.			
Central Charlton	Central Charlton Gold-dredging Company	T. Barnes ..	Not working; winches sent to Dunedin for repairs; no boat-hooks and only one buoy on board.
Waimumu.			
Waimumu Extended	Waimumu Extended Gold-dredging Company	George Pettigrew ..	Rules complied with, and the machinery well fenced; no rules posted; all in good order; gangway required at bows.
Waimumu Central	Waimumu Central Gold-dredging Company	George Bichen ..	No boat-hooks or light-lines on board. The main tail-box is 60 ft. long by 6 ft. wide, and the return tables are 20 ft. by 12 ft., a total spread of 600 square feet. The dredge is working in swampy ground, and some difficulty is experienced in getting rid of the "Maori heads" in the boxes.
Waimumu	Waimumu Gold-dredging Company ..	F. Brown ..	Pontoons overloaded at stern, and only 6 in. of freeboard; no boat-hooks or light lines at bow and stern; old rules only posted.
Waimumu Queen	Waimumu Queen Gold-dredging Company	James Cumming ..	Generally in good order; rules complied with.
Mataura.			
Eureka	Eureka Gold-dredging Company ..	W. R. Knightly ..	Machinery, late Crookston's "Mountaineer"; pontoons new. I condemned smaller boat as being dangerous and unfit for use on the river. No rules posted; fence required at bow and stern; being shifted to Mataura Island, the claim at Tuturau being considered unpayable.
Chatton.			
Gold Creek	Gold Creek Gold-dredging Company ..	W. Robins ..	No boat-hooks or light-lines on board; fence-rail required at pump-drive; otherwise in good order.
Otama.			
Otama (late Enterprise Gully)..	Otama Gold-dredging Company ..	D. O'Leary ..	Only one boat alongside, the other being in use down the river; fence-rail required at the main drive; only 12 in. of freeboard at the bows; the pontoons are on the small side for river-work, and have not sufficient buoyancy to comfortably carry the plant and machinery on board.

Protection to Life and Safety of Workmen on Dredges.

The newer dredges, as a rule, are complete in their equipment of appliances and fencing in respect to compliance with Regulation 83.

The machinery and belting are compactly placed and spaced, and good roomy travelling- and passage-ways are provided on the decks, thus minimising the risk of accident. Ample freeboard, ranging from 2 ft. 6 in. to 3 ft. 6 in., is also provided.

The majority of dredge-masters, many of whom now have their first charge, are making earnest endeavours to comply with the special rules, and provide for the safety and comfort of their crews. The decks and machinery are now so fully housed-in that the men on shift, even in the roughest weather, work under comparatively comfortable conditions.

The boats in general use on the rivers, for communication between the shore and the dredges, range from 18 ft. to 21 ft. in length by from 8 ft. to 10 ft. beam, have bluff high bows, and are found to be useful and safe, and easily handled by the steer-oarsmen in the river-currents. The boats are run on the bow side lines, each having a painter made fast to a traveller on the line, and in the boat to a runner—an iron ring and crossbar in the bows. A post is generally erected in the bows, also a light chain fitted, which is used as a stopper when running a line. With boats equipped with all these appliances, the regulations observed, and care exercised, there is little risk of accident when shifting or running lines, as becomes necessary, as the dredges work up or down the rivers.

All the dredges stop for oiling-up once or twice during each shift, or at the change of shift; and enginemen breaking this rule have met with very severe injuries.

The use of hand-winches on dredges is confined to the older and smaller type of dredge, steam-winches being invariably used on the modern machine. The Rolling Stone dredge, Cardrona, was provided with hand-winches at the outset, but after their early experience—three men injured within five weeks by the winch-handles reversing—the dredge was closed down until steam-winches were fitted.

Five other accidents on dredges have been reported to me during the year, the most serious being that of William B. Morgan, one of the crew of the Central Electric dredge, Cromwell, who was drowned while running a line in a boat from the dredge to the shore. Three accidents occurred to men oiling or working about the top tumbler and the main spur-gearing while the machinery was in motion.

Accidents on Dredges.

Fatal Accident.

16/10/1900.—William B. Morgan, one of the crew of the Central Electric dredge, Cromwell, was upset from a boat while paying out a line being run from the dredge to the shore. There was neither bow-post nor light chain-stopper at the bows of the boat, and deceased was paying out the line hand over hand when a bight of the rope fouled his foot and he was dragged overboard. There was no life-buoy, light-line, or boat-hook in the boat, and the men did not wear life-belts, all of which conditions are required by the regulations. I reported specially on this accident on the 25th October, 1900. The dredge-master, J. Ledingham, was subsequently prosecuted for breach of Regulation 83, in that the boat was not properly equipped. The case was dismissed on the ground that the plaintiff had not proved service of notice in regard to "swift-flowing rivers" after the dredge had started work. As a matter of fact, the notice was served ten days prior to the dredge starting work. This difficulty is now overcome by the aid of the local police officers, who serve the final notices (as forwarded by me) when the dredge has started work.

Non-fatal Accidents.

13/4/1900.—Rolling Stone dredge, Cardrona: Philip Duffy, winchman, had his arm broken by handle of winch striking him.

20/4/1900.—Rolling Stone dredge, Cardrona: J. Robinson, dredge-master, had his arm caught and crushed between pinion and spur-wheel, through his foot slipping while oiling or examining friction-strap and inner bearing of the top tumbler-shaft. Amputation at the shoulder was necessary, and this was performed at Arrow Hospital.

26/4/1900.—Rolling Stone dredge, Cardrona: William Baird, winchman, received a blow on the face by the winch-handle reversing through the dredge surging while he was lifting the "pawl." The accident, not being of a serious nature, did not cause him to stop work.

17/5/1900.—Rolling Stone dredge, Cardrona: J. von Haast, the newly appointed dredge-master, received a nasty blow on the back of his hand, caused by the winch-handle reversing suddenly owing to the surging of the dredge.

18/12/1900.—Waipori Consolidated dredge, Waipori: Alexander Davidson, winchman, was lighting up the dredge in the morning, preparatory to starting work, when he tripped over a stern-line fair-lead on the deck, and, falling, fractured right arm.

List of Dredges Building, Working, under Removal, and Standing.

The following is a list of the dredges in the Southern Mining District, and the locality where the dredge is situated:—

Dredges Working—Otago.

On the Clutha River.—Below Beaumont: Paul's Beach. At Miller's Flat: Golden Run, Pringle and party, Golden Gate, Otago, Golden Treasure, Miller's Flat Electric, Majestic. At Ettrick: Golden Bed. At Moa Flat: Moa Flat. At Dumbarton (below Roxburgh): Gold Queen. In the Coal Creek—Alexandra Gorge: Golden Falls (current-wheel). Near Bald Hill Flat: Fourteen-mile (electric). At Alexandra: Sailor's Bend, Manuherikia, Moa (Clyde Gold-dredging Company), Molyneux Hydraulic, Golden Beach, Eureka, Golden Point, Earnscleugh No. 1, Earnscleugh No. 2, Ngapara, Enterprise, Chicago, Perseverance, Glasgow (Sandy Point Gold-dredging

Company). At Clyde: New Alexandra, Matau, Unity, Vincent, Vincent Extended. In Clyde-Cromwell Gorge: Kelly and Casey. At Cromwell: Alpine Consols, Alpine No. 2, Hartley and Riley, Central Electric, Junction-Electric No. 2.

On the Upper Clutha River.—At Lowburn: Maori. At Lindis: Pioneer Eureka.

On the Kawarau River.—At Cromwell: Electric Extended, Richards Beach, Cromwell, Lady Ranfurly (late Electric No. 3), Magnetic. At Kawarau Gorge: Second Magnetic, Upper Magnetic, Meg and Annie. At Gibbston: Merrimac, Galvanic, Metallic, Eclipse. Above Kawarau Bridge: Arrow Junction.

On the Shotover River.—At Arthur's Point Bridge: Arthur's Point.

On the Dart River.—Dart River (twenty-five miles above head of Lake Wakatipu).

In the Cardrona Valley.—Tacon's Cardrona, Cardrona No. 1, White Star.

On the Nevis River.—Success, Carrick, Nevis, Ngapara No. 2, Ngapara No. 3.

At Bannockburn.—Bannockburn Creek, Shepherd's Creek.

On the Manuherikia River.—Golden Link, Manorburn, Morning Star, Olrig, Chatto Creek.

At Evans Flat.—Evans Flat.

At Tuapeka Flat.—Lawrence, Tuapeka, Gabriel (late Tuapeka Flat).

At Wetherstones.—Golden Rise.

On the Waipori River.—At Waipori: Jutland Flat, Upper Waipori, Waipori Consolidated, Success, Perseverance (McNeil and party), Empire No. 1, Golden Shore, Empire No. 2, Waipori King (late Waipori Gold Lead).

On the Verterburn.—Enfield.

At Waitahuna.—Imperial, Havelock, McCormac, Manuka (late Adams Flat).

At Glenore.—Gold Bank, Stirling.

On the Kyeburn.—At Upper Kyeburn: Naumai.

On the Shag River.—At Inch Valley: Inch Valley, Inchholme.

On the Maerewhenua River.—Maerewhenua (late Macrae's Flat). At Livingstone: Premier, No. 1.

At Matakanui.—Blue Duck.

At Bald Hill Flat.—Bald Hill Flat Freehold.

At Kelso.—Ardmore.

Dredges Working—Southland.

At Waikaka.—Perry's Pioneer, Record, Ibbotson's, Glen-iti, Paterson's Freehold, Waikaka United, Little Waikaka (Brownlee and party), Waikaka Forks, Waikaka Queen, Premier Waikaka, Globe (late Victoria), Lillieslief (late Woolshed No. 2).

At Waikaia.—Dome Creek.

At Chatton.—Gold Creek.

At Waimumu.—Waimumu Extended, Waimumu Central, Waimumu Queen, Waimumu.

At Charlton.—Lady Charlton, Charlton Creek, Central Charlton (late Ophir).

On the Mataura River.—At Otama: Otama (late Enterprise Gully). At Gore: Central Mataura (prospecting dredge), Central Mataura No. 2.

At Nokomai.—Milestone.

At Waiau River.—Belmont.

Dredges Building—Otago.

On the Clutha River.—At Tuapeka Mouth: Scottish Chief, Lioness. Below Beaumont Bridge: Golden Reward, Golden Gravel. Above Beaumont Bridge: Champion, Golden Mile. Below Island Block: British Lion. Near Island Block: Golden Glen, Britannia, Golden Horseshoe. At Island Block: Gunton's Beach. Above Island Block: Ruby. At Ettrick: Diggers' Pride. At Moa Flat: Ettrick, Excelsior, Golden Chain, Gibb's Beach. At Dumbarton (below Roxburgh): Gold King. Near Roxburgh: Main Lead Hercules, Endeavour. At Roxburgh: Roxburgh Jubilee. Above Roxburgh: Teviot. At Coal Creek Flat: Coal Creek Flat. In the Coal Creek—Alexandra Gorge: Long Valley, Gold Deposit, Golden Elbow, Golden Molyneux (electric), Sixteen-mile, Extended Fourteen-mile, Golden Ripple, Golden River, River Molyneux, Davis Bend, Bendigo, First Chance. At Alexandra: Alexandra Lead. Above Alexandra: Fraser Flat, Earnscleugh No. 3 (electric), Perseverance No. 2, Dunstan Lead. In the Clyde-Cromwell Gorge: Cairnmuir, Old Dunstan, Dunstan Pioneer, Leaning Rock, Monte Christo, Boundary Creek, Halfway House, Great Central.

On the Upper Clutha River.—Above Cromwell: Royal Maori, Rise and Shine. At Luggate: Golden Standard, Vulcan, Below Albert Town: Upper Clutha, Prince Albert.

On the Kawarau River.—Kawarau Gorge: Voltaic, Gold Chair, Gentle Annie, Grand Junction, Annie Queen, Kawarau Consolidated. Gibbston: Gibbston, Waiora, Kawarau Bridge. Above Kawarau Bridge: Morven Ferry (late Galtee More pontoons), United Morven, Kia-Ora, Gold Vein, Horseshoe Bend.

On the Shotover River.—Above Arthur's Point Bridge: Moke Creek.

In the Cardrona Valley.—Cardrona Valley, Willoughby Cardrona, Oceanic (steam), Lady Cardrona, Robertson's Cardrona.

On the Nevis River.—Remarkables (late Golden Spec).

At Bannockburn.—Smith's Creek and Bannockburn Deep Lead.

At Tuapeka Flat.—Reliance.

At Wetherstones.—Happy Valley.

On the Verterburn.—Lower Enfield, Big Flat.

At Waitahuna.—Waitahuna Gully.

On the Shag River.—At Inch Valley: Inchdale, Dunback

At Serpentine.—Pile-up.

At Bald Hill Flat.—Last Chance.

Dredges Building—Southland.

At Waikaka.—Waikaka United No. 2, Paterson's Freehold No. 2, Celtic, Sheddon's Freehold, Waikaka, Waikaka Junction.

On the Mataura River.—At Gore: Graham's (private).

At Waimumu.—Victoria Waimumu, Waimumu Treasure, Waimumu Imperial (late Dunedin), Royal Waimumu, Spec Gully (late of Spec Gully).

At Charlton.—MacCharlton, Charlton Valley.

At Waikaia—Garvey Burn, Day Dawn, Switzers.

Dredges under Removal.

Bengerburn: Moa Flat to Greenvale. Klondike: Matakanui to West Coast. Woolshed: Glenore to Waipori. Eureka: Mataura to Mataura Island.

Dredges Standing.

Alpine, Cromwell (sunk); Springvale, Manuherikia River; Nil Desperandum, Manuherikia River, at Chatto Creek; Junction-Electric No. 1, Cromwell, on Kawarau River; Shotover, at Lower Shotover; Rolling Stone, at Cardrona; First Taieri, Taieri River; Nugget, Waikaia; Great Western, Colac Bay; Adams's, at Tuapeka Mouth.

Summary of Dredges in Southern Mining District.

	31st Mar., 1901.	31st Mar., 1900.
Working—		
In Otago	99	67
In Southland	26	12
Total	125	79
Building—		
In Otago	84	
In Southland	17	
Total	101	
Dredges standing	10	
Dredges undergoing removal in Otago	3	
Dredges undergoing removal to West Coast	1	
Total	14	

Total for Otago and Southland, 240. Increase of working dredges, 46.

A large number of the dredges building will soon be completed and at work. The above returns are made up to the 31st March, 1901.

OTHER MINERALS.

Scheelite.

The demand for scheelite, and the known occurrence of the mineral, associated with gold-bearing quartz, in the Mount Highlay line of reef at Macrae's, caused some attention to be paid to hitherto untried outcrops.

The success of Messrs. W. and G. Donaldson at Golden Point, Macrae's, stimulated others to take up areas supposed to be scheelite-bearing. Messrs. Phelan and party at Macrae's and Dunback Hill, and Cockerill and party at Mount Highlay, have prospected several areas, but the results have not been made public.

Macrae's.—The reef (Mount Highlay line) to east and near the main road has been exposed at several places where scheelite is showing in the stone.

Dunback Hill.—The outcrop of a small reef 28 in. to 30 in. in thickness can be traced for half a mile or more on the surface. At one point the reef is exposed for about 70 ft. on the line of strike, and can be seen dipping to the north about 1 in 10. Some twenty trial trenches and openings have been made, and the stone can been seen carrying scheelite. Assays are said to have proved the stone to carry sufficient gold to pay working expenses.

Antimony.

Alexandra.—Mr. Blair (from the Thames) has done some prospecting on the west bank of the Clutha River, a few hundred yards above the traffic bridge, where a few tons of antimony were taken out some years ago. The old shaft has been cleaned out and a few tons brought to grass, and sent to Melbourne for smelting, with a view to ascertaining the market value of the ore. The line of reef is being followed up, and has been traced for about 400 yards on the surface. Being in the preliminary stage, no estimate can as yet be formed of the depth or body of the ore, but indications are favourable. Owing to the distance from the railways, the cost of landing the ore at Dunedin, the nearest seaport town, will be considerable.

[Extract from the *New Zealand Mining and Engineering Journal*, Thursday, 14th March, 1901.]

"Some samples of antimony-ore taken from the shaft just put down at the Alexandra Antimony Syndicate's mine were sent for analysis to the Otago and Thames School of Mines, and also to Dr. Maclaurin, Government Analyst. The results were (says the *Alexandra Herald*) in every case very satisfactory. The Government Analyst reported that the ore submitted to him contained 73·5 sulphide of antimony, equal to 52·8 per cent. of metallic antimony. The Thames School of Mines reported that the sample contained 69·7 antimony-sulphide, 5·2 iron-pyrites, and

25·1 silica; or equivalent to 50 per cent. of metallic antimony. The Director, in his report, added that 'this class of ore was worth following up.' The Otago School of Mines reported that the sample of ore sent there contained 65 per cent. of metallic antimony."

CINNABAR.

Waitahuna Heights.—The syndicate formed to open up this lode are driving a low-level tunnel, which should prove the permanence or otherwise of the ore at depth.

COPPER.

Moke Creek, Queenstown.—Some prospecting and opening-up has been done on the outcrop of the lode referred to in Hutton and Ulrich's "Geology of Otago."

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

The Under-Secretary, Mines Department, Wellington.

WARDENS' REPORTS.

Mr. Warden HUTCHISON to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Auckland, 5th June, 1901.

I have the honour to report that there has been no gold-mining work upon the Puhipuhi Goldfield during the past year. The last special claims held upon the field were abandoned at the end of last year. There are still upon the books two machine-site and four residence-site licenses. The former, held in connection with the special claims last abandoned, will expire in about four months' time, with no probability of renewal; the latter are probably held by gum-diggers. The only business has been the grant of two prospecting licenses for the search for cinnabar, and these have not yet been taken out. The Puhipuhi Goldfield, which for several years has, as an area for gold-mining, been moribund, may now be pronounced to be extinct.

I have, &c.,
T. HUTCHISON, Warden.

The Under-Secretary Mines Department, Wellington.

Mr. Warden BUSH to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Thames, 31st March, 1901.

I have the honour to furnish the usual annual report upon the mining industry within the Hauraki Mining District.

REVIEW OF THE YEAR.

The gold yield for the year ending 31st December, 1900, amounts to no less than £635,033 19s. 3d. Compared with the output for 1899, this shows a decrease of £6,116 15s. 2d., and with 1898 an increase of £103,449 4s. 9d. The result of the year's operations is very satisfactory when it is considered that the number of companies contributing towards the total yield is less than was the case in 1899. Some notable absentees from the list of the past year's bullion-producers are the Woodstock Gold-mining Company, the Waihi-Silverton Gold-mining Company, and the Komata Reefs Gold-mining Company. The Waihi-Silverton now forms part of the Waihi-Union Company's property. These mines contributed between them, in 1899, a total of £40,245, whilst there were also in the former period several other companies in the Thames and Coromandel portions of the field which were assisting to swell the output, and which are now either shut down or engaged in development-work only.

The increase in the gold produced in 1900 as compared with that of 1896 is £405,991. The total for 1900 is made up as follows: Ohinemuri, £491,720 6s. 8d.; Thames, £81,713 2s. 11d.; Coromandel, £61,600 9s. 8d. Compared with the totals of 1899, these figures show an increase from the Thames of £7,798 0s. 11d., and from Coromandel of £5,295 18s. 10d. Ohinemuri's total shows an increase of £19,210 16s. 11d., which is more than accounted for by the absence from its list of contributors of the companies mentioned above.

Mining in the upper or Ohinemuri County portion of the district progresses steadily, and, though there are no new discoveries to chronicle, there is an air of permanency accompanying the operations being conducted by what may be termed the standard mines, showing that the industry is advancing gradually, as the returns for three weeks of the month of March, amounting to £41,468, show.

Several areas have recently been taken up, ground that was formerly held under license and abandoned or forfeited. This small rush may be attributed to the indications discovered in the mines which are being worked at Waihi.

WAIHI.

The *Waihi Company's Mine*, the premier mine of the colony, is steadily increasing its output, the last return exceeding £31,000. Over a thousand men are employed on various works in connection with the operations of this mine. The reduction-works now consist of a 200-head stamper battery and plant at Waikino, and the old battery of ninety-head of stampers at Waihi. The ore for the Waikino battery is conveyed a distance of five miles from the mines to the battery in trucks drawn by locomotives. The Union Waihi Company are crushing ore, but the returns are small and fluctuating. For instance, the return in April from 1,610 tons was £2,661, while in March 1,750 tons only produced £2,329. In the latter instance 140 tons more ore was treated, but the gold was less by £332.

The *Waihi Grand Junction Company* have experienced great difficulty in working the lode in the north drive, owing to the very heavy flow of water. In consequence of this operations have been temporarily suspended. The southern crosscut to intersect the Waihi Company's Empire lode is being advanced, and the work of sinking the main shaft a still further depth of 250 ft. is now in hand. The shaft in the west section is being sunk under very favourable conditions. The shaft has now attained a depth of over 400 ft., and when another 100 ft. has been added it is intended to run out crosscuts. The owners of this mine have spent over £50,000 in its development, but, owing to having so much water to contend with, have received no remuneration for their pluck and perseverance, though good reports as to early success are to hand.

Waihi Extended.—This company has held this ground for several years, but owing to want of means no great development-work has been done. For the past twelve months, however, greater activity has been shown, and a shaft sunk to the depth of 280 ft. Twelve men are now employed.

The *Waihi Gladstone* is another mine in which nothing so far of a remunerative nature has been discovered. The company, however, propose exploiting the lower levels by sinking a shaft, the preparatory work for which is well in hand.

The *Haines Morrin*, the *Waihi South*, and the *Waihi Consolidated Companies* are at a standstill. So far neither has met with any success; want of pumping machinery seems to be one of their chief stumbling-blocks.

At Owharoa, the *Ohinemuri Syndicate* have discontinued sinking the shaft; some of their properties are protected. Work, however, is being carried on in the Elliott tunnel. It is a very long time since this company secured anything payable.

The *Rising Sun Gold-mining Companys' Mine* has been pluckily held and worked with a small number of men, with encouraging results. The operations have excited considerable interest owing to recent developments. Three reefs have been found in the upper workings of the mine, two of which have been cut in the lower levels. The low level is about 1,600 ft. in length. The first assay gave the value as £12 per ton, of which £8 represented the gold contents. The reefs discovered were cut about the centre of this company's area of 60 acres. Very little, however, can be done to develop these lodes until better ventilation can be secured; every effort is being made to secure this.

Waitekauri.

The operations of the *Waitekauri Gold-mining Company*, which up to the present, has produced £309,768 17s. worth of bullion, are too well known to inquire particularising, suffice it to say that development-works on a large scale are proceeding, and every effort is being made to get new blocks opened up.

The *Waitekauri Cross* is at present under protection, endeavouring to raise further capital.

The *Waitekauri Extended* is producing gold, but the ore is somewhat poor in value. There is, however, a slight improvement in this respect, which has had the result of further capital being introduced for development purposes. It is to be hoped this investment will meet with the reward it deserves.

The *New Zealand Jubilee (Limited)* and *Young New Zealand Gold-mining Companies* are also operating in this locality. In both mines works of a prospecting nature are being carried on. The change of management has put more vigour into operations of these mines.

Karangahake.

New Zealand Crown Mines Company.—This company's property, with its sixty-head stamper battery, is producing satisfactory returns of gold each month. The last return was over £6,600. The total yield of bullion from this mine is near £360,000, and there is every prospect of its being one of our permanent gold-producers. Recently this company has acquired a considerable area of ground on the opposite bank of the Ohinemuri River, which it intends thoroughly prospecting. For this purpose a long tunnel is to be driven, the length of which will probably be one mile. Men were put on to this work as soon as the ground was secured. The ground in question had been held by several persons at different times for several years, but had been either abandoned or forfeited from time to time. None of the former holders were able to discover anything to make it worth their while to man and work this ground. I shall be pleased to hear of this venture turning out a success, as it will mean maintaining a considerable population in and around this locality. This company is erecting an engine to supplement its water-power for battery purposes, as it finds it has not enough power from the water-races during the dry season to keep all the stampers at work. A new and powerful pump has recently been erected in the mine, and there is nothing now to prevent this company from sinking to any reasonable depth. The main shaft is down about 300 ft. below the Ohinemuri and Waitawheta Rivers. This company has spent about £150,000 in connection with its mining operations in this mine, and employs some 250 men. Circumstances being favourable, I shall expect to see this mine one of the permanent supports of our gold industry.

The *Talisman Consolidated Gold-mining Company*, which is not only carrying on extensive development-works, but is also erecting a new and larger crushing plant, has not made any gold returns for the past few months. It is to be hoped, with a more powerful battery at its command, it will very quickly make up in larger returns of bullion what it has been prevented in putting out while the plant was under construction. Opinions are divided as to whether this company will increase its future returns in proportion to the increased area acquired when amalgamating with the Talisman Extended. It is to be hoped this property may prove one of the permanent gold-producers of the district.

Woodstock.—For the past year this mine has produced no gold, its battery being shut down; but the company has been pushing on as expeditiously as possible the various works connected

with the new development scheme. The extension of the water-race is about completed, and the sinking of the main shaft from below No. 5 level is being carried on; also other development-works on various lodes.

The *Imperial Gold-mining Company* is still endeavouring to secure ore of a payable quality, and it is said there is a prospect of this being obtained. A considerable quantity of good work has been done on this property, but the owners have received nothing up to the present for their labour and capital.

The *Waverley* is being worked with about eight men in conjunction with the Comstock, but the work has not proceeded far enough to enable one to express an opinion as to whether the expectations held with regard to the quality of the reef are likely to be realised.

There are a few other claims in this part of the district in existence, but these are either under protection or being prospected with a very small number of men. There is one small river claim on the Ohinemuri, taken up with a view to treating the tailings in the river which have escaped from the various batteries. Whether this will turn out a successful venture remains to be seen. It is doubtful if the results will prove remunerative, as only a very small percentage of gold is now lost in the tailings, so small that the tailings are not worth saving. The only chance of obtaining anything lies in the deposits of the tailings that may have escaped prior to the cyanide treatment being adopted, but in those days only small quantities of ore were treated as compared to what is now going through the reduction-works.

The *Komata Reefs Company* have again commenced crushing, and the initial return was £1,560 of gold from 980 tons of ore. This is not up to what was expected; probably there will be an improvement.

The *Hikutaia Syndicate* properties have only been partially worked during the year. The test plant erected has not so far satisfied the owners that a large expenditure of capital is warranted on their property. The future is under consideration, and it is stated a considerable capital will be provided to thoroughly develop these properties.

Maratoto Gold-mining Company.—This company's property has not so far proved remunerative, although when the battery was erected it was anticipated four returns would be made. This company has been reconstructed with a view to pushing on its development.

The *Alpha* is another mine which so far has proved disappointing. The battery erected is doing nothing.

Thames.

The Thames-Hauraki Company, which was taken over by the Standard Exploration Company some twelve months ago, had to apply to the Warden's Court for protection; and, as the other companies working had applied to the Drainage Board to work at lesser depth than 500 ft., there was no reason for refusing this company the concession asked for, to enable the arrangements in progress with the Standard Company being completed. Some hitch, however, arose in London owing to another company there with which the Standard was connected finding itself in difficulties, which evidently prevented the assignment to the Standard being registered; and the Thames-Hauraki found itself still holding the license without sufficient capital to continue sinking and pumping, the result being the protection referred to. The drainage assessment seems unsatisfactory.

In a recent appeal from the assessment to the Warden's Court, it appeared, though the Drainage Board had existed since January, 1886, it had not yet arrived at any fixed principle for making the assessment, even with the assistance of assessors. It was deposed that the assessment was made by mutual consent. In the event of a company objecting to the assessment, the Board was not in a position to explain how it came to assess that particular company in the amount it had. Until the Board devises some practicable method of making this assessment it is likely to find itself in this peculiar position. The principle of allowing companies to intimate to the Board the depth each desires to work makes the task of assessment much more difficult than would be the case if the Board fixed the depth at the maximum which its pump can drain. Something of the kind is necessary to protect mine owners who seek to sink deeper from becoming prospectors for others who desire to lie by and reap the benefit of the discoveries without contributing towards the same.

New Moanataiari Gold-mining Company (Limited).—This company's ground has been mostly manned by tributers, only an average of nine wages-men being employed. In the Cambria section the reef was driven on up to its junction with the Red Queen leader, and a small block of ground stoped. Payable ore was here met with and 70 tons taken out, which on treatment yielded £203, but the ore gradually decreasing in value work was stopped. In the Reuben Pass section considerable work was done in driving a crosscut from the Reuben Parr reef to the hanging-wall of the Golden Age reef, but nothing payable was found. The Point Russell level has been extended for 145 ft. through a good class of country, but nothing has been discovered. The tributers (fifty-six) have done fairly well. I understand that an amalgamation of this company, Kuranui-Caledonian, and May Queen has been effected.

Kuranui-Caledonian Gold-mining Company (Limited).—Fifty tributers have been employed in this mine on the sliding-scale system. These men have confined themselves to the small reefs and leaders, and many of them have done well. There are several large reefs in the mine, but the ore is of too low a grade to pay tributers, so nothing has been done on them. The men engaged seem well satisfied with the system on which the tributes are let.

Waiotahi Gold-mining Company (Limited).—This mine has been paying dividends regularly for the last twenty-three years, during which time £37,800 has been divided. The mine, which is still looking well, has been carefully and systematically worked under the management of Mr. J. E. Smith. It is a great pity that we have not a few more such mines in the district.

Nonpareil.—Tributers have been working this mine with a fair amount of success. Operations have been confined to the numerous small reefs and leaders which exist in the ground. About 350 tons of ore was taken out and treated for a return of about £1,200.

Fame and Fortune.—Considerable work has been done in this mine during the past year, but so far no payable run of ore has been unearthed, although gold is often seen in the quartz when breaking down. For some time forty men were employed, but the number has been reduced considerably lately owing to the returns not being payable.

Victoria Gold-mining Company (No Liability).—Very little work has been done in this mine. A few tributers have been engaged, but with very little success. The ground above the 500 ft. level is almost all worked out, and until pumping operations below that level are resumed very little good can come of employing a large number of men. Some time ago the Favourite Foreshore Special Claim was taken over, and it is the intention of the company to test the ground by boring. Should payable ore be found in the ground, I have no doubt other parts of the foreshore would be taken up. There seems to be no reason why the reefs found above high-water mark should not continue under the sea.

May Queen Hauraki (Limited).—A large number of men have been employed in this mine—sixty-five on wages, and thirty-five tributers. The principal operations have been in No. 7 level, and those above in the Saxon and May Queen sections. The company had intended sinking their shaft to a depth of 1,000 ft., but the stopping of the pumping in the Thames-Hauraki shaft prevented them going on. Several of the tributers have had good returns, especially one party in the Cardigan section.

Thames-Hauraki Goldfields (Limited).—This company had sixty-six men employed for the greater part of the year in continuing the sinking of the main shaft and working the pumps. The shaft was sunk a further depth of 78 ft., making the total depth 828 ft. In the latter part of last year a dispute arose between the company and the May Queen Hauraki over the payment of its contribution to the cost of pumping. The May Queen Company contended that the Thames-Hauraki were bound to continue sinking until they reached a depth of 1,000 ft., and that it was on that understanding that the amount of contribution was fixed; but the matter was arranged out of Court. Shortly after this the Thames-Hauraki ran out of funds, and on the 31st December last ceased work, and applied for and were granted six months' protection, pending the reconstruction of the Standard Company, who had become the owners of the company since my last report, but had not been registered as such. It is to be hoped that money will be found to carry on the sinking of this very important shaft to a depth of at least 1,000 ft., and thus test the lower levels.

In the Karaka Creek locality the *May Queen Extended*, *Gloucester*, *Karaka (Limited)*, and *Thames-Talisman* have all been working with a limited number of men, but there is nothing special to report.

In the Una Hill district the *Occidental*, *Thames*, and *Adelaide* have all been worked, but without any payable reef being discovered.

The *Fortuna Hauraki* was under protection for some time, but lately some tributers have been employed. Efforts are being made at Home to raise more capital to further prospect the mine by sinking the old Consols shaft. The Hill has been fairly well prospected, but no payable ore was found.

Ethel Reefs Gold-mining Company (Limited).—This company has been actively engaged developing its mine until lately, but, as the reefs found were not large enough to work on a big scale, and the returns not sufficient to defray working-expenses, the company let the ground on tribute.

Omahu.

The *Sheet Anchor Claim* has been worked with from two to four men during the year chiefly in prospecting. The reef is a fairly large one, but does not seem to be in solid country. It is very much broken up, but rich ore has been obtained in places. The small battery which was erected has not been a success, the gold being too fine to be saved by amalgamation. A small parcel of 2¼ tons treated at the Thames School of Mines gave a return of £72. The owners, who are working miners, are treating with the Bewick-Moreing Syndicate for capital to further prospect and develop the property.

Klondike.—The claim has been worked by two men for the greater part of the year, and a fair amount of prospecting done.

Neavesville.

Golden Belt.—A syndicate of Auckland gentlemen purchased this mine and the machinery, which were sold by auction under warrant of distress. I understand that the flotation of a new company is in the hands of a well-known gentleman now in London, and that the prospects of obtaining capital to thoroughly test the property are very good. An additional area of ground has been marked out and applied for adjoining this claim by the owners. The low level has been extended 150 ft., with the object of cutting the reef which was found at the surface. Some years ago a great deal of work was done on this ground, and some very good returns obtained, but the old company ceased work for want of funds.

Several claims have been applied for and granted lately, but not much work has yet been done.

The *Advance Claim* found very good ore at the surface, and the owners are now engaged putting in a low level for the purpose of testing the ground.

Tairua.

New Zealand Broken Hills Gold-mining Company (Limited).—This company has been engaged in prospecting and opening up its ground, but the returns have not been payable. The battery was completed, and a large quantity of ore treated by the amalgamation process, but the results were

not satisfactory. A cyanide plant was then erected, but it was found that the large reef was of too low a grade to pay, and the battery shut down. Since then a good deal of prospecting has been done on the small leaders in the west side of the hill and in No. 3 level. The Blucher reef was intersected and found to cross the Severs reef at almost right angles. This reef gives highly encouraging assays. The company have had twenty men employed.

Pakirarahi.

Chelmsford Gold-mining Company (Limited).—This company's mine, situated on Kauri Timber Company's freehold, has been well prospected, with very encouraging results. The main reef, which averages 3 ft., has been driven on for 60 ft., and 60 tons of quartz saved. No. 2 reef has been opened up for a distance of 80 ft., and 20 tons saved. Gold has been freely seen in the stone while breaking out, so that it may be assumed that the ore is highly payable. A ten-stamp battery with complete cyanide plant is approaching completion, and crushing should soon be commenced.

Whangamata.

Whangamata Gold Corporation (Limited).—The payable run of ore having been worked out in October last, the battery was shut down pending the results of the development scheme now being carried out. A shaft is being sunk from the No. 3 level, which it is intended to carry down to 100 ft., thus making a total of 400 ft. below the crown of the hill. It is then intended to open out. A good deal of exploring-work has been done in various parts of the mine, but nothing payable has been found.

Mananu Gold-mining Company (Limited).—This mine has been steadily worked with fifty-two men. The results have been very satisfactory, 1,002 tons of ore having been treated for a return of £2,605 12s. 4d. The principal work has been on the Nos. 1 and 2 reefs, and the levels between. Good payable blocks of ground have been opened up. The reef varies from 4 in. to 12 ft. in thickness, and is very irregular. The company intend erecting ten stamps additional, and, encouraged by the prospects, to more vigorously develop their property.

Te Aroha.

Mining in this district has been confined to the claims situated at Waiorongomai, the others having been either abandoned or not worked.

At Waiorongomai the claims owned by Mr. E. H. Hardy, which he personally supervises, have been most systematically worked. During the year an average of twenty men have been employed, and wages to the amount of £175 a month have been paid. The work has been spread over various undertakings. The water-race has been flumed and deepened and put in first-class order from end to end. Large additions have been made to the battery, both outside and in. The heavy timbers inside the battery have been replaced by new. The county tramway, having been continuously employed carrying quartz to the mine, has earned sufficient to maintain it in good order.

At the Premier Mine the bulk of the work has been done. A gold-bearing stope has been carried along horizontally 250 ft., and 153 ft. in height, which has produced payable returns, the width of the reef varying from 3 ft. to 9 ft. A level 85 ft. below these workings has intersected the reef, and payable ore has been met with. A rise and winze are being made to connect these levels. Water has been led about 500 ft. from a waterfall adjoining the mine to provide ventilation for the lower levels.

Prospecting has been done in the Colonist and New Find portions of the property, with gratifying results. These in due time will be systematically worked as soon as the battery is sufficiently enlarged to crush the ore.

A portion of ground has been worked, called the Big Blow Claim, at the end of the big quartz outcrop above the plain at Waiorongomai. A face of payable quartz has been excavated as an open-cut, being 60 ft. long by 20 ft. high and 4 ft. thick, in excellent ore which, assayed all through, proves it to be payable. 200 tons have been extracted preparatory to crushing. The object in carrying on the works at the Big Blow is to provide a supply of quartz near the battery in case of any stoppage of the tramway connecting the more distant mines.

The total amount of ore crushed for the year amounted to 1,641 tons, valued at £3,419 3s. 9d., averaging £2 1s. 6d. per ton. Everything taken out of the mine has been crushed to produce the results stated, the object of the proprietor being to ascertain the bulk value of the mine as it stands.

Considerable improvements are contemplated for the ensuing year, the most important being the erection of a new ten-stamp battery, with grinding- and amalgam-pans, &c. This plant is now on the ground awaiting erection. The making of an aerial tramway to the Big Blow Claim will be proceeded with, 5,000 ft. of stationary wire rope and 2,000 ft. of tail-rope having already been purchased.

The battery has been taxed to its utmost day and night. On account of the very fine grinding required to insure the best extraction of the fine gold, the crushing-power of the stampers has had to be restricted within the limits of the pans. As soon as the new ten stamps are erected the number of men employed will be increased.

The process adopted for the extraction of bullion at the battery is as follows: The gold is fine, interspersed with fine iron-pyrites, copper-pyrites, and silver-sulphide. Cyanide process is not suitable for the extraction of this gold, because of the presence of copper, which interferes with zinc precipitation of the gold. The use of carbon for that purpose, however, has not been tried on a practical scale. The quantity of concentrates will be about 1 per cent. The ore is crushed in a Blake-Marsden rock-breaker into hoppers holding 150 tons; it then passes through two Challenge ore-feeders to a battery of ten stamps, weighing 850 lb. each; thence the crushed

material passes through brass screens, 40 mesh, on to two electro-plated copper plates of 30 square feet each. From the plates it passes continuously through grinding- and amalgam-pans fitted with Hardy's patent amalgam-saving device, the overflow passing over a 6 ft. Union vanner and a Wilfley table. A separation of the tailings is made by spitzkasten into sluices and sands.

The slimes average 12s. 9d. per ton of slimes, the sands being almost valueless; the concentrates vary from £9 to £12 per ton, the last assay showing gold 2 oz., silver 40 oz.; value, £12 3s. per ton. Half the value of the concentrates is extracted by working them in berdans with lime, the residue passing outside the battery to settling-pits, from which it is removed and dried ready for shipment to the smelter.

A circular-saw and workshop have been erected.

There is a complete cyanide plant embracing two 22 ft. vats, six mixing- and sump-vats, steel vacuum cylinder 12 ft. by 6 ft., zinc precipitation-boxes, centrifugal and air pumps. The motive-power is supplied by 240 ft. head of water through a 20 in. diameter pipe to three Pelton wheels of 2 ft., 3 ft., and 6 ft. diameter, working vanners, rock-breaker, and stampers respectively. A second Blake rock-breaker, crushing to ½ in. mesh, a Lockwood-Mackay mill, and Pelton wheel have been fitted up, so that the proprietor can, if necessary, treat from 6 to 8 tons of ore daily by cyanide or otherwise, independently of the main battery.

Coromandel.

Mining in this district is still very quiet, and there is little to report. During the past year many mines have permanently closed down, a few are at present protected, and some working with a reduced number of men. There is still, however, a considerable number engaged actively in crushing and developing, while prospecting is as vigorous as ever.

Kauri Block.

The *Hauraki Mine* is still a gold-producer, but has lately reduced the number of its workmen.

The *Hauraki Main Lodes Properties* have done very little, but there is a good prospect of operations again commencing soon.

Bunker's Hill Company have continued working with varying success, and are hopeful of obtaining a payable reef.

Welcome Find and *Suez Extended Claims* have amalgamated, being now known as the Hauraki Freeholds Gold-mining Company's property. Much development-work has been done, but as yet without success, though good country is being penetrated.

Hauraki No. 2 is still being worked.

Freehold Land.

Operations have been resumed in the property of the *Kathleen Crown Gold-mining Company*, development-work being pushed on vigorously. Ore has lately been obtained freely showing gold.

Driving Creek.

The *Kapanga Mine* has discontinued active operations, but everything is being kept in good working-order, so that there is a probability of this old mine again becoming a gold-producer.

The *Royal Oak of Hauraki Gold-mining Company* have steadily continued their development-works with a large body of men. They have also been producing very fair monthly returns of gold, and there is every prospect of success during the coming year.

The new *Four-in-hand Company* have also been consistent gold-producers during the year, and they have carried on a large amount of prospecting with good success.

The *Hauraki Mines, Limited* (late Hauraki Associated, Limited) are recommencing work, and it is hoped that this mine will again become a producer, as of old.

On the *West Tokatea Mine* a new three-head stamper battery has been erected, a first crushing of 10 tons of ore yielding a return of £130. Several payable reefs are now being prospected, and the outlook is a bright one.

Work is being continued on the *Harbour View Claim.*

Tiki.

The *Pukewhau* and *Progress Castle Rock* are being driven upon, gold showing in the stone.

Kennedy Bay.

A little work is being done on the *Harbour View.*

Matamataharakeke.

Macaronic and *Macaronic Extended Special Quartz Claims* have been taken up by Messrs. Barron and Cornish. The prospects are good, and there is a likelihood of this property being worked by a strong company.

Mahakirau.

In the *Nil Desperandum Mine* Messrs. Prescott and Davis have done good prospecting-work, with excellent results, gold showing freely.

The *Day Dawn* is still being worked.

Kuaotunu.

An amalgamation of the *Try Fluke*, *Try Fluke Extended*, and *Kapai-Vermont Claims* is under consideration, the whole to be taken up by a new syndicate, with the chief object of testing the lower levels. This will be of considerable interest to Kuaotunu, as the testing of these lower levels is very important.

The *Waitaia Gold-mining Company* are crushing and stoping, the battery producing regular results.

The *Handsworth* has a battery crushing by water-power for very fair returns.

The *Irene Special Quartz Claim* is being worked by a party of tributers, who are making payable crushings.

Kapowai Block.

On this part of the field much prospecting has been done, the results being very encouraging. A company has been formed, who, with the *Kapowai Gold-mining Company*, have almost completed a battery, while driving has been rapidly pushed forward. There is a strong hope of a good future for this new district.

OPITONUI.

On the *Kauri Freeholds* properties operations have been actively carried on. About a hundred and fifty men are employed, while the battery continues to make regular crushings with fair results. It is to be hoped the mine may meet with success, as this part of the field depends entirely upon it.

The public battery at Coromandel mentioned in my report of last year has now been completed. Already a large number of parcels of ore from all parts of the surrounding district have been treated. This battery is undoubtedly of great benefit to miners, who have hitherto had no means of fully testing the value of their reefs without going to considerable expense; the proof of the benefit being in the number who have taken advantage of it.

The School of Mines continues to do good work in the way of instruction.

I have, &c.,

The Under-Secretary, Mines Department, Wellington. R. S. BUSH, Warden.

Mr. Warden ROBERTS to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Tauranga, 11th April, 1901.

In compliance with the instructions contained in your letter of the 21st ultimo, I have the honour to attach the report asked for therein; also the forms forwarded therewith duly filled up.

During the past year very little has been done in mining owing to the unsettled state of the financial and mining market.

The *Te Puke Gold Reefs Company* have, however, resumed mining operations since the middle of February, and have put on a staff of men. The works are all being cleaned out and put in order pending the arrival of London and Australian experts, who are due to visit and inspect the property early in May. The old top level that had completely caved in has been reopened, and the reef penetrated to a distance of 45 ft. It is estimated that another 15 ft. or 20 ft. of driving will be necessitated before the foot-wall of the reef is reached, and it is here that the best gold has been found. The stone coming to hand is of a very promising kind. The low-level drive at the 300 ft. level is in a good state, and here the reef is 22 ft. through, and much more compact. A week or two ago another lode, supposed to be 40 ft. or 50 ft. through, about a quarter of a mile to the westward, and running parallel (*i.e.*, north and south) to the other lode, has been exposed all along a small creek owing to a landslip having cleared off the surface-soil. It is intended to prospect the new reef to find out its size and value, and if it is up to expectations it will be a very valuable find, and materially enchance the value of the property.

In the other claims the only work done has been prospecting-work in the *Otara Freehold* and the *Sisters Claim*, and in both these properties very encouraging results have been met with; and if the main claim at Te Puke is taken up and developed there is no doubt that attention will soon be paid to some of the outside properties.

Alluvial Find.—An experienced prospector followed up traces of loose gold between Te Puke and Rotorua till he located its source in an extensive bed of alluvial deposit that gives good results of rich, coarse gold. The deposit is in places over 10 ft. deep, and is composed of surface country, ironsand, and general detritus; the best gold is found where the deposit is consolidated and cemented together. Five prospecting licenses have been granted in the vicinity of the find, and the opinion is that the deposit is from the reef systems traversing the district and connected with the Te Puke reef system.

I have, &c.,

J. M. ROBERTS, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden ALLEN to be UNDER-SECRETARY for MINES, Wellington.

SIR,— Blenheim, 9th May, 1901.

I have the honour to forward you my annual report, which, of necessity, will be very short.

In the Wakamarina there is nothing special to report. With the exception of a few parties of alluvial miners, there appears to be very little work doing. The Yukon Company are about resuming work under new management. The Wakamarina Golden Point Dredging Company are placing a dredge on their claim, but they have not yet commenced working.

A number of claims have been applied for and granted for dredging in the north bank of Wairau district. The Omdurman Company are preparing to place a dredge on one of their claims. They will probably commence work in or about the month of June next. Messrs. Watty and party are placing a battery upon their quartz claim, hoping to start work in May. The Jubilee Company have been working for a short time, but I have not heard the result. No work has been done to

end of March to properly test the ground. Some of the experts who have paid short visits to the district speak in favourable terms of the north-bank country as a good reefing country. There is very little doubt that the country from Kaituna to Mount Patriarch, possibly to Tophouse, is auriferous, but, like other mining districts, we are at present overburdened with the syndicate formation.

I have, &c.,
The Under-Secretary, Mines Department, Wellington. J. Allen, Warden.

Mr. Warden Heaps to the Under-Secretary for Mines, Wellington.

Sir,— Nelson, 29th May, 1901.

I have the honour to forward herewith, duly filled up for the localities under my charge, the annual mining returns, and to report generally on the mining industries in my portion of the Karamea district.

Collingwood.

The signs of a revival of the mining industry, mentioned in my last report, continue in this locality, and are not confined to one class of mining only. Gold-mining is pursued by hydraulic sluicing as at Parapara and the Quartz Ranges; underground mining as most successfully carried on at the Golden Blocks Mine on the Taitapu Estate; and, although actual dredging for gold has not commenced, active steps are being taken for making an early start on the Aorere River and tributaries, and also on the Parapara Mud-flat and vicinity. Three dredges, it is stated, will be at work in a short time. Alluvial mining still attracts the independent individual and small parties of miners.

The confidence manifested by investors in this district does not appear to be the result of any sudden boom or excitement, but to have come about as the result of long and careful inquiry, inspection and prospecting, by practical men of sound mining and business knowledge. Over 800 acres were granted in special claims during the official year, and during the same period fourteen prospecting licenses were granted for an aggregate of 933 acres. Of the five registered and sometime established companies, the Golden Blocks (Taitapu) is pronouncedly successful, and, I am informed, has averaged 300 oz. per month; and the returns from the other mines are described as satisfactory, but actual results are not made public. For some time back suitable labour has been scarce on the field.

Coal-mining.

In addition to the 239 acres held and worked under coal-mining leases, 700 acres were granted during the first three months of the year, and applications are now in for 1,300 acres more. About thirty men are at present employed on this industry, but it is in the hands of syndicates having the command of both English and colonial capital, and, it would appear, with the disposition to operate actively.

Takaka.

During the year twenty applications for mining privileges have been applied for, eighteen granted, one refused, and one withdrawn.

At the Anatoki, Jackson's claim has not been worked for some time owing to the illness of the proprietor.

A syndicate of Takaka men has taken up a claim at Sheepy Flat, and has had men working, bringing up a tail-race from the river. The work is very difficult and slow owing to large boulders being met with which necessitates blasting. Continued floods have also interfered with the work, and it is rumoured that work will have to be stopped until next spring.

At the Bubu, Whelham has sold his freehold to a strong Wellington syndicate, who have already sent over a manager. Since his arrival two prospecting licenses for 100 acres each have been taken up, and a water-race which is to bring in fifty heads of water from the Anatoki River has been applied for to thoroughly prospect these areas.

Malone and party are still working on their claim at the Bubu trying to get on to solid ground. I am informed that at present they are getting only poor returns.

Patterson and Thompson are working on the left-hand branch of the Bubu, in the bed of the creek, for small returns.

None of the dredging claims granted on the Takaka and Anatoki Rivers are being worked, or seem likely to be. At the junction of the Takaka and Waitoi Rivers two men are working, who have to swag their supplies from Upper Takaka, a two-days journey. Men undertaking such hardships in a very rough country must, or ought to be, making good wages.

Motueka.

Five prospecting licenses on the Tadmor, Rolling, and Wangapeka Rivers have been granted, and at the Table-land, Mount Arthur, two water-races, two drainage areas, two tail-races, three ordinary alluvial claims, and one special claim for 30 acres have been granted.

The matter of proclaiming the Motueka River a sludge-channel is still in abeyance pending the report of the Rivers Commission. Meanwhile a number of applications for prospecting areas are hung up.

Wangapeka.

Notwithstanding that a great deal has been said about the immediate start to be made in this river, I am informed that there is no sign of any material for dredge-building being carted on to the ground, but further prospecting by boring is being done. No mining has yet been commenced on the Wangapeka Run.

ROLLING RIVER AND NUGGETY CREEK.

Five or six men are now working here, but when inducement offers they leave for road-making. Provisions were carried out with a view to prospecting in the vicinity of the Crow River, but owing to continued rain no work was done.

BATON RIVER.

This river is gradually being deserted; only three men are now at work, and their returns are said to be small.

SHERRY RIVER.

One party consisting of two men are working on private property, and have lately brought up a deeper tail-race to enable them to bottom ground that has hitherto been too deep for them. They are reported to be making fair wages.

CROIXELLES.

Chrome.

A wire tramway has been erected at the works here to facilitate shipment and I hear results are proving satisfactory.

I have, &c.,
WILSON HEAPS, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden HAWKINS to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Greymouth, 10th June, 1901.

I have the honour to forward herewith statistical returns with detailed reports from the several districts of my Courts of Greymouth, Ahaura, Reefton, Lyell, Westport, and Charleston. I am indebted for these detailed reports to the painstaking assistance of the Clerks of the several Courts, and to secretaries of companies, mining agents, and others for much information and I have to express my thanks to all for the service rendered.

The department has sustained the loss of a most experienced and excellent servant in the death of Mr. Lucas, who was for over thirty years Clerk of the Magistrate's and Warden's Court at Reefton.

I have to report that the district has been worked in the last twelve months without any difficulty, and, I think I may say, with no inconvenience to suitors. I have, I think, in every case except two, been able to open my Courts at every place at the precise hour and day appointed. Delays of a day have twice occurred at Wesport, on both occasions owing to the state of the sea and flood in the river.

The new facilities given by the Railway Department for a through service between Greymouth and Westport on Tuesdays and Fridays will not yield the full advantage until the Inangahua and Buller Rivers are bridged. The former will, I conclude, be bridged by next year. As to the latter, it is a matter for regret that the Government should have been induced to enter on the costly and tedious expedient of a loop-line road, which still leaves the always inconvenient and frequently dangerous punt connection, for which the Government and the public are paying several hundred pounds a year. This obsolete form of river-passage is the more to be regretted as an excellent site for a bridge exists a little above the Ferry, at which the river is conveniently contracted.

While the reef-mining and sluicing industries are making fair progress, the chief development in my district is in the dredging enterprise. The following tables show the number of prospecting and special claims granted and the number of special claims cancelled and surrendered during the nine months ended the 31st December, 1900. Nearly the whole of the prospecting licenses, except a few of those at Reefton for reef-mining, and at Charleston and Westport and Ahaura for sluicing, are for dredging purposes. It must, however, be remembered that an appreciable number of these prospecting licenses are renewals of those granted up to the 31st March, 1900.

RETURN of PROSPECTING LICENSES GRANTED to 31st December, 1900.

	Number granted.	Area granted. Acres.
Greymouth	172	14,724
Ahaura	331	26,980
Reefton	82	5,518
Westport	95	6,088
Charleston	5	420
Lyell	47	2,618
Total	732	56,348

RETURN of SPECIAL CLAIMS GRANTED to 31st December, 1900.

	Number granted.	Area granted. Acres.
Greymouth	28	1,871
Ahaura	80	4,744
Reefton	12	599
Westport	36	1,810
Charleston	8	172
Lyell	27	396
Total	191	9,592

SPECIAL CLAIMS CANCELLED AND SURRENDERED.

	Number.
Greymouth	36
Ahaura	12
Reefton	34
Westport	12
Charleston	4
Lyell	14
Total	112

At the end of April last I sent out, by permission of the Minister, a circular to 102 dredging Companies, which were all that I could then ascertain to have been floated, of claims within my district. Only fifty-eight of these companies have sent replies. The result of this circular is given in the Table A appended; in Table B the returns are supplemented as to the remaining fourty-four companies by recourse to the "Press Investor's Guide," a well-compiled and valuable little book. I must observe that the returns made were to some extent disappointing for the purpose of comparison, different companies having adopted different measures of certain units, and the return to other columns were so loose that I have thought it better to omit them altogether. If the Minister should be of opinion that such returns have a sufficient value, a well-considered form of return should be issued in future to all companies on the 31st March in every year. It is not one which imposes any great trouble on secretaries. If the course which I suggested in my last year's report had been adopted, much of what I have asked for could have been tabulated by the Clerks of my own Courts.

It will be observed that out of 102 companies registered fifty-three only, as far as my information goes, had dredges at work or ordered, and out of this number, as appears by a report kindly made to me by a broker and mining agent in Greymouth, seventeen only are working.

The return of gold obtained during the year is 7,608 oz., but of this 5,461 oz. was produced by one dredge from December, 1894, up to 31st March, 1901, and I have no return as to the proportion produced in the last year. Averaging the return of this dredge for, say six years, it would give 910 oz. a year. Assuming that it is reasonable to adopt such an average, the entire dredging output in the district for the year ending March, 1901, would be 3057 oz. It must, however, be borne in mind that few of the dredges had got to work before January, 1901, and that some are already indicating substantial and steady returns.

The following return, which I take from the Greymouth *Evening Star* of the 4th June, will indicate the progress, made since the 31st March last: "For the month of May—or, to be more accurate, for the five weeks ended Saturday last—the gold yield from twelve dredges was 1,008 oz. 6 dwt., made up as follows: Nelson Creek (five weeks), 275 oz. 16 dwt.; Pactolus (five weeks), 129 oz. 18 dwt.; Grey River (four weeks), 77 oz.; Reeves's Proprietary (four weeks), 75 oz. 19 dwt.; Leviathan (four weeks), 74 oz. 5 dwt.; Maori Queen (five weeks), 76 oz. 6 dwt.; Buller Junction (five weeks), 88 oz. 16 dwt.; New River (three weeks), 47 oz. 12 dwt.; Ford's Creek (two weeks), 16 oz. 6 dwt.; Waipuna (four weeks), 25 oz. 19 dwt.; Greenstone Creek (two weeks), 16 oz; Greenstone Junction (five weeks), 43 oz. 19 dwt.: total (forty-eight weeks), 1,008 oz. 6 dwt."

I do not think it within my province to express opinions on particular dredges, and I have purposely excised from the reports of the Clerks and agents all such expressions of opinion Nor do I think that at present the industry has been tested sufficiently to enable any one to arrive at any definite conclusion as to them. What I think can be said is that it is now proved that dredging can be worked to profit both on the Buller and Grey sides. There was too much haste at first, and it is not to be regretted that the state of the market effectually stopped many "wild-cat" schemes which would unquestionably have been otherwise floated. Shareholders and directors have had time for consideration, and the result is evident in increasing prudence.

I have thought it my duty to some extent to try and discourage the entering into contracts for dredges until the ground has been better proved, both for its auriferous value and for the depth and character of the stuff to be raised, and obstacles which the dredge would have to deal with, and to meet which it should be designed. I announced at my Courts that, if I was satisfied that a company was diligently carrying on operations for the above purposes, I should gladly extend them time for commencing actual dredge-building operations to the full two years rather than see them hurried into imprudent contracts.

The dredges now at work have furnished experience of great value to other companies, and I am sure that no better words could be put up as a warning in every dredging company's office than Shakespeare's, "Wisely and slow: they stumble that run fast." Some dredging companies have gone or are going into liquidation—some happily at no greater cost to their shareholders than that of the preliminary expenses, and a year's expenses of general management; others will have to face the loss of all their capital beyond what they may be able to recover by sale of their dredges. But all this tends to a survival of the fittest, and to warn the investing public against rash and hasty enterprise. There remains the solid basis of a valuable industry when the conditions of success have been better studied and complied with.

I have now to deal with a matter of considerable importance to subscribing shareholders and to promoters and holders of paid-up shares. In the term "promoter" I must, to avoid prolix repetition, include the original licensee of a prospecting license or special claim; the vendor of the claim to a promoter or the company, and the promoter or promoters who float the company, and if he acts in the matter whether directly as promoter or not; and the broker who places the shares—the singular "promoter" to include the plural "promoters."

Parliament made last session, in "The Companies Act Amendment Act, 1900," an effort to control the power of "the promoter" which he exercised under his fully-paid-up shares, but by

subsection (3) of section 2 the whole intention of the Legislature is made purely illusory. That subsection is as follows: "Shares given in lieu of cash in payment for any properly acquired by the company shall not be deemed to be promoters' shares within the meaning of this section." It surely is clear that the promoter has only to make his contract for cash, or, if the company see fit, the equivalent in fully paid shares taken at par in lieu thereof, to escape the provisions of the statute. If Parliament is seriously desirous to protect the contributing shareholders it will be necessary to introduce much firmer and more decisive legislation. To justify this a short survey of the whole conditions of the property dealt with and the relation of the "promoter" to the State and the company is necessary. I do not say that at present I am in possession of data sufficient for my purpose. It is not my intention to urge crude legislation. I think it may be quite desirable for the Government to issue a Commission to, say, three persons of proved judicial qualifications to take evidence in the two chief centres of mining business—viz., Auckland and Dunedin—and to await their report. The Commission may be very inexpensive in every way, and the report of such persons as I suggest would yield a valuable basis for legislation.

I have had little experience of quartz-reef mining and my remarks must be taken to be chiefly applicable to the sluicing and dredging industries though I believe that the Auckland capitalists were compelled to take an analogous course to that I recommend for statutory enactment to protect themselves; but meantime, and guarding myself by expressly admitting the inadequacy of material, I think there are just grounds for the intervention of the Legislature.

There is no question that a considerable number of claims are floated which will never pay the shareholders' interest on the capital which they have subscribed, and many more which will never repay the capital invested. In whose interest and by what means are these claims floated? I think it cannot be disputed that the persons most interested are the "promoters." It is very true that not all persons take shares in companies without making the least attempt to ascertain the value of the property, sometimes on the mere chatter of quite irresponsible touters, often on the recommendation of persons interested in floating it, and in many cases on the reports of the experts only. I refer to *bonâ fide* investors, not to persons merely buying shares with a view to a quick profit on a rise, and whom I do not pretend to protect. It seems to me that such *bonâ fide* investors are fairly entitled to all reasonable protection by the State. Parliament has already recognised this as I have said, in the Act of 1900, but I may besides point out why I think that special controlling legislation is justifiable in case of these mining companies. The mining privilege is the creature of the State. It is granted out of the estates of the Crown. It is the foundation of a special industry regulated by Act of Parliament. It is most injurious to the common welfare that the possession of these mining privileges should be abused; that, instead of proving the foundation of a solid and healthy industry of sound commercial value, they should be perverted for the mere creation of paper scrip, and the gambling of the Stock Exchange under the fever and excitement of a factitious boom which, when it collapses, involves in the disaster many varied interests and many innocent, though not the most prudent persons, and paralyses the industry itself.

There are certain facts within the experience of all persons which generally govern the acquisition of claims and the floating of a company to work them; and, subject to exceptions, I think it may be recognised as a fact that the general run of properties and formation of companies is as follows: A man pegs out, say, 100 acres as a prospecting area, at the cost now of some four wooden pegs and, say, half a day's labour. He gets one or two experts to make a few holes in and a report on the claim. If he is not in a position to float it himself he applies to some one who is—probably a broker. The prospectus is got out, provisional directors secured, brokers, solicitors, and bankers named. Up to that point the expenses incurred by the "promoter" are probably less than £30 to £40. I have before me the reports of ten companies, and I find from them that the amount of expenses paid in cash by the several companies for preliminary expenses average £269. That covers brokers' commission on flotation, cost of special-claim license, &c., apparently all cash expenses of the acquisition of the claim, and the floating of the company. If I am correct in this, then the "promoter" is recouped all his expenses, and, besides, a not inconsiderable profit in the way of commission, and he gets cash for this out of the contributing shareholders. Besides this, the "promoter" acquires from the contributing shareholders paid-up shares in the company to a large amount. What this is, is shown by an average of 102 companies in my returns A and B, where paid-up shares are 238,400, out of a share capital of £1,028,975, or rather over a fourth of the entire capital. The lowest amount I find from the returns is £600 in paid-up shares; the highest, £6,000. That practically is the "promoter's" estimate of the value of a property which he acquired for nothing from the State, for his expenses, if I am right in my supposition, are always fixed to be paid in cash. It is not as if any great amount of exploration or skill or experience had been used. The pegging-out of these claims has, with certain exceptions, been the most careless, reckless work. It has been a race as to who could peg out ground quickest, anywhere and everywhere. My returns for last year show this, where from the 31st March, 1899, to the 31st May, 1900, there were 919 claims taken up, including 67,342 acres. It is, I think, apparent that the whole burden lies upon the contributing shareholders. They pay all the "promoter's" expenses. They pay for all the machinery of the company. They pay for all the information and surveys, the boring necessary to assure them whether the claim is profitably workable or not. While the "promoter" stands by, as is said, "on velvet," he has his property proved and worked at the cost of the contributing shareholders. The utmost, it seems to me, that can be said is that if the company are unwilling to go on with the venture the license should be handed back to the "promoter."

I think that, without reservation, the "promoter's" shares should not be issued, and no "promoter" should have any vote whatever unless and until the company shall have paid two dividends. That no "promoter's" or holder of "promoter's" shares should, till the happening of that event, be a director or officer of the company. That if the company went into voluntary or com-

pulsory liquidation before two dividends had been paid, the promoter should have no claim whatever on the general assets, but the license only should be retransferred to him. In order to protect the "promoter" against any unfair delay or failure duly to prosecute the undertaking, there should be a power to apply to the Warden for a winding-up order on such terms as to the promoter's interest the Warden, after hearing both parties, may adjudge.

It is worth consideration whether this power to order a winding-up should not be vested in the Warden on application of shareholders representing one-half of the contributing shares. In either case the order should be to effect a winding-up in the same way as if a voluntary winding-up had been carried by resolution.

I think that, for the information of persons wishing to invest, the following information, or to the like purpose, should appear on the prospectus. Very long reports from mining experts are published in prospectuses from which it is often difficult to sift the grains of fact, and the promoters are in no way made responsible for them; the purpose of the details now suggested is that they should be made on the direct responsibility of the promoters, and form the basis and consideration of the contract into which the applicant for shares enters. Copies of all agreements whatever made between the several promoters and between them and the company to be printed on the prospectus. Besides printing on the prospectus every such agreement, there should be a short tabulated list in detail of all expenses, sums of money, and all shares agreed or intended to be paid and allotted respectively out of the assets of the company, and the Christian name and surname, address, and occupation of every payee or allottee, and the several amounts or number of shares to be paid or allotted to each of such persons, and including the payment to be made to the broker for getting shares taken up.

That information at least would put the *bonâ fide* investor on his guard, and not only enable him to discount the value of interested advice, but put him in possession of the liabilities to be met by the company. It should be a penal offence punishable summarily to fail to give the above information, and to give it correctly; and on proof in the Warden's Court that such false statement was wilfully made, any applicant or allottee of shares should have his application avoided, and he should be entitled to a return of all sums paid.

There is another matter which I think in these companies dealing with mining claims requires legislation. A company is floated to work a particular claim or claims. The memorandum of association should be confined to that claim or those claims. Nothing should be allowed in the memorandum to authorise that company to shift its capital to acquire and to work any other claim. No majority, however great, should be allowed to force a person who invested in the one claim to divert his capital to another. The remedy of the majority must be to pay out the minority at current market values of shares.

Besides this, there is a great evil as to articles. The schedule to the Companies Act is rarely adopted, but, instead of the scheduled articles, articles of the most vague and loose description are filed; and when it is too late the shareholder finds that he is absolutely at the mercy of the directors, or, at least, of a majority of proxies under the command of the directors. It is true that he is referred to the memorandum of articles, which may be seen at the office of the company. But he takes them for granted, and even if he read them would probably quite fail to grasp their effect. I think that the adoption of the schedule form of articles should be imperative. If there are objections, those objections should be considered and the form amended; but at present the wide laxity of the optional memorandum and articles is a serious evil, and permits all kinds of abuses. If alterations are really necessary, there should be a reference to the Chief Registrar of Joint-stock Companies, who should have access to legal advice on behalf of the Crown, or to the Warden's Court, and the certificate of the Registrar or order of the Warden should be necessary to validate the articles so altered.

The prospectus of every sluicing and dredging company should, in addition to any reports or matter the "promoter" chooses to insert therein, contain on its front sheet certain other information, and I make the following suggestions as to the details of such information:—

(1.) The character of the superficial area—that is, whether it is river-bed or dry land; whether it consists of river flats or terraces; whether it is covered with timber, or scrub, or is grass land.

(2.) The general character of the stuff to be dealt with, whether light sandy soil and wash, or heavy shingle and boulders.

(3.) How the ground has been proved auriferous; the number, size, and depth of bores put down, or holes sunk, the locality of each hole by reference to the plan accompanying the prospectus, and the number of grains per cubic yard from every bore.

(4.) The names, addresses, and qualifications of the persons responsible for the bores and tests, and the dates when they were made; whether the depth at which the true bottom of the wash has been ascertained, in what number of places, and with what results; whether the bottom is rock or clay.

(5.) As to sluicing claims, also dredging claims, requiring the water to be brought to the claims, the source and number of heads of water to be obtained therefrom in winter and summer, the length of race, the character of the ground over which the race is to be carried, and the estimated cost of the race, including tunnelling, rock-cutting, fluming, piping, siphons.

(6.) If Nos. 3, 4, or 5, or any of them, has not been ascertained or done, or insufficiently so to test the general auriferous value and the depth to which sluicing or dredging will have to be carried on, and the number of heads and cost of race, then give the estimated cost to the company of making effectual tests and surveys, and ascertaining the number of heads and the cost of the race.

The reason for furnishing in a categorical form this information hardly need be given. But I may point out that it at least enables an investor to see at a glance the nature of the claim in which he is asked to risk his money, and to judge whether further testing will be necessary, and what the cost of such testing will probably be. Nos. 3, 4, and 5 form the foundation of the responsibility of directors, who ought not to order any plant and enter on any contracts till the facts have been ascertained and submitted to the shareholders.

A good example of the cost of preliminary investigation made by directors of a dredging claim appears in the reports of Messrs. J. P. Smith and Messrs. Cutten Brothers to the Perritt's Junction Lead Gold-dredging Company (Limited) in February or April last.

There is one more point for consideration. The question of the exclusive jurisdiction of the Warden's Court has been raised in the case of Thomson's Bullock Creek Dredging Company (Limited) and Hume *v.* Thomson and others. His Honour Judge Edwards, in May last, decided that an action charging fraud in relation to a contract referring to a mining privilege was not within the exclusive jurisdiction of the Warden's Court. Possibly the question may be carried to the Court of Appeal. In any case it may be a matter for the consideration of the Government whether the jurisdiction sections of the Mining Act should not be strengthened. Actions for calls in mining companies are frequently brought in the Magistrate's Court. Did the Legislature intend this, or to bring everything connected with mining to the Wardens' Courts?

District of Greymouth Court.

Barrytown.

Barrytown Flat Gold-mining Company (now Andrew McKay).—This claim is considered one of the most difficult to treat on the West Coast owing to the fineness of the gold and the heavy nature of the wash, which mostly consists of black sand and fine gravel. The spread of tables used by Mr. McKay requires 270 yards square of baize, blanket, and cocoanut-matting, and the design of the tables has, I understand, proved very effective. The construction of the water-race from Fagan's Creek still continues, the timber for the same being milled on the spot. The owner of the claim states that it has given very satisfactory returns during the past year.

Waiwhero Sluicing and Dredging Company (Limited).—Since last report the company has been busy in completing construction-works. The whole of the forty-head race from Canoe Creek is now completed and is seven miles in length. For the last ten weeks the company have been sluicing at one face with about thirteen heads of water, and won 470 oz. of gold in that time. At present they are sluicing two faces, but no returns are to hand, as there will be no wash-up till the expiration of the month's sluicing. The company are considering the proposed erection of a "blow-up" hydraulic elevator to work the flat part of the claim, which they have prospected with that intention. About twenty men will be employed at the faces, and ten men on other work.

Pactolus Sluicing Company.—This company have shut down.

Greymouth Section.

The undermentioned companies have dredges working within this section of my district: Grey River, Dobson No. 2, New River, Maori Queen, and Leviathan. It is premature yet to form any reliable opinion of the value of the properties being worked, as in nearly every instance it has been found necessary to effect mechanical alterations to enable the dredge to work efficiently, but even working under disadvantageous circumstances the average result has been fairly satisfactory, and it is probable that when the necessary alterations have been completed the returns will show a substantial increase. In some cases the ladders are too short to admit of the bottom being cleaned up by the dredge-buckets, and in other instances the machinery is on the light side, the wash having proven heavier than was anticipated. The defects referred to are largely due to the fact that insufficient attention has been paid to the difficulties to be met. These mistakes must be accepted as incidental to a new industry promoted during a period of sanguine excitement, and, although it is probable that people who have gambled on the chances of this branch of gold-mining proving extremely profitable will be disappointed in many instances, I am satisfied that as an industrial factor gold-dredging in this district will prove lasting and beneficial. In addition to the above, the following companies have dredges in course of construction, most of which will be working within the next half-year: Maori King, Marsden No. 1, Marsden No. 3, Foley's, North Beach, and Golconda.

Coal-mining and Timber.

Coal.—Brunner Coal-mine: 1898, 66,694 tons; 1899, 103,085 tons; 1900, 125,403 tons. Blackball Coal-mine: 1898, 52,835 tons; 1899, 65,300 tons; 1900, 82,516 tons. The output of this mine, though in excess of former years, does not come up to expectation owing to the fire in the mine, which delayed operations for fully two months.

Timber.—Quantity exported: 1898, 11,783,292 superficial feet; 1899, 15,116,175 superficial feet; 1900, 14,549,433 superficial feet.

General.

The following is a return of cases disposed of in the Magistrate's and Warden's Courts at Greymouth for the year ending 31st March, 1901: Civil, 143; criminal, 271; Warden's, 36.

The revenue for the year amounted to £5,111 15s. 9d., made up as follows: Warden's department, £4,905 11s. 9d.; Magistrate's department, £152 15s.; licensing fees, £53 9s.

The particulars of revenue collected in the Warden's Court at Greymouth for the year ending 31st March, 1901, are as follows: Miners' rights, £307; water licenses, £2 17s. 6d.; rents and royalties, £2,064 5s. 9d.; fees and fines, £57 14s.; miscellaneous, £2,473 14s. 6d.: total, £4,905 11s. 9d.

LIST of PROSPECTING LICENSES for DREDGING PURPOSES GRANTED in the WARDEN'S COURT, Greymouth, from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acr.	
April 9	J. Taylor	100	Grey River.
" 9	J. Giesecking	100	New River.
" 24	J. T. Skoglund	100	Portuguese Creek.
" 24	R. Nancarrow	100	"
" 24	J. W. Callwell	100	Fuschia Creek.
" 24	W. Wilson, jun.	100	"
" 24	J. Petrie, sen.	100	Paroa.
" 24	E. Wickes	100	New River.
" 24	F. Stace	100	Hohonu.
" 24	"	100	Arnold.
" 24	J. Fitzsimmons	100	Deep Creek, Kotuku.
" 24	"	100	" "
" 24	A. J. Tomkies	80	Dobson.
" 24	M. Phillips	24	Cockabulla Creek.
" 24	"	32	"
" 24	M. Gillies	30	Teremakau.
" 24	C. Parfitt	50	No Town Creek.
" 24	J. Howey	100	Brown's Terrace.
" 24	"	100	"
" 24	T. Saunders	50	Maori Gully.
" 24	H. C. Harley	100	Stillwater.
" 24	S. C. Fache	100	Arnold.
" 24	C. R. Skelley	100	"
" 24	G. D. Wilson	30	Cameron's.
" 24	"	100	New River.
" 24	Joseph Butler	100	Brown's Terrace.
" 24	William Butler	100	"
" 24	D. Sheedy and others	100	Cameron's.
" 24	T. W. Tymons	75	McLean's Creek.
" 24	T. H. Feary	100	Portuguese Creek.
" 24	"	100	Candlelight Diggings.
" 24	T. Crowe	100	Sandstone Creek.
" 24	F. J. Sweetman	100	Fiji Terrace.
" 24	T. E. Coates	100	"
" 24	L. Hayden	100	Deep Lead.
" 24	Joseph Hore	100	Near Rutherglen.
May 8	G. D. Wilson	100	Near New River.
" 8	H. Mordaunt	20	Ten-mile Creek.
" 8	F. J. Sweetman	100	Near Grey-Taylorville Road.
" 8	A. G. Tomkies	60	Arnold River.
" 8	W. M. Delaney	26	Near Twelve-mile.
" 8	H. O'Donnell	80	Maori Gully.
" 8	L. Stewart	80	"
" 8	M. O'Brien and another	75	New River.
" 8	J. Kennedy	85	Old Deep Creek.
" 8	R. Johnston	100	Arnold River.
" 8	M. Shannahan	90	"
" 8	S. C. Fache	100	Jack's Creek.
" 8	"	100	"
" 8	T. Feary	100	Candlelight Range.
" 8	R. Russell	80	Woolley Creek.
" 8	C. Parfitt	100	Arnold Flat.
" 8	"	50	"
" 8	W. Wilson	100	New River.
" 8	R. Johnston	100	Arnold River.
" 8	George McKenzie	100	Coal Creek.
" 8	James Kelman	100	Eight-mile Creek.
" 8	W. E. Church	80	Langdon's Creek.
" 8	R. W. Parkinson	16	Dobson.
" 8	James Robertson	100	No Town, Arnold.
" 8	J. J. O'Donnell	100	Maori Gully Creek.
" 8	R. Johnston	100	Arnold.
" 8	F. P. Guthardt and others	95	Seven-mile North Beach.
" 8	J. Isdell	100	Chinaman's Flat.
" 8	"	100	"
" 8	T. Baxter	100	Arnold.
" 8	W. Baxter	100	"
" 8	H. W. Kitchingham	100	Seven-mile North Beach.
" 8	S. C. Fache	100	Arnold.
" 8	D. Sheedy	80	"
" 8	C. R. Skelly	80	Maori Gully.
" 8	A. Giffney	100	No Name.
" 8	J. McCarthy	100	Deep Creek.
" 8	J. E. Williams	100	"
" 8	A. G. Tomkies	100	Near Kokiri.
" 8	W. Ryan	90	Near Cobden.
" 8	G. H. Russell	96	Near Marsden.
" 21	G. D. Wilson	100	Maori Creek.
" 21	"	100	Eight-mile Creek.
" 21	"	100	New River.
" 21	F. Stace	100	Arnold River.
" 21	M. Ryan	65	Maori Gully.
" 21	S. Robertson	60	Arnold Flat.
" 21	G. D. Wilson	7	Maori Creek.
" 21	G. H. Russell	24	Near Marsden.
" 21	James Walsh	100	Near Barrytown.
1900.		Acr.	
May 21	M. Walsh	100	Near Barrytown.
" 21	C. B. Montagu	100	Teremakau.
" 21	G. B. Ritchie	100	Chinaman's Flat.
" 21	"	100	"
" 21	J. W. Easson	100	Crooked River.
" 21	J. Isdell	100	Chinaman's Flat.
" 21	"	100	"
" 21	"	100	"
" 21	"	100	"
June 11	A. G. Tomkies	100	Near Kokiri.
" 11	F. Hislin	100	Stillwater.
" 11	V. Bevilacqua	100	Deep Creek.
" 11	A. E. North	100	"
" 11	R. Clough	100	Barrytown.
" 11	G. D. Wilson	100	"
" 11	J. Isdell	80	Sulky Gully.
" 11	R. Russell	100	Woolley Creek.
" 11	J. W. Callwell	100	Near New River.
" 11	C. R. Woledge	100	Near Kaimata.
" 11	"	100	"
" 11	"	100	"
" 11	George Weaver	100	Arnold Flat.
" 11	Henry Jones	30	Stillwater.
" 11	Thomas Jones	60	"
" 11	E. Hodgkinson	75	Near Portuguese Creek
" 11	John J. Ryall	60	Canoe Creek.
" 11	A. G. Tomkies	45	Near Arnold River.
" 11	A. Hodgkinson	99	Arnold Flat.
" 11	R. Johnston	100	Arnold River.
" 11	R. Williams	100	Arnold Flat.
" 11	N. Mortensen	100	Arnold River.
" 11	T. Oxenham	100	Bank, Arnold River.
" 11	Richard Clough	100	Barrytown.
" 11	John Stratford	60	Marsden.
" 11	B. O'Brien and others	100	Arnold River.
" 11	"	100	"
" 25	John Brennan	100	Eight-mile Creek.
" 25	W. M. Delaney	20	Grey River.
July 9	H. W. Kitchingham	100	Fourteen mile North Beach.
" 9	A. E. Benjamin	100	Moana.
" 9	G. T. Shilton	9	New Marsden.
Aug. 20	H. J. Jeffrey	100	Barrytown.
Sept. 10	John Hogan	100	Maori Gully.
" 10	G. D. Wilson	100	Brown's Terrace.
" 10	William McKechnie	100	"
" 10	Charles Uddstrom	12	Ruby Creek.
" 24	George Turner	100	Arnold.
" 24	J. D. Gillies	20	New River.
" 24	J. Stewart	100	Grey River.
" 24	N. D. Hood	100	Arnold.
Oct. 8	J. T. R. Delaney	20	No Town Creek.
" 15	H. W. Kitchingham	100	Near New River.
" 22	A. Dunn	100	Barrytown.
" 22	John Spencer	46	South Beach.
" 22	H. A. Bruce	100	Barrytown.
" 22	A. F. Foot	100	Arnold River.
Nov. 5	W. S. Kernahan	80	New River.
" 19	A. F. Foot	40	South Beach.
" 19	Joseph Taylor	63	Near Point Elizabeth.
" 19	Patrick Regan	56	Stillwater Creek.
" 19	"	56	"
" 19	"	56	"
" 19	E. I. Lord	100	Candlelight Creek.
" 19	J. T. Skoglund	100	"
" 19	Joseph Taylor	100	New River District.
" 19	A. J. Wickes	60	Cement Creek.
" 19	Joseph Taylor	80	New River.
" 19	F. J. Parkinson	30	Near Point Elizabeth.
Dec. 3	The Grey River Gold-dredging Company	2	Stillwater.
" 3	A. McKay	100	Barrytown.
" 3	"	100	"
" 3	J. Trent	100	"
" 3	H. W. Young	100	"
" 3	"	100	"
" 3	H. Seebeck	75	Stillwater.
" 3	R. Nancarrow	100	Candlelight.
" 3	J. T. Skoglund	100	"
" 3	C. L. Morice	100	"
" 3	R. Nancarrow	100	Portuguese Creek.
" 3	C. L. Morice	100	Candlelight Creek.
" 3	E. I. Lord	100	Portuguese Creek.
" 3	C. L. Morice	100	Card's Creek.
" 3	E. I. Lord	100	"
" 3	J. T. Tidd	100	Canoe Creek.
" 3	H. J. Jeffrey	100	"
" 3	H. W. Young	100	Near Barrytown.

LIST of SPECIAL DREDGING CLAIMS GRANTED in the WARDEN'S OFFICE, GREYMOUTH, from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acres.	
May 8	Arthur J. Wickes	20	New River.
June 11	Francis W. McKenzie	59	Paroa.
" 11	Arthur J. Wickes	81	New River.
" 11	Neil Dickson Hood	99	Barrytown.
July 23	Thomas Rose and two others	20	Grey River.
Aug. 8	North Beach Gold-dredging Company	80	North Beach.
" 8	New River Gold-dredging Company	99	New River.
" 8	"	99	"
" 8	Grey River Extended Gold-dredging Company	42	Grey River.
Sept. 10	"	18	"
" 24	Charles Uddstrom	99	Grey River and Ruby Creek.
Oct. 22	David Larnach	87	Stillwater.
" 22	"	80	"
" 22	Thomas McCarthy	99	Paroa Lagoon.
" 22	Maori Gully Gold-dredging Company	58	Maori Gully.
" 22	"	89	"
Nov. 19	Robert W. Parkinson	20	Grey River.
" 19	Leviathan Freeholds Gold-dredging Company	37	South Beach.
" 19	Grey River Extended Gold dredging Company	31	Grey River.
" 19	Golconda Gold-dredging Company	83	New River.
" 19	Henry Stokes	62	"
" 19	Henry Philip Hill	100	Barrytown.
" 19	Marsden No. 1 Gold-dredging Company	99	Near Marsden.
Dec. 8	Marsden No. 3 Gold-dredging Company	23	"
" 17	Michael Hannan	31	South Beach.
" 17	Marsden Lead Gold-dredging Company	88	New River.
" 17	Gardiner D. Wilson	74	"
" 17	George Gage	95	"

DISTRICT OF AHAURA COURT.

Half-ounce, Duffer's, and Noble's Creeks.

The standing population appears to keep about the same in these localities, and, indeed, in all the old gold-mining centres on the Coast. Numerous parties of borers, experts, prospectors, and visitors have to a certain extent infused a little life into these places. The last twelve months has been an exceptionally dry season, operating very unfavourably on the sluicers. A number of special dredging claims have been granted, and four companies floated. Contracts for pontoons, machinery, &c., for the respective dredges have been let.

Waipuna.

About ten special dredging claims have been taken up, and seven companies floated. One dredge is already at work, the pontoons of a second are ready for launching, while a third is having the machinery put on. Contracts for the other dredges are in a forward condition.

Orwell Creek.

No new ground has been opened, and the district has suffered severely from want of water. At high levels a considerable extent of payable sluicing-ground may be obtained, but to bring water to command these terraces means a large expenditure of money, more than is within the means of the working-men. Two companies have been formed to dredge the deep ground in the bed of the creek. One dredge has the machinery erected and is ready for work.

Riverview, Sullivan's, and Ahaura River.

Sluicing is almost the only method of working employed here, and good returns are being obtained. The miners have themselves brought in four races from Orwell Creek across Ahaura Plains to the north bank of the river, and are selling the water to other parties. The source of supply is, however, very small, averaging in ordinary weather about twelve heads in the creek. Moreover, this water is not available for the south bank, where the miners depend almost solely on storm-water and drainage. Six special claims have been granted for dredging, and three companies floated to work them. The river is confined by rocky banks, with rich alluvial wash on either side. One dredge is nearly ready for work, and contracts for the other two are in a forward state.

Moonlight Creek.

No new ground has been opened up, but the miners generally have had better returns lately than for some years. The character of the gold is very heavy and solid, so much so, indeed, that it takes very few specks to make up an ounce. But, as with all coarse gold, no leads or runs can be found, and the miners have frequently to work for months without seeing a colour, and, when they least expect it, get rewarded for their labour by some rich find.

An effort has been made to float a company locally to work some terraces—Shetland and Stewart's—that are reported to be rich. Want of water was all that prevented them from being

worked before. The sum of £6,000 is required to bring water in from the head of Moonlight Creek An engineer has surveyed the line of race, and reports favourably upon it. Should there be a sufficiency of water a very large area of high-level sluicing-ground will be brought under the command of the water. A sluicing company—the Ara—is already in active operation in the creek. The prospects promised well, but so far no return has been made.

About half a dozen special claims have been taken up for dredging purposes. Three companies have been floated, and the dredge contracts are well under way.

Healey's Gully and Montgomery Terrace.

Mining is being successfully carried out here by means of hydraulic sluicing. The population has gradually increased during the last year or two from half a dozen to upwards of a hundred people. Water has been brought by costly water-races from the Roaring Meg and its tributaries. Several companies are at work, the more important being Montgomery Terrace, Roaring Meg, Republic, and Shrives and party.

Nelson Creek and Callaghan's.

In the former place the population has sensibly increased, owing, no doubt, to the timber industry and the introduction of dredging. Two dredges are at work—one the Nelson Creek—giving very satisfactory and even returns. The other—Pactolus—has already proved the payable nature of the ground, and good returns are expected shortly. Another dredge—the "Trafalgar"—is nearing completion, and is expected to show good dividends. Seven or eight other companies have been floated to work the creek, and the contracts in most instances have been let. A considerable number of sluicing claims are at work on the terrace, a fair supply of water being obtained from the creek.

In Callaghan's sluicing is being carried on, with varying success; but all are waiting for the local dredge to get to work on the creek, which cannot be worked by other means.

Red Jack's.

Here also sluicing is predominant. The Chinese have, for the most part, secured all the prior water-rights, and are said to be getting good returns. Dredging is present too, and one dredge is nearly completed. Two other companies are floated to work the creek and banks.

No Town.

Three dredging companies have been floated, and one dredge is in course of construction. Here, as in other sluicing localities, the want of water is a great drawback. Some time ago, however, a syndicate secured a right to fifty heads of water from Lake Hochstetter, and had a line of race surveyed. Nothing further has been heard by the local public of the project. The water, if brought in, would command a great extent of proven sluicing-ground, both here and in Red Jack's.

Blackball.

No new finds of gold have been made here during the last year, and the population remains almost stationary.

Snowy Creek.

Three special claims have been applied for, and a considerable amount of boring has been done. The population remains about the same. Prospecting, sluicing, and driving are the only modes of working employed.

Paparoas.

Generally, interest in quartz-mining seems to be dead. One or two companies are, however, still carrying on operations in the mountains. The Crœsus has been working intermittently, and is now putting in a low-level tunnel from the Blackball side of the range. Should a reef of a payable nature be found at that level it will tend very much to induce extensive quartz-mining operations in the near future. The Taffy Company still continue operations; but the Minerva and the Garden Gully have done very little except prospecting.

Coal.

The existence of coal in quantity at Garden Gully and Moonlight has long been known, but its usefulness is at last to be made apparent. Mr. James White, of Ahaura, has taken up a small lease, and proposes to supply dredges on the Grey River and Moonlight Creek with coal from his mine. About 100 tons a week is estimated to be the immediate demand.

Timber.

This district has never been more to the fore in the timber industry than it is now. Mills have been erected, and are working at—Nelson Creek, two; Ahaura, one; Orwell Creek, one; Craigieburn, one; and Mirfin's Flat, two. Fresh bushes have been attacked, and the output of timber from this district is now at least four times as great as two years ago. Nor is this activity noticeable only in the mills. Perhaps a hundred men are engaged in the bush hewing and pit-sawing railway-sleepers, and the results of their work are to be seen in the many thousands of sleepers piled up at the railway-stations at Totara Flat, Ikamatua, and Ngahere.

RETURN of PROSPECTING LICENSES GRANTED by the WARDEN at AHAURA during the Nine Months ending 31st December, 1900.

Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acr.	
April 26	Dan O'Connor ..	100	Hatter's Creek.
„ 26	James D. Gillies ..	100	Barry's Gully.
„ 26	John Turner and another	100	Moonlight.
„ 26	Thomas Henry Garth..	100	Grey River.
„ 26	Joseph Taylor ..	90	Baxter's Creek.
„ 26	John Gill ..	100	Grey River.
„ 26	James Wilson ..	25	Duffer's Creek.
„ 26	Joseph Scott ..	100	German Gully.
„ 26	Bernard Magee ..	20	Teviot Creek.
„ 26	William Craig ..	100	Grey River.
„ 26	Thomas Craig ..	100	„
„ 26	„ ..	100	„
„ 26	Arthur Dunn ..	100	Nelson Creek.
„ 26	John Kennedy ..	100	Big River.
„ 26	George L. Tacon ..	100	„
„ 26	Finlay MacKay and another	100	Ahaura River.
„ 26	David Donald ..	43	Grey River.
„ 26	William D. Milne ..	64	Adams Town Creek.
„ 26	George L. Tacon ..	64	„
„ 26	William C. Claughessy	50	Nelson Creek.
„ 26	Henry A. Wick ..	51	Red Jack's Creek.
„ 26	Henry Bignell ..	100	Deadman's Creek.
„ 26	Arthur Brooks ..	100	Big River.
„ 26	Thomas Magee ..	100	Nelson Creek.
„ 26	William Craig ..	100	Grey River.
„ 26	Hugh Kennedy ..	100	Shellback Creek.
„ 26	James A. Petrie ..	100	Deadman's Creek.
„ 26	Thomas Magee ..	100	Nelson Creek.
„ 26	Emily M. Perrett ..	100	Waipuna.
„ 26	Michael Devereux ..	100	Moonlight.
„ 26	Hugh Magill ..	100	Grey River.
„ 26	Michael Mears ..	100	Upper Grey River.
„ 26	Sidney C. Fache ..	100	„
„ 26	George Fache ..	100	„
„ 26	William Pitches ..	100	„
„ 26	Frederick Jeffrey ..	100	„
„ 26	James Bookin ..	100	„
„ 26	John Hyde ..	100	„
„ 26	Frederick G. Shury ..	100	„
„ 26	Leslie McGeorge ..	100	„
„ 26	Michael Mears ..	100	„
„ 26	Sidney C. Fache ..	100	„
„ 26	James McArthur ..	100	„
„ 25	Arthur Dunn ..	100	Caledonia Creek.
„ 26	Herbert B. Millington	50	Waipuna Creek.
„ 26	George L. Tacon ..	90	„
„ 26	James Coombs ..	90	„
„ 26	Michael Ryan ..	100	German Gully.
„ 26	Gustaf Hahn ..	100	Brian Boru Gully.
„ 26	Henry A. Wick ..	100	Kangaroo Creek.
„ 26	John Priest ..	100	Grey River.
„ 26	Thomas Doyle and another	100	Moonlight.
„ 26	Charles Uddstrom ..	100	Little Grey River.
„ 26	„ ..	100	„
„ 26	Matthias Willing ..	32	Waipuna.
„ 26	Alexander McDonald ..	100	Ahaura River.
„ 26	Patrick Ruane ..	100	Callaghan's.
„ 26	Alexander Doig ..	25	Grey River.
„ 26	Arthur Brooks ..	100	Caledonia Creek.
„ 26	Samuel Furness ..	100	Antonio's Flat.
„ 26	Henry A. Wick ..	100	Kangaroo Creek.
„ 26	Robert Allison ..	100	Ree's Creek.
„ 26	George Hill ..	100	Waipuna.
„ 26	James A. Petrie ..	100	Deadman's Creek.
„ 26	Arthur Dunn ..	100	Larsen's Gully.
„ 26	Michael Noonan ..	100	Callaghan's.
„ 26	Peter Donnellan ..	24	Nelson Creek.
„ 26	Patrick Donnellan ..	48	Kangaroo Creek.
„ 26	William Donnellan ..	48	„
„ 26	Charles Uddstrom ..	80	Little Grey River.
„ 26	Michael Malone ..	100	Paddy's Gully.
„ 26	Michael Noonan ..	100	German Gully.
„ 26	Denis Noonan ..	60	Grey River.
„ 26	J. H. Williams ..	100	Nelson Creek.
„ 26	Edward G. Gosling ..	100	„
„ 26	John O'Brien ..	100	„
„ 26	Henry Erickson ..	100	Orwell Creek.
„ 25	Arthur Brooks ..	100	Caledonia Creek.
„ 26	George L. Tacon ..	100	Antonio's Creek.
„ 26	Thomas E. Coates ..	100	Blackwater.
„ 26	William Creagan ..	100	Grey River.
„ 26	Alexander Doig ..	100	Blackwater.
„ 26	George L. Tacon ..	100	Maori Gully.
„ 26	Alexander Doig ..	100	Big River.
„ 26	Thomas Rose ..	100	Ree's Creek.
„ 26	Charles W. Fisher ..	100	Lake Haupiri.
„ 26	William Fisher and another	100	Granite Creek.
1900.		cr.	
April 26	Alexander McDonald	100	Craigieburn.
„ 26	George Gage ..	100	Roaring Meg.
„ 26	„ ..	100	„
„ 26	„ ..	100	„
„ 26	John Flaherty ..	48	Nelson Creek.
„ 26	Peter Donnellan ..	64	„
„ 26	William Hodgkins ..	100	Waipuna.
„ 26	William D. Milne ..	100	„
„ 26	James D. Harper ..	25	Half-ounce Creek.
„ 26	Gus af Hahn ..	100	Ahaura River.
„ 26	Eugenie L. McLiskey	100	Red Jack's Creek.
„ 26	Joseph McKay ..	100	Deadman's Creek.
„ 26	William Donnellan ..	32	Nelson Creek.
„ 26	Patrick Donnellan ..	32	„
„ 26	Gustaf Hahn ..	100	Grey River.
„ 26	Joseph Stalker ..	32	Twelve-mile Creek.
„ 26	Rosalie M. Petrie ..	100	Snowy Creek.
„ 26	„ ..	87	„
„ 26	Patrick McInnerney ..	100	Baxter's Creek.
„ 26	Alexander McDonald	100	Grey River.
„ 26	Henry Neilsen and another	100	Moonlight.
„ 26	James F. Johnston ..	100	Little Grey River.
„ 26	David Ross ..	50	Sunday Creek.
„ 26	Thomas Doyle and another	100	Blackwater Creek.
„ 26	John McGeady ..	50	Mossy Creek.
„ 26	„ ..	50	Ruby Creek.
„ 26	Edward J. Moore ..	72	Blackball Creek.
„ 26	Thomas Moore ..	71	Nelson Creek.
May 31	Samuel Parry ..	100	Blackball.
„ 31	William Campbell ..	32	Nelson Creek.
„ 31	Patrick Fallon and another	24	Red Jack's.
„ 31	Alan Hannah ..	100	Barry's Gully.
„ 31	William Ross ..	80	Nelson Creek.
„ 31	James Marshall ..	100	Ahaura River.
„ 31	Charles Bellew ..	100	Ahaura Plains.
„ 31	John McAuley ..	100	Orwell Creek.
„ 31	„	100	„
„ 31	Sidney Haines ..	80	Ahaura River.
„ 31	Frederick Shurey ..	20	Snowy Creek.
„ 31	Henry William Kitchingham	100	Upper Blackball.
„ 31	Thomas Moore ..	44	Blackball Creek.
„ 31	Antonia Giambonini ..	100	Ahaura Plains.
„ 31	Francis Duggan ..	40	Scotchman's Gully.
„ 31	Thomas Moore ..	64	Blackball.
„ 31	John McAuley ..	100	Orwell Creek.
„ 31	„ ..	100	„
„ 31	„ ..	100	„
„ 31	Harriet Finlay ..	40	Riverview.
„ 31	Gustaf Hahn ..	30	Sullivan's Creek.
„ 31	Jeremiah Carew ..	100	Roaring Meg's Flat.
„ 31	Thomas Jones ..	40	Healey's Gully.
„ 31	John McGeady ..	70	Antonio's Creek.
„ 31	Carl P. Carlsson ..	64	Deep Creek.
„ 31	Arthur Brooks ..	100	Antonio's Creek.
„ 31	George L. Tacon ..	100	Waipuna.
„ 31	James Coombs ..	100	„
„ 31	William D. Revington	100	Teviot Creek.
„ 31	John Falconer ..	65	Ten mile Creek.
„ 31	Edward Henry Scott ..	100	Deep Creek.
„ 31	William James McIlroy	100	„
„ 31	Duncan Steele ..	100	Ahaura River.
„ 31	James Hallinan ..	70	Noble's Creek.
„ 31	Duncan McLean ..	8	Blackball Creek.
„ 31	„ ..	4	„
„ 31	Michael Mears ..	100	Upper Grey River.
„ 31	Sidney C. Fache ..	100	„
„ 31	Henry E. Williams and others	100	Nelson Creek.
„ 31	Ditto ..	50	„
„ 31	Gustaf Hahn ..	100	Brown's Creek.
„ 31	Francis Johnston ..	100	Slaty Creek.
„ 31	Dominic Coll ..	24	Nelson Creek.
„ 31	John McGeady ..	100	Little Grey River.
„ 31	James H. Chester ..	100	Roaring Meg Creek.
„ 31	„ ..	100	„
„ 31	Martha Austin ..	20	Nelson Creek.
„ 31	James Hallinan ..	24	Noble's Creek.
„ 31	Alexander Doig ..	100	Big River.
„ 31	Benjamin Waylen ..	100	Blackwater Creek.
„ 31	Thomas W. Wilson ..	20	Little Grey River.
„ 31	Richard Currie ..	20	Orwell Creek.
„ 31	Thomas Jamieson ..	35	Nelson Creek.
„ 31	Thomas Magill ..	100	Grey River.
„ 31	John Askenbeck ..	41	Half-ounce.
„ 31	Hugh Magill.. ..	100	Grey River.

RETURN of PROSPECTING LICENSES GRANTED by the WARDEN at AHAURA—*continued*.

Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acr.	
May 31	James Ring	100	Rough River.
" 31	George March ..	100	Grey River.
" 31	James H. Chester ..	100	Ahaura River.
" 31	Lilian March ..	100	Grey River.
" 31	Arthur H. Tacon ..	100	"
" 31	Violet M. Tacon ..	100	"
" 31	William Hodgkins ..	100	"
" 31	William D. Milne ..	100	"
" 31	James Coombs ..	100	"
" 31	George L. Tacon ..	100	"
" 31	John McAuley ..	30	Orwell Creek.
" 31	Arthur Brooks ..	100	Slaty Creek.
" 31	Patrick McKenna and others	100	Grey River.
" 31	James Joyce	100	Hatter's Terrace.
" 31	John Gill	50	Moonlight.
" 31	Michael Malone ..	90	Nelson Creek.
" 31	James H. Chester ..	100	Moonlight.
" 31	John McAuley ..	100	Ahaura River.
" 31	Alexander Doig and another	100	Big Creek.
" 31	Harvey Jones ..	52	Noble's Creek.
" 31	Andrew Doig ..	100	Snowy River.
" 31	George L. Tacon ..	72	Waipuna.
" 31	James Coombs ..	72	"
" 31	William D. Milne ..	100	"
" 31	" ..	100	Grey River.
" 31	William Hodgkins ..	100	"
" 31	Peter Donnellan ..	48	Nelson Creek.
" 31	Clement Parfitt ..	50	Deadman's Creek.
" 31	Duncan Campbell and another	100	Moonlight.
" 31	Ditto	100	"
" 31	Gustaf Hahn ..	100	Brown's Creek.
" 31	Peter Donnellan ..	80	Nelson Creek.
" 31	William Hodgkins ..	100	Ahaura Plains.
" 31	William D. Milne ..	100	"
" 31	Kate McIntyre ..	100	Brandy Jack's.
" 31	" ..	100	Granville.
" 31	John McIntyre ..	100	Brandy Jack's.
" 31	Clement Parfitt ..	50	No Town Creek.
" 31	Josiah Rogers ..	100	No Town.
" 31	John Jeffrie	60	"
" 31	" ..	100	"
" 31	Henry Weber ..	100	Nelson Creek.
" 31	John Kilkenny ..	80	Snowy River.
" 31	John O'Connor ..	16	"
" 31	Henry Weber ..	100	Nelson Creek.
" 31	James Irvine ..	100	Blackball.
" 31	William Donnellan ..	100	Nelson Creek.
" 31	J. O'Donnell	76	Bray's Creek.
" 31	Henry August Wicks ..	40	Red Jack's Creek.
" 31	William A. Sadler ..	56	Nelson Creek.
June 28	Michael Hurley ..	100	"
" 28	Edward Johnston ..	90	Big River.
" 28	Henry Neilsen ..	100	Baxter's Creek.
" 28	Peter Donnellan ..	40	Nelson Creek.
" 28	Alexander J. McIlroy ..	100	Deadman's Creek.
" 28	Theodore Skoglund ..	100	Grey River.
" 28	James H. Chester and another	100	"
" 28	Ditto	100	"
" 28	Peter Donnellan ..	64	Nelson Creek.
" 28	John Gough	100	Grey River.
" 28	Hugh Calder	100	"
" 28	James H. Chester ..	100	Moonlight Creek.
" 28	" ..	100	Caledonia Creek.
" 28	Henry William Kitchingham	100	Waipuna.
" 28	Samuel H. Thrower and another	100	Bell Hill.
" 28	George Neill	60	No Town Creek.
" 28	Charles Alexander Baker	100	Moonlight Creek.
" 28	"	100	"
" 28	Alexander McDonald ..	100	Craigieburn Creek.
" 28	William Rundle ..	50	Grey River.
" 28	William Donnellan ..	80	Nelson Creek.
" 28	Thomas William Ponsonby	50	Blackball Creek.
" 28	George S. Craig ..	50	Grey River.
" 28	Henry Augustus Wick	90	"
" 28	John Malloy	64	Deep Creek.
July 26	Charles L. Morice ..	100	Grey River.
" 26	Hugh Kennedy ..	100	Shellback Creek.
" 26	Henry Erickson ..	30	Grey River.
" 26	William A. Sadler ..	48	Kangaroo Creek.
" 26	Walter Irving ..	100	No Town.
" 26	" ..	100	"

Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acr.	
July 26	James Stevenson ..	100	No Town.
" 26	" ..	100	"
" 26	John Dick	100	"
" 26	"	100	"
" 26	Thomas Naismith ..	100	"
" 26	" ..	100	"
" 26	Henry Augustus Wick	50	Grey River.
" 26	Alexander Doig ..	100	Snowy Creek.
" 26	Michael Hurley ..	20	Callaghan's Creek.
" 26	" ..	20	"
" 26	Matthew Hurley ..	20	"
" 26	Matthias Willing ..	15	Waipuna Creek.
" 26	Max Kempa ..	100	Snowy Creek.
Aug. 23	William Rundle ..	50	Ahaura River.
" 23	James F. Bergen ..	45	Antonio's Flat.
" 23	John Falconer ..	100	Paparoa Range.
" 23	Thomas Craig ..	20	Grey River.
" 23	" ..	20	"
" 23	Edward Carton and another	100	Moonlight Creek.
" 23	James H. Chester and another	100	Snowy River.
" 23	Ditto	100	"
" 23	Michael Devereaux ..	100	Moonlight Creek.
" 23	James P. Doolan ..	60	Grey River.
" 23	Hugh Magill ..	45	"
" 23	Michael Devereux ..	50	Moonlight Creek.
" 23	Matthias Willing ..	100	Snowy River.
" 23	" ..	100	"
Sept. 27	Eleanor McLaren ..	10	McCarthy's Creek.
" 27	Abraham Jenkins ..	10	"
" 27	Thomas H. Latimer ..	75	Grey River.
" 27	John Donovan ..	100	Moonlight Creek.
" 27	Ernest J. McInroe ..	100	Grey River.
" 27	James Muir and another	100	Blackball Creek.
" 27	William King ..	100	Moonlight Creek.
" 27	James H. Chester and another	100	Nelson Creek.
" 27	Ditto	100	"
" 27	"	100	"
" 27	William Cummings ..	50	Roaring Meg Creek.
" 27	James H. Chester and another	100	Nelson Creek.
" 27	Ditto	100	"
" 27	Frederick Marshall and another	20	German Gully (Ahaura River).
Oct. 25	Ada Harrison ..	45	Grey River.
" 25	Harry Jones	68	"
" 25	Red Jack's Gold-dredging Company (Limited)	28	Red Jack's Creek.
" 25	Ernest J. McInroe ..	100	Grey River.
" 25	John Flynn and another	24	Blackwater Creek (Red Jack's).
" 25	James Hargreaves ..	84	Grey River.
" 25	" ..	57	"
" 25	John Gill	32	Snowy Creek.
" 25	Joseph Taylor ..	100	Grey River.
" 25	" ..	100	"
" 25	Clement Parfitt ..	50	Deadman's Creek.
" 25	John Turner	100	Moonlight Creek.
" 25	Joseph Scott	100	Paparoa Mountains.
" 25	James D. Harper ..	100	Half-ounce Creek.
Nov. 24	Frances Joliffe ..	60	Ngahere.
" 24	John Arbuckle ..	80	Grey River.
" 24	Robert Russell ..	48	"
" 24	" ..	56	"
" 24	Mary F. Gillin ..	100	Grey River.
" 24	James H. Chester ..	100	Big River.
" 24	Charles G. F. Morice	100	Grey River.
" 24	Henry Augustus Wick	40	Red Jack's Creek.
" 24	Henry William Young	60	Totara Flat.
" 24	George L. Tacon ..	50	Antonio's Creek.
" 24	George N. Lucas and another	20	Irishman's Creek.
Dec. 19	Hugh Magill	100	Grey River.
" 19	"	100	"
" 19	E. L. McLiskey and another	64	Kangaroo Creek.
Dec. 19	Patrick Regan ..	100	Grey River.
" 19	Alexander McDonald ..	100	"
" 19	James Marshall ..	37	Totara Flat.
" 19	Hugh Magill	100	Grey River.
" 19	"	100	"
" 19	James H. Chester ..	100	Big River.
" 19	Patrick Regan ..	100	Duffer's Creek.
" 19	James H. Chester ..	100	German Gully.
" 19	Joseph Ingles ..	100	Orwell Creek.
" 19	" ..	100	"

SPECIAL CLAIMS GRANTED by the WARDEN at AHAURA during the Nine Months ending 31st December, 1900.

Date of Grant.	To whom granted.	Area.			Locality.
		A.	R.	P.	
1900.					
April 26	Orwell Creek Gold-dredging Company (Limited)	17	3	27	Ahaura Survey District.
" 26	Patrick Ruane	20	0	0	Callaghan's Creek.
" 26	John Gough	20	0	0	"
" 26	John Craig	20	0	0	"
" 26	Michael Rogers and others	15	0	0	Blackball.
May 31	Henry Neilsen	48	2	8	Mawheranui Survey District.
" 31	Golden Banner Gold-dredging Company (Limited)	100	0	0	Mawheraiti Survey District.
" 31	H. Neilsen and another	94	0	32	Waiwhero Survey District.
" 31	Ford's Creek Gold-dredging Company (Limited)	75	1	9	Mawheranui Survey District.
" 31	John Turner	29	2	36	Waiwhero Survey District.
" 31	Hugh Allison	10	0	0	Blackball.
" 31	Patrick O'Brien	20	0	0	Gow's Creek.
" 31	"	20	0	0	"
" 31	"	20	0	0	"
" 31	"	20	0	0	"
" 31	"	20	0	0	"
June 28	Einar Erickson	77	2	0	Ahaura Survey District.
" 28	Waipuna Gold-dredging Company (Limited)	99	1	18	Mawheraiti Survey District.
" 28	Henry Watterson	100	0	0	Ahaura Survey District.
" 28	Orwell Creek Gold-dredging Company (Limited)	100	0	0	"
" 28	Hugh Calder	61	0	38	"
" 28	Yong Mock and others	12	0	0	Red Jack's Creek.
" 28	Hugh Magill	11	0	0	Grey River.
" 28	James O'Brien	15	0	0	Nelson Creek.
" 28	Hugh Magill	17	0	0	Grey River.
July 26	William Rundle	59	3	18	Mawheranui Survey District.
" 26	Robert Currie	96	1	27	Ahaura Survey District.
" 26	Gilbert Winslow	91	1	20	Mawheraiti Survey District.
" 26	Henry Neilsen	88	1	20	Mawheranui Survey District.
" 26	"	87	0	4	"
" 26	Hugh Magill and another	99	0	7	"
" 26	Edward Henry Scott	10	0	0	Bell Hill.
" 26	Michael Hurley	6	0	0	Little Callaghan's Creek.
" 26	James O'Brien	12	0	0	Ngahere.
Aug. 23	Pactolus Gold-dredging Company (Limited)	68	0	27	Mawheranui Survey District.
" 23	Edward Murphy and another	96	0	10	"
" 23	Henry Calder and another	98	0	6	"
" 23	Henry A. Wick	66	0	34	"
" 23	Mosquito Gold-dredging Company (Limited)	77	0	0	Ahaura Survey District.
" 23	Henry A. Wick, jun.	11	0	0	Red Jack's Creek.
" 23	Aldinga Gold-dredging Company (Limited)	11	0	17	Nelson Creek.
" 23	Victory Gold-dredging Company (Limited)	4	0	0	"
Sept. 27	Pactolus Gold-dredging Company (Limited)	96	0	38	Mawheranui Survey District.
" 27	Joseph Taylor	99	1	12	"
" 27	Maurice Doolan	99	3	24	Mawheraiti Survey District.
" 27	Thomas William Ponsonby	100	0	0	Waiwhero Survey District.
" 27	James Marshall	73	2	0	Mawheraiti Survey District.
" 27	Joseph Shrives	85	0	0	Mawheranui Survey District.
" 27	Ralph Raynor	99	0	26	"
" 27	Red Jack's Gold-dredging Company (Limited)	25	0	0	"
" 27	Waipuna Creek Gold-dredging Company (Limited)	29	1	8	Mawheraiti Survey District.
Oct. 25	James Patrick Doolan	98	2	24	"
" 25	Raphall Squarise and another	99	3	22	Mawheranui Survey District.
" 25	Henry Crust and another	99	3	23	"
" 25	Robert Currie	94	2	10	Mawheraiti Survey District.
" 25	Henry D. Reynolds	96	2	0	"
" 25	Henry A. Wick	100	0	0	Mawheranui Survey District.
" 25	Joseph Scott	99	3	24	"
" 25	Blackwater River Gold-dredging Company (Limited)	84	0	20	Mawheraiti Survey District.
Dec. 19	John Ross	79	1	5	Mawheranui Survey District.
" 19	John Giesking	95	0	9	Mawheraiti Survey District.
" 19	Thomas Magee	44	3	9	Mawheranui Survey District.
" 19	Henry A. Wick	80	0	10	"
" 19	"	99	0	0	"
" 19	William Cummings	41	2	24	Waiwhero Survey District.
" 19	Michael Malone	53	2	17	Mawheranui Survey District.
" 19	Edward Murphy	60	3	0	"
" 19	Red Jack's Gold-dredging Company (Limited)	33	0	0	"
" 19	George S. Cray	30	2	26	"
" 19	William Cummings	89	2	0	Mawheraiti Survey District.
" 19	Hugh Magill	98	3	26	"
" 19	Claughessey's Freehold Gold-dredging Company (Limited)	38	3	34	Ahaura Survey District.
" 19	Frank Sace and another	100	0	0	Mawheraiti Survey District.
" 19	John F. Delaney	100	0	0	Mawheranui Survey District.
" 19	James Hargreaves	41	1	8	Mawheraiti Survey District.
" 19	Arthur Dunn	63	0	0	Ahaura Survey District.
" 19	George Bitera	100	0	0	Waitahu Survey District.
" 19	Hugh Calder	20	0	0	Ahaura River.
" 19	Arthur Dunn	20	0	0	"
" 19	Callaghan's Creek Gold-dredging Company (Limited)	18	0	0	Callaghan's Creek

DISTRICT OF REEFTON COURT.

From the opening of the district to the 31st March last 878,901 tons of quartz has been crushed, from which 571,767 oz. of gold has been obtained, representing a value of £2,246,579, out of which £676,718 has been distributed in dividends. The total amount of alluvial gold for the same period is approximately estimated at 143,268 oz., representing a value of £533,701. The total production of the district is, as far as can be ascertained, 715,035 oz. of gold, of a value of £2,780,280.

I submit the following table showing the calls made, dividends declared, &c., by the various companies in the district during the year:—

Gold Returns, &c.

Company.	Calls.	Dividends.	Quartz crushed.	Yield of Gold.	Value.
	£ s. d.	£	Tons.	Oz. dwt. gr.	£ s. d.
Progress Mines	..	27,500	54,189	20,547 12 20	84,282 15 7
Consolidated Goldfields of New Zealand:					
Golden Fleece	..	..	5,628	3,629 13 15	13,465 7 11
Wealth of Nations	..	..	5,058	2,028 6 13	7,540 6 11
Big River	2,400 0 0	..	243	167 17 0	679 1 11
Golden Lead	513 4 7	..	..	..	..
Lord Edward	100 0 0	..	..	..	..
New Scotia	1,800 0 0	..	*	393 1 18	1,269 2 2
No. 2 Big River	50 0 0	..	..	..	..
Snowy Creek United	794 11 8	..	139	46 15 23	173 16 0
Keep-it-Dark	..	5,000	11,962	2,715 12 12	10,766 1 3
" (cyanide process)	..	..	†	1,572 1 20	4,902 2 3
Kirwan's Reward	..	2,800	2,619	2,591 13 7	10,328 12 10
Victoria Range	166 13 4	..	..	..	..
New Inkerman Mines	..	..	2,736	204 17 9	819 9 6
Private company—Last Chance	..	..	44	81 12 12	330 11 7
	5,824 9 7	35,300	82,618	33,979 5 5	134,557 7 11
Dredging Companies—					
A1	6,700 0 0	..	..	..	..
Reeves's Proprietary	3,680 0 0	..	..	162 0 8	629 17 3
Alluvial gold	..	..	..	2,814 4 21	11,357 13 8
Totals	16,204 9 7	35,300	82,618	36,955 10 10	146,544 18 10

* From 1,800 tons tailings by cyanide process. † From 8,849 tons tailings by cyanide process.

The following statement will show the comparative returns from the mines in the district for the past twenty-one years, ending the 31st March of each year:—

Year.	Calls made.	Dividends declared.	Quartz crushed.	Yield of Gold.	Value of Gold.
	£ s. d.	£	Tons.	Oz. dwt. gr.	£ s. d.
1880–81	10,218 17 6	19,650	25,926	17,597 14 10	68,630 13 10
1881–82	25,504 3 4	37,643	14,894	20,154 0 0	78,600 12 0
1882–83	61,345 0 0	32,600	18,928	19,194 0 0	74,856 12 0
1883–84	49,456 0 0	16,500	23,433	16,547 0 0	64,533 6 0
1884–85	29,333 0 0	34,100	34,349	23,997 0 0	93,588 6 0
1885–86	24,565 0 0	14,500	27,198	14,591 0 0	56,904 18 0
1886–87	21,596 0 0	33,450	23,930	21,143 0 0	83,171 15 5
1887–88	30,432 0 0	17,550	24,403	16,775 0 0	66,030 11 5
1888–89	38,919 0 0	16,688	28,564	18,663 0 0	72,720 18 0
1889–90	27,531 0 0	18,250	32,394	17,780 0 0	69,676 12 1
1890–91	20,404 0 0	27,325	39,643	23,347 0 0	91,998 8 10
1891–92	25,956 0 0	30,743	35,562	23,390 0 0	92,885 5 1
1892–93	18,800 0 0	16,900	37,693	20,171 0 0	80,894 5 1
1893–94	14,350 0 0	18,832	34,518	18,413 0 0	73,752 14 11
1894–95	10,153 0 0	11,012	26,603	13,426 10 0	53,509 5 1
1895–96	8,418 0 0	25,925	29,816	22,025 0 0	87,935 18 4
1896–97	9,033 6 8	4,900	13,270	8,365 4 20	33,824 7 1
1897–98	7,859 3 4	50	9,751	4,266 7 1	18,253 7 3
1898–99	5,920 6 8	900	42,305	21,487 18 15	87,587 1 0
1899–1900	10,747 8 9	47,050	58,277	26,693 3 18	108,455 17 8
1900–1901	5,824 9 7	35,300	82,618	33,979 5 5	134,557 7 11

The following account of the work performed, &c., in the principal mines will give some idea of the state of the mining industry in this district :—

Keep-it-Dark Company, Crushington.—The company has been steadily at work during the year sloping out quartz from Nos. 2 and 3 levels, about an equal quantity of ore being taken from each level. Development-work has been attended to by extending the different levels. A block of quartz 50 ft. in length and 5 ft. thick has been disclosed in the north end of No. 2 level. The extension of No. 3 level has disclosed upwards of 50 ft. of reef, with an average width of between 5 ft. and 6 ft. The length of reef now driven on in No. 3 level is 292 ft. The ore treated during the year has been of low grade, but owing to economical and scientific treatment it has proved profitable. The output of stone treated for the year was 11,962 tons, which with 8,849 tons of tailings treated under the cyanide process yielded 4,287 oz. 14 dwt. 8 gr. of gold, valued at £15,668 3s. 6d., out of which £5,000 was disbursed in dividends. The total output of the mine has been 148,773 tons of quartz, from which has resulted 75,902 oz. of gold, valued at £293,730 7s. 3d., out of which dividends to the extent of £119,416 13s. 4d. have been distributed.

Golden Lead Company, Merrijigs.—Early in the year the driving of the low-level tunnel, which had been driven 1,700 ft, was discontinued. A new level, known as No. 3, was started at the north end of the claim, about 120 ft. perpendicular below No. 2 level. This level has been driven about 370 ft. When 150 ft. in, a rich gold-bearing leader was struck, and continued along the drive for 70 ft. In the remaining 150 ft. of driving the ground has been broken. Occasionally rich gold-bearing lumps of stone were met with, but no defined lode. The nature of the ground has changed from what it was in the upper workings, a slate formation, which is favourable for stone, taking the place of sandstone, which prevailed in the upper level. It is intended to prosecute the driving of this level, with a view of intersecting the rich run disclosed in the western drive of No. 2 level.

Snowy Creek United, Snowy Creek.—The tributers put through one or two small crushings of stone obtained from the north winze, but the results were not satisfactory. The company bought out the tributers' battery, plant, &c., and commenced prospecting operations from same winze, and had a couple of small trial crushings. In consequence of the heavy expenditure in hauling from the winze, operations here were temporarily suspended. It is contemplated at an early date to complete the construction of water-race for winding, and then prosecute development of mine from the main shaft. The reefing country opened up so far has a promising appearance, and hopes are entertained of finding a payable lode.

Kirwan's Reward Company, Victoria Range.—The erection of the battery and aerial tramway was not completed until June last. After working a fortnight it was found necessary to make several alterations to the aerial tramway, to enable the buckets to properly deliver the peculiar kind of quartz-rubble which is being treated. This took nearly a month to accomplish, and it was virtually August before everything was in full working-order. Since then the battery and aerial tramway have worked splendidly, and 2,619 tons of quartz and rubble have been crushed, yielding 2,591 oz. 13 dwt. 7 gr. of gold, of the value of £10,328 12s. 10d. This return has enabled the company to pay off £2,000 of liabilities for plant, &c., and pay two dividends of 6s. each, amounting to £2,800. The stuff being treated consists of loose quartz and rubble lying on the surface of the ground, and, as the whole of the surface is being stripped, it is highly reasonable to suppose that the solid reef from which this quartz and rubble has been shed will be disclosed. A crosscut tunnel has been extended upwards of 200 ft in a north-easterly direction, about 200 ft. below the previous deepest workings, and is now going through what appears to be solid country.

Victoria Range Company, Victoria Range.—This is a prospecting company. Several outcrops of stone occur on the property owned by the company. On the surface the stone is barren, or very nearly so. The company propose driving a tunnel 1,000 ft. in length to intersect these lodes at a depth of from 1,000 ft. to 1,200 ft., or thereabouts, with a hope that the character of the stone may change and become payable. A contract for 500 ft. has been let, and is now being driven.

New Inkerman Mines, Merrijigs.—The company having thoroughly prospected their mine and proved the existence of large bodies of ore, with the view to ascertaining if it would pay to handle on a large scale, the old battery was taken down and re-erected, and a quantity of ore sent to the battery and treated. 2,763 tons of stone was crushed for a return of 204 oz. 17 dwt. 9 gr. of gold, valued at £819 9s. 6d. During the year sinking was continued below the low-level tunnel, and the winze is now down over 100 ft., on fairly good stone. The total amount menced. In order to thoroughly test the ore-bodies, a total of 722 ft. of stopes were opened and of crosscutting for the year was 192 ft., driving on the line of reef 273 ft., and uprising 131 ft. A new battery-site on the Inangahua River has recently been granted to the company, and it is reported the company intend erecting a large crushing plant, with all the necessary gold-saving appliances.

New Scotia Company, Merrijigs.—In this company are now combined what were formerly known as the Scotia, Gallant, Happy Valley, and Sir Francis Drake Mines. Immediately after acquisition of the property, the company erected a cyanide plant to treat an accumulation of tailings of the former proprietary, and also future products. The plant consists of three steel ore-tanks, each 21 ft. 6 in. in diameter and 5 ft. deep, and capable of treating 50 tons of tailings each; two sumps, each 4 ft. deep (one 18 ft. diameter and the other 12 ft. 6 in.), together with extractor-boxes, piping, pump and water-wheel for lifting the sand into the ore-vats. The cost of the plant was £1,000. They have been at work since October last, and have treated 1,800 tons of old tailings for a return of 393 oz. 1 dwt. 18 gr. of gold, valued at £1,269 2s. 2d. Operations in the mine were commenced at the beginning of this year. In the Sir Francis Drake section the shaft was freed of water, and No. 1 level repaired up to the face, and a winze was sunk to a depth of 50 ft. on reef showing in the north end of that level. The reef, however, was found to live down

only 30 ft. At the smithy level a crosscut was driven for 60 ft., but without anything of value being found. The country in the face of No. 1 level showing good indications, it has been decided to extend this north. In Gallant section the level from the main road has been repaired and retimbered throughout for 340 ft., leaving 90 ft. to complete to reach the line of reef. The road to the tip-head for a distance of 260 ft. has been renewed. In Scotia Creek a dam has been erected for conserving water for cyanide plant. The poppet-heads over main shaft and all other surface-works have been repaired preparatory to carrying on mining operations on the various lines of reef.

Big River Company, Big River.—During the year 243 tons of stone was won from the mine, which produced 167 oz. 17 dwt. of melted gold, of the value of £679 1s. 11d. Early last year prospecting-work was in progress in No. 6 level, and two crosscuts were being driven. In March, 1900, the reef was cut in one of these drives to the north of former workings. This block was about 20 ft. in length, and on the level the quality of the stone appeared to be equal to the usual average of the mine, but upon being stoped up it was found to be poorer. As the reef-track in No. 6 showed promisingly, the driving of the level to the north-west was continued, and 120 ft. driven, but nothing payable was found. A winze was sunk on the block mentioned to a depth of 30 ft., but the reef did not live down. Prospecting crosscuts were driven in this level to the westward. A large amount of work has been done on stone in No. 1 level, and in the intermediate level underneath. Recently, rising and stoping operations have been carried on on stone above No. 2 level; the reef was small, and at last got too broken to follow. At present the only work in progress in the mine is extending a crosscut in No. 6 level in a north easterly direction, at which six men are employed.

No. 2 Big River Company, Big River.—This property is situated to the west and adjoining the Big River Mine. Work was commenced in May last, and consisted of extending a level that was then driven 70 ft. for an additional 400 ft. The level is 140 ft. lower than the surface, and during its progress several promising leaders of quartz were cut, but nothing of any value or of a permanent character was disclosed. A large reef was then found on the surface to the east of the present drive, and which carried a little gold. A crosscut from the level is now in progress to endeavour to cut this reef at a lower level and ascertain its value there.

Mr. E. W. Spencer, engineer of the Progress Mines and Consolidated Goldfields of New Zealand, has supplied me with the following information concerning the claims under his charge:—

Progress Mines.—Development-work, comprising 3,011 ft. of driving and crosscutting and 913 ft. of sinking and rising, has resulted in the opening up of a large tonnage, so much so that the ore in reserve to-day exceeds that in sight at the corresponding period of last year by some 21,000 tons, besides which the mill has been supplied with nearly 55,000 tons. By mining and milling a greater tonnage than during 1899, it is satisfactory to note that the cost has been reduced considerably, every ton of quartz being mined, milled, and treated for 1s. 9·696d. less than during the preceding year. Developments were carried on in a general manner all over the eastern side of the mine on levels Nos. 1, 2, 3, 7, 8, 9, and 10, besides which the shaft has been sunk from No. 9 to No. 10, a vertical distance of 150 ft., and an excavation made for the sump. The total distance sunk was 187 ft., the present depth of shaft being 1,286 ft. The transportation by aerial line has given very little trouble since the lock-coil ropes were put in on the loaded side. Several sections on the return side have been renewed with portions of the original rope, and everything is in a good state of preservation. The cost of transportation has been reduced to 4·556d. per ton milled. 54,189 tons of quartz has been milled during the period under review, yielding 19,941 oz. 5 dwt. 19 gr. bullion, valued at £82,553 9s. 5d.; and 909 tons of concentrates were produced, some of which were chlorinated, the remainder being shipped to New South Wales for smelting, the reason for this being the refractory nature of the concentrates. Before shipping, the material is all roasted, by which process a reduction of about 45 per cent. is made in weight, which lessens freight charges very considerably, also the treatment-charges at the other end. In the cyanide plant 6,049 tons of old accumulated tailings have been treated, yielding 606 oz. 7 dwt. 1 gr., valued at £1,729 6s. 2d. The percentage extraction has not come up to expectations, and greater trouble has been experienced with the refractory matter than was anticipated by the result of earlier experiments. However, by varying the process slightly, the company still look for better results from this source. The cost per ton treated is also slightly in excess of the original estimate, being practically 4s. per ton, of which cyanide accounts for 2s. At an early date it is hoped to start prospecting the eastern ground, in the neighbourhood of the old Globe shaft, from the surface down. To do this it will be necessary to instal a hoist, which is now lying idle, at the old Globe shaft. The ground out in this direction looks very favourable, and appears to offer every inducement for prospecting operations, having some well-defined outcrops on surface on which but little work has been done. The County Council are now regrading and widening the county track into a 10 ft. dray-road; as soon as this is complete, work will be commenced in earnest at this shaft.

Welcome Company.—Attention has been confined to making the connection between No. 5 level, Welcome, and the low level, Specimen Hill, from which we drove back a total distance of 1,153 ft. south; then crosscut 120 ft. west to get under the winze, when by rising vertically the connection was made. All attempts, so far, to trace the stone down to the low level have proved futile, and now nothing remains to be done but pull out the stone.

Just-in-Time Shaft.—After doing a considerable amount of exploratory work down on the 400 ft. level it was decided to cease work, as the prospects were not encouraging. The mine has since been let on tribute to a party of seven men, who repaired the old Reform level for nearly 900 ft., and did a considerable amount of work on other drives, and then abandoned it. The shaft is again full of water.

Wealth of Nations.—A short *résumé* of the work done in the Wealth of Nations is as follows: The 700 ft. level has been opened up for a distance of about 440 ft., exposing a good reef for nearly the whole length, a winze put down on stone to the 800 ft. level, and the shaft sunk to the same depth, with additional sump-room. The 800 ft. level, north and east, is now being pushed as much as possible. The reef was encountered on this level at 142 ft. north of the shaft, at which point it was driven on to the eastern termination of the stone, and is now being pushed out north on a good width of reef. The total footages completed here during the year are 761 ft. driving and crosscutting, and 215 ft. of sinking and rising. Stoping commenced in December last in a general manner on the 500 ft., 600 ft., 700 ft., and more recently the 800 ft. level, the quartz from which, together with that produced from development during the year, amounting in all to 5,058 tons, has been milled yielding 1,684 oz. 1 dwt. 12 gr. bullion, valued at £6,575 15s. 5d. 2,129 tons of coarse sands have been cyanided, yielding bullion to value of £964 11s. 6d. The surface-works have been considerably altered during the year, the twenty-stamp battery having been overhauled and readjusted, and the 50 ft. diameter water-wheel substituted by a Pelton to drive the battery. An elevating-wheel, 18 ft. diameter, now lifts the pulp up 13 ft., and delivers it into a classifying-box, from which the slimes flow away over twelve concrete tables, 15 ft. by 12 ft., on which the pyritic slimes separate out. The coarse sands pass on over two Wilfley tables, on which the concentrates are extracted, the sands themselves flowing on down a launder into the cyanide-tanks, of which there are six, and two sumps. The capacity of the water-race has been somewhat increased to meet the requirements, and the whole of the reduction-works has been lit with electric light by a Crompton dynamo. The capacity of the mill being about 1,100 tons per month, it is expected that this quantity will be treated steadily during the ensuing year.

Golden Fleece Group.—A large amount of work has been done on this property during the year, comprising 2,368 ft. driven and crosscut, and 598 ft. raised. The most important work was the completion of the shaft, which had to be carried up about 35 ft. above the No. 6 level, or 495 ft. in height above the low-level tunnel. When this was being done chambers were being cut at Nos. 9, 8, 7, and 6 levels, besides a crosscut at the latter to connect the shaft with the engine, which had to be installed in a chamber 17 ft. by 24 ft. by 11 ft. This chamber had to be connected to the head of the shaft with an inclined tapered rope-way. The assembling of the engine-parts was put in hand during October, and the engine connected to the compressor at the battery by a pipe-line, the first 6,666 ft. of which is a 5 in. pipe, the remaining 1,815 ft. consisting of 3 in. and 2½ in. pipe. Whilst this work was in hand the various levels and raises were being extended from the crosscut both north and south on Nos. 9, 8, and 7 levels, the same being connected to one another by rises where necessary. Stoping started at the latter end of October, and the mill commenced running early in November, since when it has been running continuously, making good time. The tonnage crushed to date is 5,628 tons, yielding 3,203 oz. 13 dwt. 7 gr. bullion, valued at £12,261 4s. 3d. 3,380 tons of sands have been cyanided, yielding bullion to the value of £1,204 3s. 8d. Also some 19½ tons of concentrates have been saved, a portion of which has been shipped to the smelters for treatment. The whole plant is in excellent order and doing good work.

General.

I am glad to be able to state that the prediction made in last report—that the then coming year would see an increased output of gold—has been verified, and I have every confidence that the current year will see a still further increase. The dredging industry, which is so prominent in other portions of my district, is little in evidence in this, as there are but two dredges at work in it—viz., the A1 and Reeves's Proprietary; the former has only been at work a fortnight, the latter has been at work some months.

I have to thank managers and directors of companies for information enabling me to frame this report.

LIST of PROSPECTING LICENSES GRANTED by the WARDEN at REEFTON from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area granted.	Locality.	Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acr.		1900.		Acr.	
April 11	J. H. Morris and another	20	Lankey's Creek.	June 15	Lewis Cohen	100	Waitahu River.
" 11	J. Magnus	100	Slab Hut Creek.	" 15	N. Thomas	50	Soldier's Flat.
" 27	R. Cairns	25	Devil's Creek (left-hand branch).	" 15	W. Irving	12	Little Grey River.
				" 15	C. Ketterer	34	Coal Creek.
" 27	J. Pattinson	84	Little Grey River.	" 15	"	34	"
" 27	G. McLennan and another	12	Snowy Creek.	" 15	A. E. Clayden ..	40	Inangahua River.
				" 15	J. H. McClymont ..	40	Inangahua River.
" 27	G. Bannan	60	Big River.	" 15	J. O'Regan	100	"
" 27	T. Hubert Lee ..	80	Slab Hut Creek.	" 15	J. Brazil	100	"
" 27	J. McMahon	100	Inangahua River.	" 29	C. Wolf	100	"
" 27	A. W. Tilley ..	100	Snowy Creek.	" 29	M. Sheedy	100	Painkiller Flat.
" 27	J. Gill	100	"	" 29	C. Tilburn	100	McMurray's Creek.
May 11	T. Vaughan	70	Big River.	" 29	"	100	"
" 11	J. Williams	100	Big Landing Creek.	" 29	"	75	Maruia River.
" 11	"	100	Little Landing Creek.	" 29	"	75	"
" 11	J. S. Wilson	100	Inangahua River.	" 29	"	75	"
" 11	M. Murray	24	Stoney Creek.	" 29	"	75	"
" 11	D. Flynn	70	Snowy Creek.	" 29	"	75	"
" 11	R. Cairns	99	Devil's Creek.	" 29	"	100	Fletcher's Creek.
" 11	A. Collings	80	"	" 29	"	100	"
" 11	J. H. Howell ..	100	Big Landing Creek.	July 13	W. Irving	50	Frying-pan Creek.
" 11	J. Scarlett	100	Inangahua River.	" 13	J. W. Easson and another	100	Burke's Creek.
" 11	H. Wicken	100	"				
" 11	T. Eddy	100	"	" 13	Ditto	100	"
" 11	W. Grady	100	"	Sept. 28	T. Hampson	32	Devil's Creek.
" 11	C. Ketterer	16	Coal Creek.	" 28	Golden Lead Company	35	Merrijigs (quartz).
" 11	"	16	"	Oct. 12	M. Wynn	30	" "
" 11	G. J. Willis	80	Landing Creek.	" 12	H. Betts	100	Maruia River.
" 11	M. Lonbere	24	Big River.	" 26	J. Gill	32	Big River.
" 11	"	24	"	" 26	"	80	"
" 11	T. W. Tymons ..	24	"	" 26	G. J. Willis	80	Bourke's Creek.
" 11	E. C. Craighead ..	30	Grey River.	" 26	W. Kirwan	100	Victoria Range (quartz).
" 11	J. McMahon	60	Boatman's Creek.				
" 11	T. Hampson	63	Devil's Creek.	" 26	Golden Lead Company	20	Merrijigs (quartz).
" 11	R. Cairns	42	"	Nov. 6	P. N. Kingswell ..	100	Victoria Range (quartz).
" 11	J. Duncan and another	100	Waipuna Creek.				
" 22	G. McLennan and another	100	Blackwater Creek.	" 6	Reeves' Proprietary Company	20	Boatman's Creek.
" 22	P. J. McLean ..	100	"	" 6	Ditto	20	"
June 15	H. McCloskey ..	100	Inangahua River.	" 6	"	12	"
" 15	T. W. Tymons and another	50	Casolis Creek.	" 23	T. Hubert Lee ..	60	Maruia River.
				" 23	J. Steele	30	Victoria Range (quartz).
" 15	Ditto	50	"				
" 15	G. Batira	65	Little Grey River.	" 23	T. Pattinson	60	Slab Hut Creek.
" 15	J. H. Morris and another	100	Waitahu River.	" 23	R. E. Bellamy ..	30	Boatman's Creek.
				Dec. 7	H. Cooper	74	Victoria Range (quartz).

LIST of SPECIAL CLAIMS GRANTED AT REEFTON from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area. A. R. P.	Locality.
1900.			
May 1	C. Moncrieff	99 0 23	Waitahu Survey District.
" 1	G. B. Shepherd	50 0 0	Reefton Survey District.
June 1	R. Dunphy	62 3 15	Waitahu Survey District.
" 1	C. Clifford	99 3 26	"
July 1	W. Cochrane	100 0 0	Reefton Survey District.
" 1	"	100 0 0	"
	Unsurveyed.		
1900.			
June 1	M. Twomey	20 0 0	Little Redman's Creek.
July 1	J. Mannix	10 0 0	"
Aug. 1	J. Morris and others	20 0 0	Merijigs.
" 1	J. Moore	10 0 0	Frying-pan Terrace.
Sept. 1	J. Rees	8 0 0	Blackwater.
Oct. 1	Milner and Sinclair	20 0 0	Bourke's Creek.

DISTRICT OF WESTPORT COURT.

Addison's.

The *Golden Sand Company* have been working intermittently during the past twelve months. A good deal of time has been devoted to further prospecting. Additions have been made to the plant and other works constructed which are likely to render future mining operations more successful.

Neil and party have been employed for some time past in driving a new tunnel to give them more fall. It will be 1,600 ft. long when completed and boxed throughout, and at the present time is about half finished A new water-balance will also be erected upon this claim.

Addison's Long Tunnel Gold-mining Company (Limited.)—This company has been steadily at work for the past twelve months for fairly profitable returns, the shareholders having been paid 4s. per share in dividends during this period. The inside lead has been worked as far south as fall will allow; therefore operations have been undertaken on the outside or stony lead which, unfortunately, so far has only just paid working-expenses. However, farther south this lead improves, as shown by prospects that can be obtained from the face of old workings. The claim is worked with a deep tail-race tunnel one mile and a quarter long, and a water-balance lift for elevating hopperings. Periodically the tunnel has to be extended, and this rig moved further up the lead, as a result of the fall running out. The gold saved at this claim is of a very fine character, and from prospects taken from the tailings very little seems to be lost. A certain amount of scaly gold is found lying on the blue reef on the inside edge of the lead. This is saved in ripples at the head of the boxes. The company have been sluicing with satisfactory results. They have recently opened a face in another part of the claim, and found payable wash-dirt there also.

McCann and party have been engaged for some time past in opening up a new claim on the terrace east of Addison's Road. Their first intention was to reach the lead by an open-cut, sluicing the material into the creek below. After operating in this way for some time the ground became too hard to sluice away, and they then started a drive from the end of the open-cut.

The *Virgin Flat Company* have put in a very large amount of work during the year, and have completed all preparatory work. The main water-race, which contains a considerable length of 2 ft. piping and an extensive fluming, has been finished. The tunnel tail-race has also been completed. It is timbered throughout, and boxed 3 ft. 6 in. wide. During the past twelve months the following works have been completed by the company: The head-race to Totara River, which carries forty-three heads of water, has been finished. This is 3 miles 10 chains in length, and consists of 61 chains tunnelling and 2 miles 29 chains of open ditching. The pipe-line has been laid down, the pipes having been made on the ground. The main line of piping is 24 in. in diameter and 43 chains in length. The tail-race tunnel has been driven a distance of 46 chains, and lined throughout with timber. The tables, which have a spread of 150 ft., have been erected, and sluicing operations started on the 27th March last, with one nozzle. The whole of the timber used in construction-works was cut at the company's sawmill (which is driven by a Pelton wheel) on the ground. During the past twelve months an average of twenty men has been employed, but until the working-paddock is further extended six men only can be profitably engaged. One shift is worked at present, but it is proposed to work two shifts of eight hours each at an early date.

Karamea.

Four special claims in the Karamea River, held by Messrs. Cooke and Johnson, were prospected by the late Mr. John Low and others, fully £150 having been expended in this way. The wash was tested by shafts sunk to the water-level, and averaged about 5 gr. to the yard. Arrangements have been made to place these areas on the London market, together with others held under prospecting license.

Stony Creek.

The *Stony Creek Dredging Company* have spent about £100 in prospecting with a spoon dredge, and it is understood that the returns were excellent. I am informed that the company's engineers—Messrs. Cutten Brothers—are now boring on the claim in order to ascertain the length of ladder required before designing a dredge for the company.

Britannia Gold-mining Company (Limited).—This company's mine at Stony Creek, Waimangaroa, on the Republic line of reef, has had a fairly successful year. Work has been confined to the eastern reef, 201 tons being mined and crushed for a return of 391 oz. melted gold; value £3 19s. per oz. Dividends to the amount of 1s. 4d. per share have been paid during the past year. The battery is at a high elevation, therefore the water-supply is intermittent; but, as another creek has lately been flumed on to the water-wheel, this trouble will be greatly lessened in the future. With a full supply of water the two-head Hendy battery can put through 30 tons per week, and it is otherwise a perfectly satisfactory machine. The reef now being worked shows every indication of continuing into the solid hill, and is going strongly underfoot at 90 ft. from the outcrop, and showing payable gold.

Waimangaroa.

Waimangaroa Gold-dredging Company.—This company's special claim is situate on the eastern side of the Westport–Mokihinui Railway-line, and contains 68 acres—30 of which are freehold land and the balance river-bed. The claim has been prospected by spoon dredge, boring, and by sinking a shaft on the freehold. Bottom was reached in this shaft at a depth of 26 ft. 6 in.; the wash averaged about 9 gr. The directors decided to sink one or more additional prospecting-shafts before ordering machinery, and the work is at present in progress. Two other special dredging claims, situated on the western side of the railway-line, have also been prospected by means of a spoon dredge. About £130 was spent in this, and good returns were obtained.

German Creek

Two special claims in this locality have been prospected with spoon dredges, with satisfactory results, and arrangements have been made to form a company to work them and other areas in the same vicinity.

Two special claims on the sea-beach opposite Birchfield have been fully tested by bores and sinking. Gold-bearing wash extended down 20 ft. below water-level, and is estimated to yield 1s. per yard.

Fairdown.

Island Creek Gold-dredging Company (Limited).—This claim is situated two miles beyond Fairdown Railway-station, and contains about 97 acres. It was taken up as a prospecting area last July. Having been tested at considerable expense, it was taken over by the Island Creek Company, and a special claim-license obtained in lieu of the prospecting license. The company has made

good headway, and, although only eight or nine months have elapsed since they took over the claim, the dredge is almost ready to start operations. The want of a road has seriously retarded progress, and the company had to erect a tramway at considerable expense to run machinery, &c., to the claim.

Fairdown Gold-dredging Company (Limited).—This special claim of 89 acres is situated at Fairdown, and was purchased by the company about the end of last year. Contracts have been accepted for machinery to be delivered by the end of next June. Tenders are being invited for the construction of pontoons. A constant and ample supply of water from the Wareatea River has been secured. It is expected that this dredge will be working in seven months' time.

Wareatea Gold-dredging Company (Limited).—This company holds a special claim of about 97 acres, two miles beyond Fairdown. I understand the ground has been thoroughly and exhaustively prospected by boring and other means. Contracts have been let for the pontoons and machinery. The former are almost completed, and the latter is now being carted on to the claim. I anticipate that the dredge will be working in July or August next.

Wellington Gold-mining Company.—This company holds a special claim at the "old diggings." Early in the year ground-sluicing was commenced, after the expenditure of more than £3,000 in preliminary works. The results obtained at first were not altogether satisfactory, but I hear that more recent returns show a decided improvement. The water-supply has been found to be inadequate during dry spells, and steps are being taken to remedy this defect and to secure an adequate and continuous supply for sluicing purposes.

The two special claims known respectively as the Bendigo and Rochfort have been sold recently by the General Exploration Company to Mr. G. G. Munro, of Dunedin, who has since disposed of the Bendigo water-rights to Millikin and party, of Addison's, and the machinery to the Humphrey's Sluicing Company, of Hokitika.

The Rochfort Claim has been put in working-order again and sluicing recommenced. Fair gold is being obtained, with every prospect of a substantial improvement as the lead is opened out.

LIST of PROSPECTING LICENSES GRANTED at WESTPORT from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area granted.	Locality.	Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acr.		1900.		Acr.	
April 19	R. Johnson	20	Karamea.	June 6	John McGrath ..	100	Deadman's Creek.
May 2	James Bradley ..	90	Jones's Creek, Birchfield.	„ 6	Robert T. Watson ..	40	Mokihinui.
				„ 6	Thomas Scanlon ..	40	Oparara.
„ 2	H. R. Cooke and others	48	Addison's.	„ 6	„ ..	40	„
„ 16	Thomas Lister ..	93¼	Jones's Creek.	„ 20	„ ..	80	Karamea.
„ 16	Alfred Kearns ..	20	Buller River.	„ 20	Henry C. Greene ..	80	Addison's.
„ 16	Alfred Meager ..	20	„	„ 20	A. B. Lindop ..	100	Birchfield.
„ 16	Thomas Powick ..	60	Orawaiti River.	July 4	David T. Gibbard ..	80	Orawaiti.
„ 16	Harry Simpson ..	36	Karamea.	„ 4	„ ..	60	„
„ 16	„ ..	80	„	„ 4	Peter J. McKenna ..	80	North Beach.
„ 16	Frederick Bonifacio ..	100	Sergeant's Hill.	„ 4	Thomas Lister ..	80	Waimangaroa.
„ 16	Thomas Scanlon ..	90	Karamea.	„ 4	Peter J. McKenna ..	80	North Beach.
„ 16	„ ..	50	„	„ 4	David T. Gibbard ..	100	Fairdown.
„ 16	„ ..	50	„	„ 4	J. L. Blackmore and D. T. Gibbard	100	„
„ 16	„ ..	50	„				
„ 16	G. B. Ritchie ..	50	Buller River.	„ 4	W. Mackenzie ..	100	Stony Creek.
„ 16	„ ..	25	„	„ 19	D. T. Gibbard ..	100	Wareatea.
„ 16	Walter Rogers ..	32	Addison's.	„ 19	W. Mackenzie ..	100	Stony Creek.
June 6	R. T. Watson ..	50	Mokihinui.	Aug. 1	Robert T. Watson ..	40	Jones's Creek.
„ 6	„ ..	40	„	„ 1	„ ..	40	„
„ 6	Alexander Stitt ..	100	Karamea.	„ 1	David T. Gibbard ..	100	Addison's.
„ 6	Robert Falla ..	80	Buller River.	„ 1	„ ..	100	Sergeant's Hill.
„ 6	„ ..	40	„	„ 1	Alexander McKay ..	16	Cascade Creek.
„ 6	„ ..	42	Ngakawau.	„ 1	Addison's Long Tunnel Gold-mining Company (Limited)	48	Addison's.
„ 6	„ ..	80	Buller River.				
„ 6	„ ..	80	„				
„ 6	Thomas Scanlon ..	40	Karamea.	„ 18	David T. Gibbard ..	100	Fairdown.
„ 6	„ ..	40	„	„ 18	W. Mackenzie ..	97	Waimangaroa.
„ 6	„ ..	80	„	Sept. 5	Edward Hopkins ..	20	German Terrace.
„ 6	„ ..	80	„	„ 5	David T. Gibbard ..	100	Fairdown.
„ 6	„ ..	80	„	„ 19	Francis Beirne and David T. Gibbard	50	„
„ 6	G. B. Ritchie ..	25	Buller River.				
„ 6	George Taylor ..	20	Mokihinui.	„ 19	David T. Gibbard ..	100	„
„ 6	Alfred Hansen ..	72	Addison's.	„ 19	Charles Woodward ..	35	„
„ 6	„ ..	72	„	Oct. 3	Edward R. Issell ..	60	Karamea.
„ 6	Thomas Samuels ..	87	„	„ 17	The Wellington Prospecting Syndicate (Limited)	100	Orawaiti.
„ 6	Thomas Scanlon ..	40	Karamea.				
„ 6	Arthur Simpson ..	80	„				
„ 6	D. T. Gibbard ..	18	„	„ 17	Ditto	100	„
„ 6	„ ..	18	„	„ 17	C. A. Ulrich ..	100	Waimangaroa.
„ 6	„ ..	56	„	„ 17	„ ..	100	„
„ 6	J. M. Murray ..	100	„	„ 17	David T. Gibbard ..	20	Fairdown.
„ 6	„ ..	92	„	Nov. 2	Denis Collins and James Collins	20	Bradshaw's Terrace.
„ 6	Thomas Rogers ..	40	Addison's.				
„ 6	Robert Watson ..	40	Mokihinui.	„ 2	Walter McIntyre ..	50	Karamea.
„ 6	„ ..	40	„	„ 14	Alexander Stitt ..	80	„
„ 6	Graham Jackson ..	75	Karamea.	„ 14	„ ..	80	„
„ 6	David T. Gibbard ..	100	Fairdown.	„ 14	Walter McIntyre ..	50	Mokihinui.
„ 6	Walter Rogers ..	60	Blackwater.	„ 14	„ ..	50	„
„ 6	Christian L. Rasmussen	100	Little Wanganui.	Dec. 12	Robert Johnson ..	40	Karamea.
„ 6	James Colvin ..	50	Coal Creek.	„ 12	Herbert R. Cooke ..	50	Giles Creek.
„ 6	„ ..	50	„				

LIST of SPECIAL CLAIMS GRANTED at WESTPORT from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area granted.			Locality.
		A.	R.	P.	
1900.					
April 5	Charles Adalbert Ulrich	31	2	39	Ngakawau.
" 5	"	11	0	32	"
" 5	Edward Seager	20	0	0	Mokihinui.
" 11	Thomas McCann and others	10	0	0	Addison's.
" 19	Charles Adalbert Ulrich	29	1	0	Buller River.
" 25	Jeremiah Duggan and others	6	0	0	Bradshaw's Terrace.
May 16	Britannia Gold-mining Company (Limited)	7	0	0	Waimangaroa.
" 28	Charles Adalbert Ulrich	28	1	0	"
June 20	T. J. Jones and F. Clifford	20	0	0	Ngakawau.
" 20	J. M. Dennehy and others	19	0	0	Bradshaw's Terrace.
" 22	Wallace Mackenzie	21	3	22	Waimangaroa.
" 22	Wallace Mackenzie	17	0	0	"
July 1	Charles Adalbert Ulrich	64	0	0	"
" 4	Wallace Mackenzie	29	3	25	"
" 4	E. C. Kingswell	53	3	26	Mokihinui.
Aug. 3	Daniel O'Neill	89	2	0	Fairdown.
" 11	A. D. Bayfield	100	0	0	Cascade Creek.
" 15	Edward Trythall	66	2	0	Buller River.
" 15	Alexander Duncan	99	3	33	Fairdown.
" 15	C. E. Harden and J. Bishop	20	0	0	Addison's.
Sept. 5	Peter Halligan and others	9	3	9	"
" 5	Thomas Alexander	59	0	0	Mokihinui.
Oct. 2	Alexander Senior and others	41	1	0	Addison's.
" 17	Benjamin McPherson	96	0	26	Fairdown.
" 17	Edward Trythall	47	2	30	Waimangaroa.
" 26	Wallace Mackenzie	32	1	15	"
" 26	H. R. Cooke	67	0	16	Karamea.
Nov. 2	R. Johnson, jun.	84	3	0	"
" 2	"	57	2	30	"
" 28	Walter McIntyre	56	1	0	Buller River.
" 28	"	64	2	0	"
" 28	C. E. Harden and J. Bishop	94	3	39	Fairdown.
Dec. 13	H. R. Cooke	65	3	0	Karamea.
" 13	Wallace Mackenzie	91	3	32	Waimangaroa.
" 13	W. M. Bradley	97	1	24	Fairdown.
" 13	"	97	2	25	"

There were twelve special-claim licenses cancelled on surrender or forfeiture at Westport during the twelve months ended 30th April, 1901.

DISTRICT OF LYELL AND MURCHISON COURTS.

Dredging.

The year just ended has seen a good deal of activity displayed in dredging in this part of the district, and a considerable amount of ground has been taken up as special claims or under prospecting license. Practically the whole of the Buller River from Westport to the Hope—a distance of about eighty miles—has now been pegged out. On the Matakitaki River all available ground is now taken up, right from its junction with the Buller River to Horse Terrace—a distance of about twenty miles. On the Glenroy River, which is a tributary of the Matakitaki, two special claims and a number of prospecting licenses have been granted during the year. A number of prospecting licenses have also been granted in the Rotoroa and Maruia Rivers, both tributaries of the Buller. During the year 163 applications for ordinary mining privileges and thirty-four applications for special claims were dealt with at the Lyell Court, and the sum of £826 was received as goldfields revenue.

Old Diggings Gold-dredging Company.—This company has a claim of 76 acres, situated in the Buller River at Berlin's. They have purchased the Consolidated Company's dredge, which has been employed in the Buller River at Three-channel Flat, and are just now waiting for a rise in the river in order to float the dredge down to the claim. The ground has been prospected with very satisfactory results.

El Dorado Gold-dredging Company.—This company hold a special claim above the Old Diggings Company's ground, and are inviting tenders for the construction of a dredge.

Rocklands Beach Gold-dredging Company.—This company's dredge has only just started work, and no returns are yet available. The company hold a special claim of 100 acres immediately above the El Dorado Company's claim.

Welcome Gold-dredging Company and *Premier Gold-dredging Company.*—Both these companies are pushing on the construction of dredges on their claims as speedily as possible, and in both cases the pontoons will shortly be ready for launching. Both claims are situated between the Rocklands Beach Company's ground and Inangahua Junction.

Buller Junction Gold-dredging Company.—This company's dredge commenced operations a few weeks back, and has obtained good returns from the time of starting. The claim is situated near the junction of the Buller and Inangahua Rivers, and the dredge is now working about a quarter of a mile above the junction.

Consolidated Dredging Company.—This company's dredge has been employed at Three-channel Flat during the past year, but has not obtained very encouraging results, and the dredge has

recently been sold to the Old Diggings Gold-dredging Company. The company is now being voluntarily wound up.

Mokoia Gold-dredging Company.—This claim is situated at Three-channel Flat, about a mile above the Consolidated Company's ground. The dredge commenced operations in October, but had only been at work for a few days when a heavy flood carried it away and left it high and dry some considerable distance from the river. This unfortunate occurrence entailed a great loss to the company, as about three months were taken up in getting the dredge back to the water and executing necessary repairs. The dredge is now working again.

Feddersen Gold-dredging Company.—This company hold 97 acres on the Buller, about three miles below Lyell. The ground has been prospected, and good results are said to have been obtained. Tenders are to be called for very shortly for the construction of a dredge.

Buller Dredges Company (Limited).—This dredge has been working for some years on the Upper Buller, and is now about three miles above Fern Flat.

Four River Plain Gold-dredging Company.—This company have a claim of 100 acres, which is situated on the Buller River about a mile below the mouth of the Matakitaki River, and the same distance above the Buller dredge. The dredge has been in active operation for some months.

Kohikohi Gold-dredging Company.—This company have a special claim of 100 acres, 38 acres of which is freehold. It is situated on the Matakitaki River near Murchison, and about five miles up the river from its junction with the Buller. The pontoons have been completed some time, and the company expect to commence dredging in three or four months. At least half a dozen other companies have been formed, or are in course of formation, with the object of placing dredges on various parts of this river.

Alluvial.

About the usual amount of alluvial mining has been carried on in the district during the year, and no particularly rich finds have been reported. In the Maruia Mr. George Walker has a sluicing claim of 30 acres, and is said to be getting very good returns. Several other smaller sluicing claims are also being worked in the Maruia and Upper Matakitaki districts, and very fair returns are being obtained; while on the banks of the Maruia and Matakitaki Rivers a good few individual miners manage to make a living. On the Buller River alluvial mining is principally confined to the Chinese, a fair number of whom seem to be making a living. At White's Point—twelve miles up the Buller from Lyell—the Neville and Perkins Hydraulic Sluicing Company have acquired an extensive flat from the freeholders (Messrs. Neville and Perkins), and are bringing in forty heads of water from the Newton River with which to work the ground. About thirty men are now employed on the construction of the race. Close to this company's ground, and at the mouth of the Newton River, a special sluicing claim of 100 acres has been applied for, and also forty heads of water from Deep Creek; while at Fern Flat, six miles higher up the river, a Wellington syndicate have bought Mr. Digby Hunte's freehold with a view to carrying on sluicing operations on a large scale.

Quartz.

There is very little to report concerning this branch of the mining industry. The Alpine Extended Gold-mining Company let their mine on tribute to twelve of the workmen who, however, could not make wages, and gave it up. The mine is now closed, the company having obtained protection for one month, and are inviting tenders for driving ahead 300 ft. on No. 7 level. Kelly and party have got a very good leader claim on the old Tyrconnel lease, and are said to be doing well. Harrison and party have been working for some months on a leader in the old Golden Crown lease, but I am informed a recent crushing proved to it be too poor to warrant work being continued.

RETURN of PROSPECTING LICENSES GRANTED at the WARDEN'S COURT, LYELL, from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area granted.	Locality.	Date of Grant.	To whom granted.	Area granted.	Locality.
1900.		Acr.		1900.		Acr.	
May 10	Houston F. Logan ..	50	Matakitaki River.	July 12	Robert Gilmer ..	80	"
" 10	William R. Hunter ..	35	"	" 12	Elijah Bunn ..	32	"
" 10	George Walker ..	100	Buller River, Murchison.	" 12	Charles G. Morel ..	28	"
				" 12	" ..	50	Maruia River.
" 10	George van Belle ..	60	Matakitaki River.	" 12	" ..	40	"
" 10	John Gow	100	"				
July 12	Hugh Taylor ..	50	Inangahua River.	" 12	Charles E. Harden ..	40	"
" 12	Vincent Gibbens ..	60	Glenroy River.	" 12	" ..	40	Buller River, Fern Flat.
" 12	" ..	65	"				
" 12	Hector Bates Walker ..	60	Maruia River.	" 12	" ..	40	Buller River, Lyell.
" 12	" ..	60	"	Sept. 13	Houston F. Logan ..	73	Matakitaki River.
" 12	" ..	60	"	" 13	" ..	45	"
" 12	" ..	40	"	" 13	Alice Maud Gow ..	100	"
" 12	William J. Dillon ..	100	Glenroy River	" 13	Daniel James ..	30	"
" 12	James Colvin ..	40	Maruia River.	" 13	William T. Gilbert ..	40	Buller River, Owen Junction.
" 12	Frederick Junker ..	50	"				
" 12	Hugh Owen	80	Taylor's Creek.	" 13	" ..	40	Ditto.
" 12	Alfred Meager ..	40	Buller River, Longford.	" 13	George van Belle ..	20	Matakitaki River.
				" 13	Frederick Harrison ..	100	Manuka Flat, Lyell.
" 12	Alfred Kearns ..	40	Ditto.	" 13	Thomas Hubert Lee ..	25	Buller River, Junction.
" 12	" ..	40	"	Nov. 7	James Bailie ..	40	Buller River, Owen Junction.
" 12	James Stevenson ..	100	Matakitaki River.				
" 12	John Cullen ..	100	Buller River, Newton Flat.	" 7	" ..	40	Ditto.
				" 7	Henry David Abbott ..	70	Buller River, Newton Flat.
" 12	George Walker ..	65	Matakitaki River.				
" 12	" ..	25	"	" 7	Vernon Hill	40	Lyell.
" 12	" ..	60	"	" 7	David Rait	50	Matakitaki River.
" 12	" ..	65	"				

RETURN of SPECIAL CLAIMS GRANTED at the WARDEN'S COURT, LYELL, from the 1st April, 1900, to the 31st December, 1900.

Date of Grant.	To whom granted.	Area.			Locality.
		A.	R.	P.	
1900.					
May 10	George Walker	74	2	0	Buller River, Rocklands.
„ 10	Edward A. Cogan	32	4	0	„ Three-channel Flat.
„ 10	Robert Mark Aitken	50	0	0	Alpine Range, Lyell.
„ 10	James Stevenson	79	0	0	Buller River, Rocklands.
„ 10	Frederick Junker	46	3	0	„ Lyell.
„ 10	Thomas Joseph Malloy	53	0	0	„ Flaxbush.
July 12	George Walker	98	0	0	Buller River, Murchison.
„ 12	Thomas Bell	58	0	0	„ „
„ 12	Dugdale Walmsley	98	0	0	Matakitaki River.
„ 12	Edward Mills	46	2	0	„
„ 12	Alfred Anderson	34	3	37	„
„ 12	Buller Dredges (Limited)	63	3	32	Buller River, Murchison.
„ 12	„	65	3	0	„ „
„ 12	Uriah Hannah	10	0	0	Matakitaki River, Horse Terrace.
„ 12	John Kelly	16	0	0	Alpine Range, Lyell.
„ 12	Bernard P. McMahon	8	0	0	Buller River, Junction.
Sept. 13	Houston Francis Logan	15	0	0	„ Murchison.
„ 13	George Walker	29	3	37	Maruia.
„ 13	John McNeill	30	0	0	Alpine Range, Lyell.
Nov. 7	Henry Cooper	49	2	0	Matakitaki River, Murchison.
„ 7	William J. Dillon	70	0	0	Glenroy River.
„ 7	„	69	2	25	„
„ 7	Edward Woodhouse	71	1	22	Matakitaki River.
„ 7	„	83	2	0	„
„ 7	James McKay	61	3	0	Inangahua River, Junction.
„ 7	Henry Forbes Budge	59	0	0	Buller River, Junction.
„ 7	Frederick Harrison	20	0	0	Lyell Creek, Lyell.

RETURN of SPECIAL CLAIMS CANCELLED, SURRENDERED, OR FORFEITED.

Licensee.	Area.			Locality.
	A.	R.	P.	
George Walker	29	3	37	Maruia.
Jacobs and Green	49	1	0	Alpine Range, Lyell.
William Faithfull	34	3	37	Matakitaki River, Murchison.
Henry Forbes Budge	19	0	0	Buller River, Junction.
Buller Junction Gold-dredging Company	62	2	39	„ „
Murchison Gold-dredging Company	47	1	27	Matakitaki River, Murchison.
Consolidated Dredging Company	88	3	33	Buller River, Three-channel Flat.
Thomas Hubert Lee	35	3	20	„ „
Hans C. Hansen	52	2	20	„ Hawk's Craig.
Albert Cederman	60	2	0	„ „
Thomas Joseph Malloy	64	3	1	„ „
Robert Mark Aitken	50	0	0	Alpine Range, Lyell.
Bernard P. McMahon	8	0	0	Buller River, Junction.
Henry Cooper	49	2	0	Matakitaki River, Murchison.

A.

TABULATED RETURN of COMPANIES (Replies to Warden's Circular of April, 1901).

Name of Gold-dredging Company.	Capital of Company.	Number of Paid-up Shares.	Number of Contributing Shares.	Number of Shares reserved.	Whether Dredge ordered.	Contract Price of Pontoons and Machinery.	Horse-power of Engines.	Size of Buckets.	Length of Ladder	Designed to dredge	Gold obtained to 31st March, 1901.
	£					£		Cub. ft.	Ft. in.	Ft.	Oz. dwt. gr.
Caledonian	10,000	1,800	8,200	..	Yes	3,895	16	4½	35 0	..	..
Marsden Lead	8,500	2,500	6,000	..	No	..	..	..	..	..	..
Marsden No. 3	9,000	2,000	6,000	1,000	Yes	4,112	12	3½	48 0	..	..
Leviathan	12,000	3,000	9,000	..	Yes	7,099	16	..	..	..	310 0 0
Ahaura River	8,000	1,600	6,400	..	Yes	5,715	..	..	..	..	..
Westland Federated ..	15,000	3,500	..	11,500	No	..	..	..	..	..	..
Stony Creek	12,000	2,500	9,500	..	No	..	..	..	..	..	..
Ohika	12,000	2,500	9,500	..	No	..	..	..	..	..	..
Buller United	2,500	2,500	..	..	No	..	..	..	..	..	..
Great Lead	7,500	1,500	5,500	500	Yes	3,983	16	4¾	*48 0	..	..
Four River Plain ..	15,000	2,800	12,200	..	Yes	7,956	16	4½	53 6	..	47 18 12
Rocklands Beach ..	10,000	1,800	8,200	..	Yes	7,559	16	4½	53 6	..	..
North Beach	9,000	1,800	7,200	..	Yes	5,467	16	3½	..	..	..
Maori Gully	9,000	2,200	6,800	..	Yes	5,785	12	..	58 0	32	..
Grey River No. 2 ..	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Maori Queen	10,000	2,600	7,150	250	Yes	6,000	12	3½	..	30	9 13 0
Ruby Creek	10,000	2,500	7,500	..	Yes	7,000	16	4½	52 6	..	..
Totara Flat	10,000	1,800	7,160	1,040	Yes	7,000	16	4½	53 0	..	..
Waimangaroa	12,000	2,000	10,000	..	No	..	..	..	..	..	..
Premier Buller.. ..	9,000	1,500	7,500	..	Yes	5,250	16	4½	54 0	..	35 5 12
Golconda	8,000	2,000	6,000	..	No	..	..	..	..	..	..
Claughesey's Freehold ..	9,000	1,600	7,400	..	No	..	..	..	..	..	..
Yellowstone	7,500	1,500	5,500	500	No	..	..	..	..	..	..
Stillwater Creek ..	8,000	2,000	6,000	†	No	..	..	..	..	..	..
Jones's Flat	10,000	2,250	7,750	..	No	..	..	..	..	..	..
Mokoia	9,000	1,250	7,750	..	Yes	5,740‡	16	5	..	..	106 19 10
Reeves's Proprietary ..	13,000	2,500	10,500	..	Yes	5,350	12	3	40 0	..	162 0 0
Annkitia	12,500	2,500	10,000	..	No	..	..	..	..	..	..
Kohikohi	12,000	2,500	9,500	..	Yes	7,880	16	4½	..	29	..
Waipuna	6,000	600	5,400	..	Yes	4,724	12	3¾	34 0	..	148 7 15
Stony and Mosquito Lead	12,500	6,000	6,500	..	No	..	..	..	..	..	..
Welcome	10,000	2,750	7,250	..	Yes	6,566§	16	4½	54 0	..	..
Golden Banner.. ..	7,600	1,600	‖6,000	..	Yes	4,960	16	4½	..	35	..
Twelve-mile	10,000	2,500	¶7,500	..	No	..	..	..	..	..	..
Pactolus No. 3	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Pactolus No. 2	8,000	1,600	6,400	..	No	..	..	..	..	..	..
Cameron's (New River) ..	8,000	2,000	6,000	..	No	..	..	..	..	..	..
Red Jack's Creek ..	12,000	3,000	9,000	..	No	..	..	..	..	..	..
Cock-eye	10,000	2,000	6,000	2,000	No	..	..	..	..	..	..
Lower Nelson Creek ..	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Kahurangi	10,000	2,500	6,000	1,500	No	..	..	..	..	..	..
Leviathan Freehold ..	24,000	4,000	10,000	**	No	..	..	..	..	..	..
Callaghan's Creek. ..	9,375	1,875	††7,500	..	No	..	..	..	..	..	..
Pactolus	9,375	1,875	‡‡7,500	..	Yes	6,750	12	4½	42 0	..	24 4 17
Buller Junction ..	9,375	1,875	§§7,500	..	Yes	8,000	16	5	54 0	..	213 10 13
Buller Dredges (Limited)	6,000	..	‖‖6,000	..	Yes	7,000	12	4	40 0	..	a5,461 3 8
Wareatea	8,250	2,250	6,000	..	Yes	4,122	12	3	49 0	..	..
Ford's Creek	6,500	1,500	5,000	¶¶	Yes	5,465	12	4½	..	33	12 1 0
Reefton United.. ..	11,250	2,250	9,000	..	No	..	..	..	..	..	..
Stillwater Creek ..	9,000	2,000	7,000	..	No	..	..	..	..	..	..
Victory	9,000	1,950	7,050	..	Yes	6,500	16	4½	..	35	..
Orwell Creek	12,000	3,500	8,500	..	Yes	9,000	20	5	..	40	..
Fairdown	8,250	2,150	6,100	..	Yes	5,500	12	3½	..	30	..
Westland	10,000	2,000	8,000	..	Yes	8,500	16	4½	..	35	..
Watterson's Consols ..	10,000	2,000	6,500	1,500	Yes	6,500	16	4½	..	45	..
Trafalgar	9,000	2,250	6,750	..	Yes	6,500	16	4½	..	35	..
Maori King	7,000	1,500	5,500	..	Yes	**2,690*	12	..	..	25	..
Clifton	8,000	1,600	5,500	900	No	..	..	..	..	..	..
Total	569,975	127,125	412,160	30,690	..	188,568	..	..	..	..	6,531 3 15

* 4 ft. extra telescope to ladder. † 2,000 paid-up shares not allotted; 1,339 contributing shares not allotted; likely to go into liquidation. ‡ Price given is for machinery and engines only. § Price does not include engine and tumblers. ‖ 500 contributing shares not issued. ¶ 1,000 contributing shares not issued. ** 10,000 shares held in reserve for a second dredge. †† 2,500 at 15s., and 10,000 contributing at 15s. ‡‡ 2,500 at 15s., and 10,000 contributing at 15s. §§ 2,500 at 15s., and 10,000 contributing at 15s. ‖‖ 1,200 shares at 10s. ¶¶ 1,100 more preference shares to be allotted. *** Price given is for engine, boiler, &c.; pontoons not yet contracted for.

[a]This gold output dates from December, 1894, when old dredge worked; the new dredge started in November, 1898.

B

TABULATED RETURN (taken from the "Press Investors' Guide") of CAPITAL, &c., of Companies whose Secretaries failed to reply to Warden's Circular.

Name of Gold-dredging Company.	Capital of Company.	Number of Paid-up Shares.	Number of Contributing Shares.	Number of Shares reserved.	Whether Dredge ordered.	Contrac Price of Pontoons and Machinery.	Horse-power of Engines.	Size of Buckets.	Length of Ladder.	Designed to dredge	Gold obtained to 31st March, 1901.
	£					£		Cub. ft.	Ft.	Ft.	Oz. dwt. gr.
Al	8,500	1,800	6,700	..	Yes	..	..	..	..	30	..
Aldinga	9,000	2,250	6,750	..	Yes	..	..	..	..	..	..
Bignall's No Town ..	11,000	3,000	8,000	..	Yes	..	..	..	..	..	..
Blackwater River ..	11,000	3,000	7,000	1,000	No	..	..	..	..	..	..
Crown Diamonds ..	8,500	2,000	6,000	500	No	..	..	..	..	..	..
Daylight	8,000	2,000	6,000	..	Yes	..	..	..	..	..	..
Dobson No. 2	7,500	2,000	5,500	..	Yes	..	..	..	..	..	45 0 0
Duke of Wellington ..	8,500	2,000	6,500	..	Yes	..	..	..	..	..	..
Eldorado	10,000	1,800	7,500	700	Yes	..	..	..	..	..	..
Erickson's Reward ..	8,000	2,000	6,000	..	Yes	..	..	..	..	..	..
Freehold Jubilee ..	12,000	2,400	9,600	..	No	..	..	..	..	..	..
Garibaldi	8,000	2,000	6,000	..	Yes	..	..	..	..	..	..
Golden United	14,000	6,000	6,500	1,500	Yes	..	..	4½	..	45	..
Grey Monarch	10,000	2,500	7,000	500	No	..	..	..	..	..	..
Grey River	10,000	2,000	6,500	1,500	Yes	..	16	4½	..	25	761 17 0
Grey River Consolidated..	20,000	5,000	15,000	..	Yes	..	..	..	..	..	..
Grey River Consols ..	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Grey River Extended ..	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Kapai	9,500	1,900	7,600	..	No	..	..	..	..	..	..
Lee's Ferry	8,000	2,000	6,000	..	No	..	..	..	..	..	..
Lord Nelson	9,000	2,250	6,750	..	No	..	..	..	..	..	..
Major Robin	9,000	2,250	6,750	..	No	..	..	..	..	..	..
Marsden No. 1	6,000	1,500	4,500	..	Yes	..	..	..	..	..	..
Moonlight	10,000	2,250	7,750	..	Yes	..	..	..	..	..	..
Mosquito	10,000	2,200	7,800	..	Yes	..	..	..	..	..	..
Murchison	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Nelson Creek	8,500	2,500	6,000	..	Yes	..	..	..	..	..	270 0 0
New River	14,000	5,000	9,000	..	Yes	..	..	3	..	30	..
Ngahere	9,000	2,000	7,000	..	No	..	..	..	..	..	..
No Town Creek.. ..	12,000	3,500	8,500	..	Yes	..	..	..	..	..	..
No Town Creek (No. 2) ..	10,000	2,600	7,400	..	Yes	..	..	..	..	..	..
Old Diggings	12,000	2,250	9,750	..	Yes	..	..	..	..	..	..
Perrett's Junction Lead..	..	..	..	..	..	..	..	..	..	..	..
Piccaninny	9,000	1,900	7,100	..	No	..	..	..	..	..	..
Ponsonby	8,000	2,000	6,000	..	No	..	..	..	..	..	..
Red Jack's Creek ..	12,000	3,000	9,000	..	No	..	..	..	..	..	..
Rocklands King ..	11,000	3,000	8,000	..	No	..	..	..	..	..	..
Shellback	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Shrive's Treasure ..	10,000	2,500	7,500	..	No	..	..	..	..	..	..
Sullivan's Lead ..	12,000	2,000	10,000	..	Yes	..	..	4⅜	..	39	..
Waipuna	6,000	600	5,400	..	Yes	..	12	3½	..	20	..
Waiwhero Sluicing and Dredging	31,000	4,325	26,675	..	No	..	..	..	..	..	..
Wangapeka	21,000	6,000	15,000	..	No	..	..	..	..	..	..
Wicklow	8,000	2,000	6,000	..	No	..	..	..	..	..	..
Total Table B ..	459,000	111,275	342,025	5,700	..	..	..	..	..	..	1,076 17 0
Total Table A ..	569,975	127,125	412,160	30,690	..	188,568	..	..	..	..	6,531 3 15
Grand total ..	1,028,975	238,400	754,185	36,390	..	188,568	..	..	..	..	7,608 0 15

SUMMARY of TABLES A and B.

Number of companies registered		102
Number of circulars sent out to secretaries of companies ...		102
Number of replies received from secretaries	58	
Particulars of companies taken from "Press Investors' Guide" ..	44	
		102
Capital of 102 companies—		
Paid-up shares	£238,400	
Contributing shares	754,185	
Reserved shares	36,390	
		£1,028,975
Number of dredges at work or ordered		53
Contract price of same		£188,568
Quantity of gold raised to 31st March, 1901, 7,608 oz. 0 dwt. 15 gr.		

I have, &c.,
ROBERT HAWKINS, Warden.

The Under-Secretary, Mines Department, Wellington.

14—.C 3.

Mr. Warden MACFARLANE to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,— Hokitika, 21st May, 1901.

I have the honour to forward herewith the mining statistical returns, together with my annual report on mining matters generally in the district under my charge.

HOKITIKA DISTRICT.

It is satisfactory to report that the output of gold for the year ending 31st March is (although slightly less than that of last year) fairly satisfactory, the shortage being some 1,300 oz. due principally to the want of water, and the withdrawal of many men from their ordinary mining pursuits, who have turned their attention to the dredging industry, which has not yet reached the productive stage. Seddon's and Back Creek Terraces, with a very inadequate supply of water, are yielding handsomely, proving, if proof were wanted, that the whole of Back Creek and Seddon's Terraces fronting the Hokitika River is one of the best hydraulic sluicing-areas on the coast but without a largely increased water-supply, and immunity from damages being claimed, arising from the deposit of water and mining *débris* in the river, the industry will be confined to the few lucky owners of the only water on the ground. The Kanieri Lake Water-race Company, having the right to lift 100 Government heads of water from Kanieri Lake, have constructed over one mile of tunnelling to supply Back Creek Terrace, but the heaviest part of the undertaking—viz., the inverted siphon over the Hokitika Valley and River—has not yet been put in hand; the long-delayed proclamation of the Hokitika as a tailing-site is said to be the cause of the delay in the construction of this much-desired work.

On the north side of the Kanieri River the old Kanieri Water-race has been taken in hand by a company, who are widening and repairing the old race and substituting iron siphons for the old fluming. This race carries fifty heads and will supply parties down to the old Hauhau or Big Paddock. This company purpose erecting an electric plant to supply power to the dredging companies in the neighbourhood; also, if arrangements can be made, supplying the Town of Hokitika with water. The work on this race is being pushed on vigorously, seven contracts being let and under way, and it is likely that in the course of the current year water will be available for all purposes.

Craig's Freehold: In August last this property changed hands, having been purchased for a substantial sum, on behalf of a Christchurch syndicate, for dredging purposes. A strong company has been formed, and the flats have been prospected by boring to ascertain their value for dredging; the results have not yet been made public. Two parties of tributers are at work in the terrace, which yield an average of from 17 oz. to 20 oz. per week. During the ten years this property has been mined, gold to the value of £30,000 has been won, and only a small area of ground has been worked, the greater portion of the claim being untouched.

On the upper part of the Hokitika River, on what is known as Grove's Swamp, some thirty prospecting areas of 80 acres each have been taken up, said to be for an English syndicate. That there are large and, it may be, valuable deposits of gravel brought down by the Hokitika River in this area no one will dispute. If the syndicate's object is to prospect, and determine the value of the auriferous deposits in their areas, we will be glad to welcome them, and wish them every success; but if the properties are to be offered to the public without their values being disclosed, then let the buyer beware.

During the year some effort was made to determine the existence of a coalfield in the Hokitika Valley, several outcrops having been noticed, especially on Koiterangi, leading to the belief that a valuable field might be found if properly looked for. With this object in view Mr. McKay, the Government Geologist, was sent down to examine and report, but, owing to bad weather and the unpreparedness of the promoters, his visit has been barren of results. However, I presume the promoters will take further steps to prove the existence or otherwise of a payable field. This can only be proved by putting down a series of bores across the supposed coal-basin, and means a considerable expenditure of money.

On the Blue Spur the ground in the valley has been mostly taken up in dredging areas, and only a few straggling diggers, including several parties of Chinamen, are at work in the upper reaches of the creek and the bounding terraces. A prospecting-tunnel, subsidised by the Government, is being driven in the terrace facing the township, with the object of picking up the old Hauhau leads cut off by the Blue Spur Creek. On the north side of this terrace, but lower down, Dwyer's subsidised tunnel was driven some 3,500 ft., but failed to touch payable gold, and has been abandoned for some time.

Boy's claim, on the Arahura Flat, about half a mile above this tunnel, is still at work, but I am informed the results are somewhat uncertain, the ground being extremely patchy. I understand, from recent prospecting on the flat, that it might pay for dredging if sufficient water could be obtained, but it is too poor to pay the individual miner, hence the granting of special claims and prospecting licenses.

On the Arahura River a number of prospecting areas are held for dredging purposes, outside the Maori Reserve, but nothing is being done to convert them into special claims.

The Humphrey's Gully Hydraulic Sluicing Company have been engaged during the year in extending and widening their water-race to its source in the Arahura River. The work has been carried on with commendable vigour, but the puggy nature of some of the country over which the race has to be carried has caused considerable delay, and a much larger expenditure of capital than was at first anticipated.

I am indebted to Mr. E. Spencer, the company's engineer, for the following particulars in connection with this company's operations, and which I now embody in my report:—

"Dealing with the new section first—viz., from Mount Brown to the Arahura River—a large amount of work has been done. To give a detailed description of this would be useless, as the country is well known only to those who have been working in the vicinity. Suffice it to say that about 10,580 ft. of tunnels have been driven, a large portion of which has been timbered, and about 152 chains of ditching completed. Besides this, the most of the creek-crossings (with the exception of Jack's, which is now in hand) are finished. In some cases they have been tunnelled round; in others the race is built through the bed of the creek, the latter being carried over the race. This, of course, needs a very careful preparation of the creek-bed, but when once constructed properly we anticipate it to be very permanent. Brentnell's Creek is a good example of this class of work. All the tunnels are finished with the exception of No. 16, which has given a great amount of trouble on account of the bad ground encountered. There still remains 270 ft. to drive.

"The intake of the race, consisting of 6 chains of ditching, was practically complete, with the exception of the timber-work, which should have been in position by the end of April, but a tremendous flood during the middle of that month filled up the whole of the intake, demolishing the race in places. This is now being repaired, together with the other damaged sections.

"During the year the race up to Mount Brown was thoroughly overhauled and put into good shape, with the exception of the flume round Granity Bluff, which was only patched. The capacity of the dam has been increased considerably by raising the by-wash 2 ft. The race from Milltown down to the claim is in good order. Long tunnel has been timbered throughout where necessary, and is in a better state than it has been for many years. The old pipe-line in McDonald's Gully has been taken up, relaid, and many slip-joint pipes flanged ready to use where required.

"In Humphrey's Gully a considerable amount of sluicing has been done, and a limited amount in McDonald's Gully, the two together yielding 325 oz. 10 dwt. 22 gr. of gold, valued at £1,269 11s. 7d., the value of the ground in Humphrey's Gully being about 8 gr. per yard. The gold in Humphrey's Gully is of a particularly fine nature, and difficulty has been experienced in saving it, and for this purpose a big spread of tables is now being put up. The face is equipped with electric light, so that work can proceed by night as well as day, light being supplied by incandescent 100-candle-power lamps. These are now being replaced by arc lamps, with the incandescent as auxiliary. A water-hoist (friction), driven by a geared Pelton, is used to remove logs, stumps, &c., so that when the present water-supply is brought in, work should proceed in a methodical uninterrupted manner.

"The average number of men employed monthly on the claim and race construction is sixty, and the amount paid in wages during the year £8,192 1s. 6d., whilst stores and machinery amount to £2,077 10s. 8d."

Stafford and Goldsborough Sub-districts.

This sub-district has been largely drawn upon with the object of dredging, but, as this method of mining is still in its initial stage, and the ground cannot be worked to advantage unless by combined capital and labour, the ordinary working-miner has not been much affected.

A more plentiful supply of water recently brought in by the Government to Callaghan's and the Upper Waimea enables hydraulic mining to be carried on to much better advantage than heretofore. In connection with the Waimea Main Drainage-tunnel that has now reached some of the lower claims, the additional supply of water enables them to make good use of this long-delayed work. I understand it is answering the purpose as far as it has gone, but a further extension is urgently required, so that the claims higher up may be able to participate in the privileges conferred.

From Callaghan's the returns are satisfactory, and the population remains about the same.

In and around Stafford mining matters are very quiet. The Wheel of Fortune Sluicing Claim, from which much was expected, has not come up to expectations. This claim and other mining privileges was sold to an English company some two years ago, and since then the company have completed the construction of Fox Creek Water-race extension, a distance of three miles and a quarter from the company's Flowery Creek Water-race. This race is 3 ft. wide at bottom, and is capable of carrying ten Government heads of water; in fairly dry weather it runs from five to six heads for the twenty-four hours, which, with the Flowery Creek Race, gives the company twenty heads per eight hours for six days in the week. Since the race has been finished sluicing has been almost continuous, and a great quantity of dirt has been shifted. Two nozzles have been at work alternately. About 10 chains of the face has been tried, with unsatisfactory results. Including expenpenditure on race-extension, the company has expended during the year £2,196 0s. 6d. Gold has been won to the amount of £729, showing a serious deficit. It is hoped that the incoming year will show a much better result. The process of working is by sluicing into a well or slump, and elevating the washdirt by elevators running seventy buckets, and driven by an overshot water-wheel.

Another important work known as Kelly's Terrace Tunnel is drawing near completion; this is a drainage-tunnel about a mile long, and is being driven, under Government subsidy, to drain a flat known as Gillam's Gully. About a month or six weeks ago the contractor touched a blue wash containing a little gold, but not payable. Since then they have been driving, sometimes touching bottom, at other times the wash dips, the bottom being a series of low ridges running about north-east. A second party (private) have opened out into the drainage-tunnel, and had driven 60 ft. when they touched wash, showing a promising prospect from top of wash. Should the tunnel prospects improve as they approach the original prospecting-shaft in Gillam's Gully, there will be a considerable area of new ground opened for the individual miner.

Kumara Sub-district.

This sub-district, although no phenomenally rich returns can be reported, still maintains its character as a steady wage-producer. Kumara proper having such a grand water-supply, the

returns from the various claims can be fairly estimated, the only drawback being a want of capacity in the drainage-tunnels, into which only a limited number are allowed to discharge their tailings and water. With the largely increased supply of water now available, further provision should be made to enable claimholders whose claims are in a chronic state of protection, owing to want of room in the present channels, to get to work. The only way I can see out of the difficulty is to extend the present races, and construct new ones to meet the requirements. The water is there, and the customers are ready to buy and pay for it; so from a strictly business point of view the third factor—viz., the means of getting rid of the *débris* and water incident to the successful working of this important goldfield—should not be overlooked, but should at once be seen to.

On the Greenstone, Cape, and Westbrooke Terraces the work, with the exception of dredging, is mostly hydraulic sluicing, and the results are said to be fairly satisfactory. The Greenstone Race, commanding a large supply of water, requires to be extended so as to command the terraces nearer the coast to be of any practical value. If this were done, large areas that are now practically valueless would readily be taken up by small parties of miners. Two dredges are now at work on the creek, and a third is nearly ready for work; a fourth is ready for launching on the Teremakau near the bridge to work a claim in the river, partly opposite and below the Greenstone Junction.

A dredge was built and all but finished on Foley's Creek, but since the notorious salting swindle was exposed I hear the company have taken up another claim at Marsden, and are now removing the whole of the plant, to be re-erected on the new claim.

I am indebted to Mr. Aitken, manager of the Government water-races, Kumara and Waimea, for the following information in connection with the various districts using Government water:—

Kumara.

Several claims have been abandoned during the year on account of the non-payable character of the ground, but the probability is that they will again resume work, the price of water having recently been reduced. The reduction of the price of water should be a great boon to the miners of Kumara, as it will enable them to profitably work ground that would not otherwise pay.

The principal change that has taken place during the year has been the opening-out of the claims running into No. 5 main tail-race. Six claims are now sluicing into No. 5, and all of them may now be said to be fully opened out and fairly at work. Some of the claims are poor, but most of them will be worked with a profit, so far as can be judged from the work already done. Like the worked portion of Kumara, the new ground opened up has payable runs of wash alternating with barren bars, so that some of the claims that are now poor may at any time have a change of ground and become much more profitable. There is very little time now lost through an insufficient water-supply, and it can only be during an extraordinary long drought, or a very hard winter, that the supply of water will run short.

Waimea and Stafford.

There is very little change to report in connection with mining in the Waimea and Stafford districts. No new ground has been opened up during the year, but there are still a considerable number of miners at work in the back gullies and creeks.

There is a fair prospect of some new ground being opened up by the Kelly's Terrace low-level drainage-tunnel. The tunnel has now been driven a distance of 5,260 ft., and recently very encouraging prospects have been obtained by the contractors for the construction of the drainage-tunnel. An inclined tunnel and three shafts have been sunk on the line of the main tunnel to facilitate the hauling of the material broken out in the course of the construction of the tunnel, and to provide ventilation. The great length of the tunnel necessitated the construction of the branch tunnel and shafts for the purposes above mentioned.

A local syndicate, which has an option over about 70 acres of freehold land (known as Lock's Freehold), on the opposite side of the Main Hokitika Road from Kelly's Terrace, has made arrangements with the trustees of Kelly's Terrace Drainage-tunnel and the contractors for the construction of the work to prospect the ground held by them from the drainage-tunnel. The option-holders of Lock's Freehold are sanguine of obtaining rich gold in their ground, and the prospects obtained by the contractors for the drainage-tunnel has given them fresh hopes of such being the case. The branch drive now being constructed towards Lock's Freehold will still further prospect the ground in the neighbourhood of Kelly's Terrace.

Several of the claimholders at the head of the Waimea main tail-races have constructed branch tail-races from their claims to the main tail-race, and one of the claims has started to open out, and will shortly be in a position to carry on continuous sluicing. The other claims will start sluicing as soon as the extension of the race now being constructed is completed.

Ross Sub-district.

With the exception of the Mont d'Or and Ross United Company's, the former of which continues to be a steady dividend-paying claim, there is very little doing in ordinary alluvial mining, and nothing whatever in quartz. Prospecting areas and special claims are most in evidence at present. One hundred and fifty prospecting licenses and thirty-two special-claim licenses have been granted up to date, but only one dredge is as yet at work—viz., the Totara in the Totara River; this being a private company, the exact returns cannot be ascertained, but the owners say that they are quite satisfied with the returns obtained. This company has experienced considerable trouble in working their claim, partly due to the large boulders met with, the general tightness of the wash, and in a greater degree to the plant being too light for the work. There are three more dredges in course of construction—viz., the Daydawn, Prince of Wales, and Kohinoor, the two latter companies are building very powerful dredges with long ladders to meet the requirements in each case, a portion of the ground being 56 ft. deep. In the

Kohinoor the average will be very much less. Both claims have been thoroughly prospected, with highly payable results, and their future operations, when fairly at work, are looked forward to with great interest. However, it will be about six months before they are at work. Most of the machinery is ready, and with despatch in the erection the above limit may be considerably reduced.

As will be seen, a large number of prospecting areas remain to be converted into special claims. Some prospecting is going on, but most of the holders are simply waiting to hear the results of those having dredges at work in their neighbourhood, or who are conducting boring operations. The Ross United (Limited), a most valuable property, is again under offer by the liquidators to an English syndicate. This covers a subsidy of £15,000 from the Government to be used in procuring and erecting a complete electric plant on the Mikonui River, and erecting a first-class mining plant on the claim on Ross Flat, to be worked by the power transmitted from the electric plant on the Mikonui. The proposed plant will furnish sufficient power to work this, and other mining machinery where power is required. I understand there is a reasonable hope of this coming off, and if it does there are good times in view for Ross.

Okarito Sub-district.

This, like other sub-districts on the Coast, has been overrun by dredging companies, more especially on the sea-beaches and lagoons, that in former days produced such large quantities of gold. Up to date ninety-three prospecting-licenses and eleven special claims have been granted. On Okarito Lagoon a company has the pontoons of a dredge under construction. This company has erected a small sawmill plant, and is procuring and cutting the timber on the ground. A second-hand dredging plant has been purchased, and will be put on the pontoons when finished. This plant is to be used as a prospecting plant on the lagoon, where a large area is held under prospecting licenses. This is a wise precaution in view of the failure to find payable gold in claims taken on trust after expensive plants have been erected. Should the results prove satisfactory other dredges will follow. A second dredge is, I am told, being built for a claim near Mapourika, but the pontoons are not yet under way. Some of the beaches are being prospected with satisfactory results, notably the Saltwater, where a number of claims are held by a Wanganui syndicate, who expect to have their first dredge on one of their claims at an early date.

I have been kindly furnished with the following information regarding the Waiho Hydraulic Company: "The original company has gone out of existence. During the year the company spent several hundred pounds in opening up a new face. This proved unsatisfactory, and it was resolved to wind up the company and commence anew with fresh capital. About £16,000 had been spent in bringing in a water-race from the Totara River, and it was felt by those interested that after so much capital had been spent, and with such a copious supply of water as the company's race delivers, further efforts should be made to develop the property. There can be no doubt of the richness of the Waiho River bed, and it is conceivable that the banks are payable also: many rich finds have been made. Therefore a new company has been formed to take over the assets of the old company, and again, on a larger scale, uniting with sluicing the popular work of dredging. At first it is intended to take the water to the upper end of the claim, where gold was being obtained by those who pegged out their claims first, and try if the lead cannot be followed into the terrace. A blow-up (hydraulic elevator) may also be tried in the bed of the river when it is very low. Five dredging areas of 100 acres each have been taken up at the mouth of the Waiho, and an expert is to be sent out from London, with suitable machinery and the latest boring apparatus, to test these areas, and if they are found to contain gold in payable quantities suitable dredges will be built to work them. The working capital of the company is £15,000. This, with the present plant, machinery, and race, ought to be ample to prove and partly develop the properties."

A few miners are scattered along the beaches as far as Jackson's Bay, but the bulk of the population depend more on stock-raising and sleeper-cutting than on gold-getting. No doubt when a suitable plant is forthcoming for working the beaches mining will then take its proper place as a paying industry; until this is done, or new fields opened, mining in the far south is a thing of the past. I have repeatedly called the attention of the local bodies to the more than potential mineral values of the block of country lying south of Jackson's Bay, and to the one requisite for its utilisation—viz., good pack-tracks for the use of individual miners who are being crowded out of the old mining centres by the large companies. We want new fields opened for the individual miner, and the best way to obtain this desirable end is for the outlying districts being made fairly accessible by the construction of pack-tracks, and let the digger do the rest.

The present means of communication south is by subsidised steamer every two months, and Government steamer every three months, and by overland mail every week to Okarito, and fortnightly further south. The Great South Road as far as Okarito is nearly completed, and is fit for wheeled traffic, and but for the rivers tourist and ordinary traffic would be considerable. If the big Wanganui and Wataroa Rivers were bridged—I think they are unsuitable for punts—with what is known as low-level bridges, which can be constructed at a moderate cost, it would meet the want for many years, and would induce an increased tourist traffic. Further south the horse-road is now open through to the Karangarua River, connecting with Gillespie's Beach by a branch road, and with Bruce Bay by the sea-beach; thence on to the Haast River. The track over the Haast Pass to the head of Lake Wanaka is passable for horses all the year round.

In the extreme south, including the Olivine or Cascade Ranges, tracks are badly wanted to open known auriferous country at present totally unoccupied, the necessity for which I have already brought under the notice of the Government. In view of the increased interest taken in our coal-measures, I would point out that on the Bald Hill, north of the Haast, we have outcrops of first-class bituminous coal, pointing to the existence of an extensive coalfield. Cox and McKay, when

reporting on the coal-measures at Jackson's Bay, were not aware of the above outcrops, or, if aware of them, did not visit them nor the locality indicated, which extends from Bullock Creek and the Bald Hills on the north to the Arawata River on the south, a distance of over thirty miles. Only the south end of the block was looked at by the experts, they having come and returned by steamer. Strong solid seams of coal show out on the face of the hill, some 50 ft. above sea-level, out of one of which—a 5 ft. seam, level-free—a 2 ft. block was taken, and sent to the Melbourne Exhibition many years ago, where it took the second prize for the best bituminous coal in the exhibition. Other seams exist, but the one indicated is easiest of access. The overlying rock is sandstone, and the flats lying between the north and south points are of the same age and formation.

The Gold-dredging Industry in Westland.

During this and the previous year this new method of winning gold has taken great hold and become very popular on the West Coast, and has been the cause of quite a rush for mining areas suitable for this mode of working, no less than 497 prospecting licenses and 166 special claims having been granted up to the 31st December, 1900. Forty-three of the companies have been registered, and are now on the market; the owners thereof, justifying their belief in the payable nature of the ventures, are placing powerful plants on their claims, at an average cost of £10,000 for each claim. So far we have only three dredges at work—namely, the Totara, on the Totara River, near Ross, said to be on payable gold, but being a private company exact returns are not available; the Greenstone Junction, and the Greenstone Creek, just started opening out, but a few weeks will be occupied in necessary preliminary work before getting on the auriferous wash. However, shares are quoted at a considerable premium, and are firmly held. A fourth plant, called a "dry dredge," has been put on a claim at Lake Mahinapua, and a start made, but so far the new departure has not been a success. There are some nine or ten other dredges well under way in different parts of the district—some nearly ready for work—that will prove the value of the claims.

The large number of prospecting areas held were in many cases taken up for speculation purposes only, and the holders appear to be waiting for something to turn up to enhance their values, so that they may be able to dispose of them at a profit; but properties with merely speculative values have suffered severely from the exposures made in the Foley's Creek salting cases, where convictions were obtained and the parties punished, and in other cases that are still *sub judice*. Investors are now more on their guard, and require substantial proof of the value of ground before investing; hence the present "slump" in the market.

The outlook for dredging (dredging that will pay) on our rivers, inland creeks, valleys, and beaches is as promising as ever, but the tentative efforts that are made to verify vague assertions as to values are so infinitesimal that they are worthless for all practical purposes—*e.g.*, a couple of 3 in. bores put down in a 100-acre claim is considered by some vendors as sufficient to prove the value of the claim, and on such evidence claims have been sold and floated into companies. That this important industry is suffering from this slipshod and taking-for-granted method of putting properties on the market without further verifying values should be apparent to the most unobservant and the most credulous investors is most clear, and the investing public should see to the abatement of the evil. The whole industry has to some extent been paralysed by the attempts made to defraud, and the hurried and careless manner in which vendors and promoters have endeavoured to place their ventures on the market. Promoters and provisional directors of mining companies should see that vendors' values are genuine, and the reports reliable, before asking investors to put in their money. A prospectus showing a number of well-known names should be a guarantee that the property has been thoroughly prospected by or for them, and that the values as set out are genuine and not speculative values, and that they are satisfied that there is sufficient gold in the claim not only to pay for the plant, but to give reasonable returns to the shareholders besides. Recent results are in evidence that this has not been done; hence the boring and shaft-sinking after the plant has been ordered, and in many instances on the ground. Such loose methods may suit mining speculators whose sole aim is a gamble in speculative values, but should not obtain if the industry is to be run on strictly business lines, when the returns and profits are to be obtained from the gold won from the mine; otherwise the investing public are deceived, and the promoters and provisional directors are parties to the deceit.

In my last year's report I called attention to this and other matters connected with dredging, more especially to the floating of companies on prospecting licenses where no valid title existed, as also the misleading nomenclature adopted by vendors and others, which, unless carefully looked into, are misleading—the names in many instances are almost identical and interchangeable with well-prospected claims, although often miles away from the claims they try to hang on to, their values being estimated not from any prospects obtained from their own claims, but from that of some well-known claim in the neighbourhood that has been proved.

Dredging on our Sea-beaches and Lagoons.

The remarkable auriferous littoral deposits occurring along the western sea-beach presents unusual opportunities to the engineer who will design and construct a plant that will successfully overcome the difficulties inseparable from beach-dredging. A plant suitable for working from the surface, doing away with the costly pontoons, lifting the sand dry, and distributing it over a wide spread of tables will, I hope, be forthcoming at an early date, and I am confident it will be a success not only from a working point of view, but as lessening the cost by at least a half. The ease with which beach deposits can be dealt with by those who can understand them will make this kind of working the most profitable in connection with dredging, and has a great future before it. However, it will take another twelve months before we can fairly assess the value of this new method of winning gold.

I have, &c.,

The Under-Secretary, Mines Department, Wellington. D. Macfarlane, Warden.

Mr. Warden KEDDELL to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Oamaru, 15th June, 1901.

I have the honour to report the following particulars concerning the Livingstone division of the Naseby district, in the Otago Mining District:—

There has been no great activity shown during the past year in mining generally. The public have been awaiting anxiously the fortunes of the new dredge that has been erected on the Maerewhenua River on the Duntroon Road, which, after some vicissitudes, made a start in the beginning of this year. The machine was a second-hand one, and purchased from the former owners to work the Pioneer Claim here on the Maerewhenna, but after working some three or four months they found the ladder insufficiently long to bottom the claim, and the result was a failure. This was disheartening not only on account of the want of success in finding the gold, which their former prospecting efforts had shown to exist, but because their failure will discourage other owners of dredging areas to put on machinery. In fact, the Maerewhenua Claim has never been properly tested yet. This misfortune has damped the ardour of many others who were waiting the result, and mining by dredging process is at a standstill.

The Premier No. 1, a claim on the Awamoko, also started a dredge, and it was confidently expected that this hitherto untried portion of the sub-district would give encouraging results—the chief drawback to its success being the opposition to its being worked on any large scale, the Awamoko and its watershed generally passing through private lands, whose riparian rights would be affected. I regret to state that this venture has not been successful, and for a time certainly the district will have to fall back upon the small individual sluicing claims, which has been hitherto the only class of mining existing.

The Mountain Hut Race, a work whose importance has been recognised by the department, having been subsidised by a supply of iron pipes, has been protected for twelve months, waiting the supply of the necessary material. A contract for this supply has been taken by a Mr. Brayshaw, a man of experience in the work, and his contract will terminate in about six months. When the whole race is completed its cost will, it is stated, amount to about £20,000, and it is believed it will give employment to about two hundred men for many years' steady work. The miners are always suffering from want of sufficient water-supply, and they are mostly idle now. There are only two races which command any extent of the field, and these are small. There are at present only about three and a half heads delivered on the west side of the river. The Mountain Hut Race, when completed, will command the whole of the field. At present it is in the same position as it was two years ago.

I have &c.,

JACKSON KEDDELL, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden CAREW to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Dunedin, 20th April, 1901.

I have the honour to forward herewith statistical returns for the Hindon portion of the Otago Mining District.

The number of miners employed in the field has further decreased, and is now less than forty. Several special claims in the Barewood reef have been abandoned, and only one, that of Alexander Gibson, is being worked. Eleven men are employed at the claim and battery of five stamps. The yield of gold for the past twelve months was of the value of £885. There is nothing further to report respecting quartz-mining.

The Deep Stream Amalgamated Hydraulic Sluicing Company (Limited) employ sixteen men when sufficient water in available. The yield of gold for the past year was 876 oz., and the company declared five dividends of 6d. each during that period.

Prospecting licenses have been applied for on a probably payable portion of the Taieri River, but unfortunately the Railway Department were advised that dredging operations might interfere with the stability of the railway-line, and consequently the applications could not be granted.

A few men earn a livelihood by fossicking about the old workings.

The Dunedin City Corporation have secured important water and reservoir rights at the Taieri River, which it is proposed to utilise for the purpose of generating electricity as motive-power for working the city tram service and for lighting purposes.

I have, &c.,

E. H. CAREW, Warden.

The Under-Secretary, Mines Department, Wellington.

Mr. Warden ENNIS to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Naseby, 18th May, 1901.

Since the last annual mining report was furnished to you from this office, the lamented death occurred of my predecessor, Mr. Warden Dalgleish, a gentleman widely known, and highly esteemed and respected by all who knew him.

On the 1st July last I assumed charge of this district, and have now the honour to forward you a general report on mining matters, as follows:—

During the past year mining operations in and about Naseby have, on the whole, given satisfactory results, quite equalling, I am informed, those of several years past. It must, however, be admitted that dredging has so far not been a success, such ventures having up to the present proved failures. The Naumai dredge, which has just commenced to work on the main Kyeburn

Creek, alone remains, and it is premature yet to say what the results of its operations will be. All other dredges in vicinity of Naseby have been dismantled and removed from the district. At the present time mining is chiefly carried on by means of hydraulic elevating, there being sixteen employed near Naseby. The motive-power is chiefly supplied from the Government water-races, which supply thirteen. There is also a considerable number of small ground-sluicing claims, worked by both Europeans and Chinese. There is no appreciable difference as to the number of miners working this year as compared with last; but no new ground has been opened up. Ground of the description worked by "fossickers" is becoming very scarce.

The water season has been phenomenally good—no better, in the opinion of old miners, for the past thirty years. The Government Eweburn Reservoir was completed last June, and has proved of valuable assistance in keeping up the supply. The year has been a prosperous one for both miner and farmer, and there has been no idle labour visible.

Kyeburn Diggings.

Mining has been carried on here much as in former years, with the exception of the Naumai dredge before alluded to, and a few claims worked by hydraulic elevators, which appears to be a successful way of treating the ground in this locality also. Some dredging claims have lately been taken up in this neighbourhood, and no doubt, if the Naumai dredge should pay, dredges will be put on those claims.

Matakanui (Tinker's).

With the exception of three or four parties, mining in this portion of my district does not present a very prosperous appearance. The Undaunted Company has had a very prosperous year, and the Sugar-pot Company has paid its first dividend for a considerable time. The Matakanui Company has had a fair year also. These three claims are worked by hydraulic elevators. The other smaller parties who sluice their claims may be said to have "held their own."

As to dredging in this locality, so far this method of extracting the precious metal has not been successful. Great hopes were entertained from the operations of the Klondike dredge, but unfortunately either the gold was not in the ground, or the saving appliances were not efficient, from the many reports as to the very payable prospects obtained from the claim before the dredge commenced to work. I should be more inclined to think that our present method of treating the wash obtained in dry-land dredging is not sufficiently advanced. The Blue Duck dredge has also made a start in Thompson's Creek, but so far its returns do not warrant great expectations.

Ida Valley.

Several claims were taken up in this place for the purpose of dredging. One company has been formed, but so far the directors have not thought it advisable to place a dredge on the claim. It is understood that the prospects were good, but the ground generally is shallow and water not plentiful. There are several miners occupied in a small way at German Hill and the gullies in and about Ida Valley, but only a living is being got by them, and year by year their numbers are decreasing.

Ophir (Black's).

At this place there is practically no mining going on, the field having been left to a few fossickers. A new party has taken up the quartz claim at one time occupied by the late Mr Robert Shepherd, a mile or so south-east of the township, and upon which a considerable amount of money was spent in prospecting a few years ago. The new party as yet have not had time to test the value of their venture.

St. Bathan's.

The Shamrock Claim has had a very fair year. There are nine shareholders, who, after paying all expenses, declared a dividend of £119, and the claim shows well as a paying concern. The same company has lately opened out a claim in a granity formation above Hawkdun Homestead, and which is showing good prospects.

The Scandinavian Company are working ground both at St. Bathan's and Surface Hill, and have done very well during the past year. They have taken 1,100 oz. of gold from the ground, and expect to have a better yield next season. At St. Bathan's this company are hydraulic sluicing old worked ground, which is paying them very well. At Surface Hill they have two powerful hydraulic elevators at work. The company have a good water-race, and had a good supply last year. Gerty and Gallaher are also working a claim at Surface Hill by means of an elevator.

The United M. and E. Company have also taken a large quantity of gold from their claim during the past year, and the future prospects are considered good; they have a large area of ground still to work. The claim is worked to a depth of 60 ft. by hydraulic elevators. The company have a good water-supply.

The St. Bathans Sludge-channel is in good repair, and is of great value to mining there. At Vinegar Hill and Shepherd's Flat Mr. Ewing's claims have been worked successfully, and it is understood that he has been getting good returns.

Morgan and Hughes, who have been working at Shepherd's Flat for past thirty years, are still mining there with fair success, and the past year has been as good as any preceding ones.

Cambrians.

Fordham and Grey are the only miners here; they have been working at Cambrians for the past twenty years. They use a hydraulic elevator with satisfactory results.

SERPENTINE.

There are eight miners in this locality sluicing. There are two parties working claims by means of elevators at the head of Taieri River, and one party at German Jack's. A company has been formed to work Canadian Flat by hydraulic elevators. This company have thirteen men employed constructing a water-race from Taieri River. The Pile-up Company are said to intend placing a dredge on ground in this locality.

MIDDLEMARCH.

Very little mining is going on in this locality. A number or dredging claims have been taken up on the Taieri River, and a dredge—the First Taieri—was placed on a claim, but after working some time turned out a failure—chiefly, I think, because the dredge was too small and not powerful enough.

HYDE.

In the immediate vicinity of the township there are only a few parties sluicing, and some others treating the ground by the primitive way of cradling. At Rock and Pillar there are some miners who have been working for years. The ground must be fairly rich, as they cannot work for months every year in the winter-time, being prevented by the severe frosts and snow; but with these drawbacks the men stick to the place, and seem quite contented with their lot.

There are some Europeans and Chinese working on the banks of the Taieri River, between Wardling's Crossing and Taieri Lake Station, who are reported to be doing well. Some of these are sluicing and others cradling. There are a few Europeans and about ten Chinese mining at Four-mile Diggings, making a fair living.

The quartz claim at Mount Highlay is still in operation, and from sixteen to twenty generally employed. Several crushings have paid well, but others have not, there not being an even run of stone in the mine.

A Chinese party are constructing a tail-race for the purpose of working ground in the Fillyburn Creek, and hopes are entertained that the venture will pay.

MACRAE'S.

Dredging here, too, has been a failure so far. The Macrae's dredge has been sold and removed from the district. Alluvial-ground sluicing is a small industry here. Only about five Europeans and ten Chinese are paddocking and sluicing on Horse Flat, they, however, are making good wages.

Golden Point: Donaldson Brothers in their quartz-mine employ seven men to raise stone, scheelite, and to work battery and mill. The plant consists of five head of stampers and a Huntingdon mill. The stone is conveyed to the battery by means of an aerial tramway about half a mile long. The company have, I understand, taken out about 80 tons of scheelite ready for the market, and the gold obtained, I have been informed, more than pays all working-expenses.

The Golden Bell Claim, which is owned by Messrs. H. Mills and Sons, is worked by a battery of five heads of stampers driven by steam-power. The claim is being worked as an open face—no tunnelling or driving. The stone has to be carted half a mile to the mill. Six men are employed. During the past year 2,290 tons of stone has been brought to grass and crushed, giving a yield of over 431 oz. of gold.

Cunningham, Griffen, and Spear's Mine: This company has expended nearly £700 during the year in constructing water-race, dam, roadway, and battery to work this mine. 447 tons of quartz has been crushed, yielding 188½ oz. of gold, besides 70 tons more of stone ready to crush. The battery consists of eight heads of stampers driven by water-power.

DUNBACK.

Golden Bar Quartz Claim.—This mine has been taken up by a company of working-men, with one exception, and this shareholder employs a wages-man. The company are now erecting a ten-head stamper battery to be driven by steam-power. This mine has hitherto been tried by several parties and by a Dunedin company, and abandoned as not being payable. The reef is a large hill of quartz. Several crushings have been taken from the reef and treated at different batteries, and have yielded from 5 dwt. to 15 dwt. to the ton; the last test by the present company gave 5 dwt., which will, I am informed, pay good wages at all events.

Bonanza Quartz-mine.—During the past year this mine has been continuously worked, though only a small staff of men has been employed. The high-level adit (in which there are two distinct lodes) has been pushed ahead towards the western boundary, and considerable bodies of ore have been met with, of varying size and quality. It is satisfactory to note that these newly opened lodes have a tendency to make strongly underfoot, and are therefore accessible from the intermediate levels, some 60 ft. below. In the intermediate levels, as far as they have been opened up, the reefs have all a downward tendency. Stoping has been actively carried on from the intermediate to the higher levels, and many tons of stone taken out and sent to the mill, the result of the crushing being satisfactory. The low-level adit, some 230 ft. below the present workings, has been driven a distance of 1,550 ft., and is connected with the higher levels by an uprise, through which all the ore mined is passed to the lower level, and conveyed in trucks to the aerial tramway at the surface, where it is deposited in readiness for transmission to the battery. It is the intention of the management, I understand, at an early date to expend more capital in driving the low and intermediate levels further ahead, so as to command larger bodies of ore known to exist overhead. Crushing operations have been somewhat retarded owing to shortage of water during the last few months. The quantity of stone crushed is not yet ascertained, but the approximate yield of gold has been 15 dwt. to the ton.

NENTHORN.

During the past year quartz-mining has been at a standstill in this locality, mostly owing to the dredging boom, and not because, in my opinion, that there is no gold in the reefs. I believe, after the dredging boom is over, Nenthorn will have mining again in operation. The old Crœsus battery is still on the ground. There are only three miners on this field, working what is called "the sinking" between the old township and the settlement; and I hear they are doing fairly well.

GENERAL.

The amount of gold purchased by the banks in the district during the year has been 13,242 oz. 8 dwt. 13 gr., of the value of £50,978 14s. 10d.

The revenue has kept up fairly well during the year, and Courts have been held at the various centres regularly.

In conclusion, I may observe that, in consequence of the unusual rainfall during past year, the farmers as well as the miners have cause to be well satisfied; in the case of the farmers the high prices for stock of all descriptions that have obtained necessarily increases their prosperity. The usual statistical returns are forwarded herewith. I have, &c.,

The Under-Secretary, Mines Department, Wellington. J. McENNIS, Warden.

Mr. Warden BURGESS to the UNDER-SECRETARY for MINES, Wellington

SIR,— Warden's Office, Queenstown, May, 1901.

I have the honour to forward herewith annual report on the Wakatipu-Dunstan portion of the Otago Mining District for the year ending 31st March, 1901, together with statistical returns for the same period.

Mining in this district still continues to excite much interest not only on account of the large amount of capital invested in the dredging industry, but by reason of the importance which gold-dredging has assumed as a factor in the wealth-production of the colony, as evidenced by the large quantity of gold derived from this source during the past twelve months. The results have been such as to fully justify the belief that gold-mining by means of dredges has already taken its place as one of the important industries of the colony. As the machinery and appliances in use are improved from time to time, and adapted to meet the difficulties and hindrances that present themselves under new conditions and varying circumstances (a process of development which is constantly in progress), still greater success may confidently be expected. During the intense phase of the revived interest in the dredging industry a short time ago many worthless or, at any rate, doubtful claims were taken up and floated on the market. Most of the companies formed to work these claims have, as might have been anticipated, gone into liquidation, and the titles have been surrendered. The unfortunate shareholder who was reckless enough to invest his capital in these undertakings has received nothing in return for his money. In addition to this, most of the companies successfully floated have had necessarily to call up their capital before actual mining operations commenced, and as a consequence the eagerness on the part of the public to invest in mining ventures has greatly declined of late. The stability of the industry is, however, in no way affected. The number of dredges now at work, and the profitable nature of their undertakings, places the permanency and importance of this class of mining beyond question; while the number of dredges now nearing completion, intended to work ground of known richness, will in a short time greatly augment the quantity of gold now won by this industry.

During the last three months the yield of gold has fallen short of the average. The Clutha and Kawarau Rivers have been unusually high, and operations on many of the dredges have been wholly or partially suspended in consequence. This is a contingency to which deep-river dredges are necessarily subject from time to time, but the present season has been more than ordinarily trying.

The amendment to the Mining Act, passed last session, allowing increased length of river in narrow river-beds, has been taken advantage of by several companies holding claims in the gorges, and amalgamation of titles has been effected, thus affording inducement for the expenditure of capital which the smaller claims did not justify. This alteration in the law will, I am satisfied, operate beneficially to the district.

QUEENSTOWN AND ARROW SUB-DISTRICTS.

There is not so much progress to be recorded here as in other portions of the district. After much delay, and in the face of many obstacles, the Dart dredge, which has been built upon the Dart River, at the head of Lake Wakatipu, has lately started work, but owing to stoppages occasioned by the height of the river, and by alterations found necessary in the machinery, sufficient results have not yet been obtained upon which to base an opinion as to its probable success. The shareholders are, however, sanguine as to its future. There are nine dredges in course of construction on the upper half of the Kawarau River, and four are just completed and will shortly be at work—viz., the Merrimac, Galvanic, Metallic, and Eclipse.

During the ensuing year it is confidentially anticipated that most of the dredges now building will be in operation, adding materially to the returns of gold from this district. The Arrow Junction dredge has started to work on its claim at the junction of the Kawarau and Arrow Rivers, but so far the quantity of gold won has only been moderate. The Arthur's Point dredge, in the Shotover River, is also completed, and has quite recently commenced operations, but, as it has not yet reached the portion of the river-bed which it is intended to work, it is premature to speak of the result of the operations so far. The Moke Creek dredge, a few miles further up the river, is being proceeded with, but is not yet near completion.

Quartz-mines.—I regret that I cannot report very favourably with respect to the success of quartz-mining during the past year.

The Achilles Gold-mine (Limited), at Skipper's, has been steadily working during the year under the management of Mr. J. F. Donnal, but has not met with the success which has in the past attended its operations. Indeed, it seems probable that, owing to the poorness of the returns, the mine may be compelled to temporarily suspend operations.

The Shotover Quartz-mining Company, under the management of Mr. J. E. Davis, has been doing some good work during the year, and quite recently a payable lode has been struck which promises profitable work during the coming year.

At Macetown the Glenrock Company still continues to work steadily on, but the returns, though fair, are hardly commensurate with the labour and capital expended.

Sluicing.—Sluicing is still carried on to a considerable extent in this sub-district. On the Shotover River the Skipper's Sluicing Company have opened out a large area of ground, and very encouraging returns have been obtained. Much delay and loss have, however, been caused by the occasional blocking of the tunnel, which serves the purpose of a tail-race for carrying away the water used in sluicing the ground. A lamentable accident occurred in this mine in December last, by which the manager and two men lost their lives.

Messrs. Davis, R. Johnson, and Stevenson, who each hold and work sluicing claims at Skipper's, have done a good deal of opening-out during the year, and have received payable returns from their respective claims.

Messrs. Collier, Smith and Sons, Rogers, Peat, and Schusted hold and work hydraulic claims in the Shotover, and under the improved system of "hydraulicking" which has been adopted have obtained more satisfactory results than the somewhat primitive processes hitherto in use have afforded.

Messrs. Lee and party, who have purchased Monk and McInnes's claim at the Sandhills, have been laying an expensive line of piping and erecting an extensive plant for more systematically working the claim on a larger scale than hitherto attempted. As the ground is known to be highly auriferous, there is every probability of their undertaking proving a success.

The Arrow Flat Company, working a hydraulic-sluicing claim in the river-bed close to Arrowtown, have had a great deal of trouble with their water-race. They have tried several places on the claim, but with very poor results, not being able to reach the bottom. Operations have recently been suspended. The Arrow Falls Company have worked with great energy, and have accomplished a very large amount of work for comparatively unremunerative returns, but the proprietors are confident of success in the near future.

The Big Beach Hydraulic-sluicing Claim in the Shotover River has been worked by tributers. I do not know what gold has been obtained, but I understand the result has been satisfactory to the tributers. At the Twelve-mile Creek, on Lake Wakatipu, Reid and party have put a large hydraulic plant on their claim, and have done a great amount of work in opening out the ground and preparing it for commencing to sluice. Their prospects are very encouraging.

Cardrona Sub-district.

There is very little mining being carried on in this locality. A few parties of men are engaged occasionally in sluicing near the Cardrona River, but their earnings are not large. This district has long been regarded as a most hopeful field for dredging, and several companies were formed with the object of providing dredges to work the valley. Two dredges have been completed—the Rolling Stone and the White Star. The former of these was working for some months, but the returns were disappointing. Operations are at present discontinued and the dredge is closed down. The White Star has only recently begun to work, but the prospects are encouraging, and payable returns are confidently anticipated. Several other dredges are in various stages of construction, but it will be some time before they are at work. The erection of these dredges has proceeded very slowly, the machinery and materials having to be carted over long distances.

The dredging-ground at Cardrona consists of a wide flat valley, the entire bed of which is covered with silt and gravel, over which the Cardrona Creek (an inconsiderable stream except in times of flood) flows in a straggling channel. The stream is amply sufficient to supply the dam in which the dredge works, but it is too small to otherwise float the dredge. The method of dredging is therefore of the kind adopted in working ordinary alluvial flats—a method which necessarily places the dredge at a great disadvantage as compared with the deep-river dredges, which can be easily moved from one portion of the claim to another if the place chosen for the commencement of operations proves unfavourable.

An impression seems to prevail that the dredges built, or in course of construction, will hardly prove capable of testing with absolute certainty the auriferous nature or otherwise of the ground, the silt in many places being too deep to be removed by these dredges as at present equipped.

Cromwell Sub-district.

The gradual decrease of alluvial mining referred to in previous reports still continues, and, although a few parties and some individual miners still continue at work in certain localities—notably Nevis, Bannockburn, Quartz Reef Point, and Lindis—the returns have been gradually diminishing, and the industry is surely, though slowly, dying.

Dredging, on the other hand, is steadily assuming larger proportions, as will be seen by a reference to the accompanying statistical sheets, where it is shown that there are now twenty-three dredges actually employed in this sub-district as against twelve for last year, the total value thereof being £149,000 as against £78,000, and the ascertained output of gold being 20,790 oz. as against 17,344 oz. for last year. Although the output of gold does not appear to have increased in due proportion to the increased number of dredges, it must be borne in mind that, with one or two exceptions, no extraordinarily large returns have been obtained, but that the yield has been more evenly

distributed. The unfavourable condition of the rivers, which have during the past year been higher for longer periods than usual, has rendered dredging at times difficult, and in some cases impossible, and has a material effect in diminishing the yield of gold as compared with the previous year. There are five new dredges being built on the Upper Clutha River, three in the Clutha Gorge below Cromwell, three on the Kawarau, two at Bannockburn, and one at Nevis.

The only quartz claims in operation are those of Lawrence Brothers and James Lawrence, on the Carrick Range. The once-famous Bendigo Mine, now the property of the Cromwell Company, which in the past yielded large returns of gold, has been closed down during the whole of the last year.

Clyde and Alexandra Sub-districts.

Although during the past year several dredging claims in this portion of this district have produced exceedingly profitable returns, yet, on the whole, the result of the industry may be said to have been rather disappointing, attributable chiefly to the unprecedented fluctuations of the river. During the past few months dredges confined to the river in their operations have been able to work barely one week in four, while several newly constructed ones have been considerably delayed in making a start, in consequence of the depth of water and the insurmountable quantity of running drift.

The claims which have produced the best returns are those embracing beaches and banks at and near Sandy Point — notably the Perseverance, Earnscleugh Nos. 1 and 2, Enterprise Nos. 1 and 2, the Golden Beach, and Molyneux Hydraulic, all of which have put in good average time, with extremely satisfactory results.

The extreme variations in the state of the river have militated considerably against the efforts to test the value of the gorge claims. Between Cromwell and Clyde one or two dredges succeeded in reaching the bottom, with the result that gold in highly payable quantities was discovered; and the same may be said of the gorge between Alexandra and the Fourteen-mile Beach, the Sailor's Bend having obtained 85 oz. for one week's work, which goes to show that, under more favourable circumstances, these gorge claims are not only workable, but are also highly payable.

The permanency of dredging in this district will a good deal depend upon the ability to work the auriferous banks. Several efforts have been made, with varying success. The greatest tests in this direction are being anxiously looked forward to in the working of the Earnscleugh No. 3 and the Fraser Flat, two of the largest dredges under construction in the colony. Both claims are a considerable distance away from the river, and will therefore lack the influence of the current; while the ground is about 80 ft. in depth, and is made up of alternate seams of drift and gold-bearing gravel of easy manipulation.

The difficulties met with in this class of dredging seem to be in the disposal of the fine silt, and no improvement in this direction seems to have been effected or attempted for years. Probably this is to be accounted for by the fact that our consulting engineers have been too busy to give the matter attention, and they may make efforts to remedy the evil when the works now in hand have been completed.

The Manuherikia River and flats, from which so much was expected some two years ago, have not, I regret to say, proved a payable dredging-field. Five dredges are still working in this locality, but the returns are not very satisfactory.

Bald Hill Flat: The number of individual miners in this locality, like many other portions of this district, is slowly but surely growing less. The class of ground yet unworked is not rich, and only by the assistance of a large supply of water can it be made to pay.

The Bald Hill Company's dredge has made a start, but a few difficulties in the opening-out have arisen, and some time must elapse before an opinion can be formed as to whether the ground will pay.

Although the Last Chance Company was floated for the purpose of dredging, the ground is still being worked by means of sluicing, the returns being steady and payable. If the dredge now working on the flat proves a success, the company will doubtless have one constructed. In the meantime I think the directors are acting wisely in holding over the expenditure until the ground is proved payable.

Fourteen-mile Beach: The Fourteen-mile Beach Company's dredge has been ready for work for some considerable time, and has made two or three efforts to start, but on each occasion has been compelled to close down through the high state of the river. The motive-power for this dredge is electricity, and on each occasion it was working the machinery gave every satisfaction, proving conclusively that, when water under sufficient pressure is available, electricity will be found to successfully take the place of steam, thereby reducing the working-expenses by nearly one-half, and doing away with the labour and difficulties in supplying dredges in these gorges with coal.

Quartz.—White's reef, on Obelisk, and the Excelsior, on Coal Creek Spurs, are still being worked, but with what results I have not been able to ascertain.

Roxburgh Sub-district.

Many of the dredges here, like those higher up the river, have been subjected to a considerable period of enforced idleness. The Gold Queen, probably the most competent dredge working in the river, has proved itself quite incapable of contending with the immense quantity of drift. Now and again, when circumstances have been favourable, the returns have proved that there is gold in highly payable quantities in the claim. The Majestic, too, a few miles lower down, managed on two or three occasions, when the bottom was "getatable," to produce returns quite sufficient to prove that these lower reaches of the river are capable of affording profitable employment for many years to come.

The Golden Treasure, Golden Gate, and Pringle and party's dredges, below Ettrick, have seldom been idle, and, although they are by no means up to the capacity of the dredges now being con-

structed, the quantity of gold produced by the two former during the past year—viz., 2,767 oz.—goes to show that the modern dredge is manipulating more stuff than the present gold-saving appliances are capable of successfully treating, or that the ground is exceedingly rich. The two companies, out of their last year's operations, returned to the fortunate shareholders £6,520 in dividends. Pringle and party, I am informed, was little less successful.

The banks on both sides of the river for miles are known to be highly auriferous, and the public have waited with considerable anxiety the result of the first few weeks' work of the Golden Bed dredge on the eastern bank opposite Ettrick. The gold that has been won, I am pleased to say, is highly satisfactory, and proves that the banks are not only auriferous, but with suitable machinery can be profitably worked.

There are several sluicing claims in this locality, but every year the number gets less, the greater portion of the ground being now held as dredging claims. The Golden Run pipes obtained 660 oz. during the past year, a return which must be deemed very satisfactory when one takes into consideration the fact that the operations are not in a very large way.

There are thirty-six dredges actually working or ready for that purpose, and thirty-one in various stages of construction, all of which should during the current year be taking part in the weekly return of gold produced.

GENERAL.

The goldfields revenue collected at Clyde during the past year amounted to £2,948. There was a considerable falling-off in the number of applications for new ground.

Although I have only recently taken charge of this district, I cannot but be favourably impressed with the general prosperity and well-doing of the residents throughout, both farmer and miner alike. Employment for tradesmen and labourers seems to be plentiful, and very few idle men are to be seen.

I have, &c.,

The Under-Secretary for Mines, Wellington. FRED. J. BURGESS, Warden.

Mr. Warden STRATFORD to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Warden's Office, Lawrence, 3rd May, 1901.

I have the honour to forward you herewith statistical returns for the year ended 31st March, 1901, and submit the following report on the several mining districts under my charge for the same period :—

WETHERSTONE'S.

The Golden Rise dredge is still working on the Wetherstones Flat, and the owners—Messrs. Smyth, Adams, and Donlan—also work a claim by hydraulic sluicing in the same locality, and I understand they both yield very good returns.

The Happy Valley Gold-dredging Company (Limited) are now building a dredge, on ground purchased from Mr. T. Pope, to work the land up towards McCluskey's Flat, and it should be ready to start work in a few months.

The Golden Crescent Sluicing Company (Limited) have had a very successful year's sluicing. The company cleared off a heavy debt, and the finances are now, I understand, in a very satisfactory position.

TUAPEKA FLAT.

Five dredges are now at work on the Tuapeka River below Lawrence. Four of them have been working for a few years with satisfactory results; the fifth is the Reliance dredge, and it started operations about a fortnight ago. The return for the first week in opening out was 11 oz., which looks well for the prospects of the company.

BLUE SPUR.

The Blue Spur and Gabriel's Gully Consolidated Gold Company (Limited) obtained a yield of gold for the year of 1,878 oz., valued at £7,448.

Messrs. Kitto and party are still working (by hydraulic) the tailings in Munro's Gully with satisfactory results, and Messrs. Mills and Browne have also been working all the year near the foot of Munro's Gully.

DREDGING ON THE CLUTHA RIVER.

Since my last report twelve months ago, I beg to state that no new up-to-date dredge has been completed to work the Clutha River between the Tuapeka Mouth and the Talla Burn, above the Beaumont, though several are under construction, and should be ready to commence work in a few months. I therefore have nothing new to report on dredging on the Clutha River within my district.

WAITAHUNA.

There are now four dredges, all private concerns, working at Waitahuna, and they are all supposed to be doing fairly well. Another one, the property of the Waitahuna Gully Gold-dredging Company (Limited), is nearly completed. With this dredge it is intended to work the flat at the lower end of Waitahuna Gully.

The sluicing claims higher up the gully, belonging to the Sailor's Gully Gold-mining Company (Limited) and Messrs. Thomson and party, have been working for the whole of the year with fair returns.

GLENORE.

The opposition of the farmers and landowners on the Tokomairiro Plain has crippled the dredging industry at Glenore. The number of working dredges is now reduced to two.

Waipori.

The fleet of dredges in this locality has been increased by two during the year, making now a total number of ten. The public companies that publish returns have all been doing very well, and I have every reason to think that the private companies do well also.

Mr. W. J. Farrell's hydraulic-sluicing claim on Mr. Cotton's freehold has been working all the year, with very good returns.

The Bakery Flat Sluicing Company (Limited) has had some very good returns during the year, and has paid several dividends to the shareholders.

One of the new dredges that started working during the last year is O'Brien's. It belongs to a private syndicate, and is driven by water-power; it takes two Government heads of water to drive the machinery, with a pressure of 45 ft.; 3 oz. of gold per week will pay the cost of working. It is now dredging to a depth of from 12 ft. to 14 ft., and does the work well, to the general satisfaction of the owners. Mr. O'Brien has patented the system throughout the Australasian Colonies—in fact, the greater part of the world. The dredge is, I understand, the only one yet known to be worked by hydraulic pressure direct.

The Golden Key Mining Company sold out to Messrs. Gare Brothers the whole of the company's property at Waipori, consisting of water-races, dams, &c., and now that the claim is to be worked as a private concern on a smaller scale, the owners being miners with a good deal of experience, it may turn out a success.

The Lammerlaw Flat Hydraulic-elevating Claim, one of the latest to start, is doing well.

The O.P.Q. Gold-mines (Limited), (Mr. A. E. Inder, general manager): This company has done a lot of work in opening up and working the quartz-mine during the year, and constantly employs from seventy-five to eighty men. It is now yielding good returns.

There are two dredges in course of erection—viz., the Big Flat and the Lower Enfield; the former will probably be worked by O'Brien's hydraulic system.

On the whole, mining may be said to be flourishing at Waipori.

Tapanui.

Very little mining is being carried on in this sub-district now. One dredge belonging to a private syndicate has been at work during the year, but the returns are not made public. The claim is on the Pomahaka River, and known as the Ardmore Dredging Company.

Adjoining this on the same river is the Greenvale Dredging Company's claim, on which a large dredge is now being constructed. The results of this one are anxiously awaited, as no powerful dredge has ever worked in the locality before.

Gore.

I have very little to add to my report of twelve months ago, except that there does not seem to be the same eagerness to acquire claims as there was then.

Dredging is the principal method of mining around this district. In the Waikaka Valley there are at present eleven dredges at work, and two in course of construction; at Waimumu there are four at work, and five in course of construction; and at Charlton Creek there are at work, and one is being constructed.

Messrs. Graham Brothers have sold their dredge, which was on the Mataura River near Gore, to the Central Mataura Company, and no doubt, if satisfactory returns are obtained, extensive dredging operations will in the near future be carried on in the Mataura River.

Waikaia (including Nokomai).

Mining in this sub-district keeps about the same even tenor. It is estimated that about eleven thousand pounds' worth of gold has been won in the Waikaia and Nokomai districts during the last twelve months, most of it has been obtained by hydraulic sluicing. The principal claims in this district are: the Argyle Hydraulic Sluicing Company, the Winding Creek Hydraulic Sluicing Company, the Nokomai Hydraulic Sluicing Company, and the Lion Gold-mining Company.

The Piano Flat Sluicing Company (Limited) is another claim which is expected to yield good returns, but has not got properly to work yet on account of the recently constructed water-race not carrying the water very well.

The Lion Gold-mining Company (Limited) have now completed their water-race at the Nokomai, after three years' work, at a cost of about £11,000, and it is reported they have struck payable gold.

A new company (which has been registered), called "The Gow's Creek Gold-mining Company," have obtained a right to bring in two large water-races from near the head of Gow's Creek to their claims lower down on the same creek. Only one race is being constructed in the meantime, the length of the race to the company's first claim being about four miles and a half, and the probable cost about £3,500. The company hope to have the race completed and the claim opened up about November next.

Two dredges have been built in this district during the last twelve months—viz., the Nugget and the Dome Creek—but neither of them has turned out a success as yet; in fact, the Dome Creek Company have gone into liquidation.

There are about two hundred European miners at work on this field, and about fifty Chinese.

One hundred and seventy mine applications were lodged for mining privileges at Warden's Court, and the revenue collected during the year amounted to £374.

I have, &c.,

H. A. Stratford, Warden.

The Under-Secretary, Mines Department, Wellington.

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

Sir,— Warden's Office, Invercargill, 24th May, 1901.

I have the honour to enclose herewith the annual statistical returns dealing with mining matters in the portion of the Otago Mining District under my care for the year ending the 31st March, 1901.

Beyond the opening of the shale- and oil-works at Orepuki, the closing-down of the quartz-mines at Preservation Inlet, the starting of dredging operations on the Waiau River, and the inactivity of mining matters generally, there is nothing of interest to chronicle.

I have, &c.,

S. E. McCarthy, Warden.

The Under-Secretary, Mines Department, Wellington.

WATER-RACES.

WAIMEA-KUMARA WATER-RACES.

Mr. Alexander Aitken, Manager, Waimea–Kumara Water-races, to the Under-Secretary, Mines Department, Wellington.

Sir,— Kumara, 20th May, 1901.

I have the honour to forward the following report on the Waimea–Kumara water-races for the year ended 31st March, 1901:—

Waimea Race.

The total sales of water from this race for the year ending 31st March, 1901, amounted to £560 0s. 5d., and the expenditure for maintenance and repairs during the same period was £794 6s. 3d., showing a debit balance of £234 5s. 10d. on the year's transactions.

The average number of miners supplied with water for sluicing from the race was 30·58, and the approximate quantity of gold obtained by them was 1,717 oz., the value of which was £6,696 6s.

The sales of water are £62 13s. 2d. less than during the preceding year, and the quantity of gold obtained was 200 oz. less, representing a value of £780.

The number of miners employed in sluicing with water from the race was six less than during the preceding year.

Water was plentiful and very few stoppages occurred during the year, but yet the sales of water and the yield of gold show a considerable falling-off. The ground commanded by the race still unworked is very poor, all the best of it having been washed away during the thirty-six years the field has been worked. The field has been a good one, and large quantities of gold have been won from it; but, like all other alluvial fields, the best and most available ground was worked first, and the patches still left unworked are exceedingly poor. The ground worked during the year with water from the race has not yielded anything near the current rate of wages, and only a bare living has been made by the miners.

The high and expensive fluming on the race where it crosses Pretty Woman's Gully completely broke down during the year, and instead of re-erecting the flume a race in open cutting has been constructed, with a short and inexpensive flume where it crosses the gully. This work did not cost more than one-tenth of the amount the re-erection of the flume would have cost, and it answers the purpose quite as well, and will not cost nearly as much for maintenance and repair.

The expenditure on maintenance and repairs during the year was £63 4s. 6d. less than during the previous year, and it includes the renewal of a portion, about 4 chains in length, of the original fluming at Kawhaka, which was so decayed that it had to be replaced by an entirely new flume. The cost of this fluming added considerably to the expenditure for maintenance and repairs, but, as a large portion of the material for the new flume was taken from the original high fluming (not now in use), the cost was much less than it would have been if new material for the whole work had to be obtained. All the silver-pine stringers and planking in the old high flume referred to were in good condition, and were used again in the new flume, although they had been in the old work for about twenty-eight years, which shows the value of silver-pine in a work of this kind.

Many of the parties could not afford to pay for the whole quantity of water supplied to them from the race, in consequence of the extreme poverty of the ground worked by them, and allowances were made after full enquiries in each case had been instituted, and then only after all paying parties had been supplied. Nearly all the claims in the Waimea and Stafford districts would have to be abandoned unless concessions of the kind referred to are made.

Water was supplied to the trustees of Kelly's Terrace Drainage-tunnel for sinking No. 3 shaft, and for hauling the material from the tunnel; and a quantity of waste water was supplied to parties prospecting new ground, but this was only done after all paying parties had been fully supplied, and when there was plenty of water to spare.

In the back gullies there are still a number of parties at work on ground not commanded by the race, and as they depend entirely on local rainfall for water, which they conserve in dams constructed for that purpose, the year just past must have been very favourable for them.

The following tabulated statement will show the receipts and cost of maintenance of the Waimea Race for the year ended 31st March, 1901, together with the approximate quantity of gold obtained by parties using water from the race :—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1900.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
April	31 4 2	32 10 0	65 15 8	24 3 8	30	110	429 0 0
May	47 1 3	33 16 6	52 4 2	24 3 8	33	153	596 14 0
June	38 11 3	43 18 3	53 19 2	23 13 8	31	97	378 6 0
July	52 16 3	52 6 0	69 18 2	23 13 8	30	161	627 18 0
August	53 4 2	47 17 3	56 14 2	22 18 8	35	162	631 16 0
September	44 9 2	42 10 2	52 19 2	22 18 8	29	135	526 10 0
October	56 16 8	53 12 9	56 19 2	27 2 0	35	171	666 18 0
November	55 13 9	55 9 1	55 0 2	22 18 8	29	172	670 16 0
December	37 14 2	36 18 0	76 19 2	22 18 8	32	119	464 2 0
1901.							
January	46 2 11	55 3 3	133 1 11	18 4 2	32	143	557 14 0
February	43 7 1	34 3 9	51 16 2	22 19 2	22	132	514 16 0
March	52 19 7	51 1 6	68 19 2	23 11 9	29	162	631 16 0
otals	560 0 5	539 6 6	794 6 3	..	30·58 (average)	1,717	6,696 6 0

Races and Dam, Middle Branch.

The dam in the middle branch of the Waimea Creek has been repaired and a by-wash constructed, so that there is but little danger of any accident occurring during floods.

The races are in good order for carrying a supply of water to the Waimea Main Tail-race, but an extension, 34 chains in length has been applied for, which will be constructed as soon as the owners of the private property through which it will have to pass have signed the necessary deeds, which are now prepared. The owners of the private property have now agreed to give a right to construct the extension of the race through their land without compensation, but the agreements have not yet been signed.

Waimea Main Tail-race.

The holders of two claims have constructed tail-races from the main tail-race to their claims, and a third is now in the course of construction. One of the claims has started to open out, but so far very little work has been done.

Kelly's Terrace Drainage-tunnel.

The dispute between the trustees of this drainage-tunnel and the former contractors caused very considerable delay in the prosecution of this work, but it is now being proceeded with in a satisfactory manner, and will shortly be completed.

The total length of this tunnel now driven is 5,230 ft., or within 20 ft. of one mile. A further length of 740 ft. has still to be driven before the ground proposed to be drained has been reached. A shaft (No. 3) has been sunk 10 ft. by 3½ ft., and 106 ft. in depth; the tunnel has been driven a further distance of 492 ft. during the year, and the error in the levels made by the former contractors rectified. The main bottom has been showing near the face. Fair prospects have been obtained in some of the wash by the contractors, and there is a fair probability of a considerable area of payable ground being opened up by the drainage-tunnel. The best prospects obtained do not appear to be on the main bottom, but in a layer about 2 ft. above the bottom.

Branch Race to Callaghan's.

The total sales of water from this race during the year amounted to £181 15s., and the expenditure for maintenance and repairs during the same period was £153 15s., leaving a credit balance of £28 on the year's transactions.

The average number of miners supplied with water from the race during the year was 7·62, and the approximate quantity of gold obtained by them was 475 oz., having a value of £1,852 10s.

The sales of water are £58 5s. less than during the preceding year, and the approximate quantity of gold obtained was 17 oz. less, having a value of £66 6s.

The number of miners supplied with water from the race was 3·38 less than during the preceding year.

The expenditure on maintenance and repairs was £13 6s. 4d. more than during the preceding year.

The result of the construction of the branch race to Callaghan's, which gives a constant and abundant supply of water to the Italian Gully and Callaghan's portion of the field, has been somewhat disappointing, as no new ground has been opened up, and the ground that has been worked during the year has been exceedingly poor. There has, however, been very little prospecting done during the year, although large areas of promising ground exist in the neighbourhood of the race, and are commanded by it.

Parties of miners prospecting in the vicinity of the race have been supplied with water from time to time, but water was only given after all paying parties had been fully supplied, and it was principally given during wet weather.

The following tabulated statement shows the revenue derived from sales of water, cost of maintenance, and approximate quantity of gold obtained by parties using water from the race for the year ended 31st March, 1901:—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1900.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
April	..	37 10 0	22 5 0	..	7	76	296 8 0
May	36 5 0	36 5 0	25 15 0	..	6	95	370 10 0
June	..	..	10 0 0	..	..	..	..
July	22 15 0	22 15 0	10 0 0	..	8	48	187 4 0
August	23 10 0	23 10 0	12 0 0	..	8	49	191 2 0
September	..	..	10 0 0	..	..	..	..
October	47 15 0	47 15 0	11 5 0	..	8	96	374 8 0
November	10 15 0	10 15 0	10 0 0	..	8	24	93 12 0
December	15 10 0	15 10 0	12 10 0	..	8	35	136 10 0
1901.							
January	25 5 0	25 5 0	10 0 0	..	8	52	202 16 0
February	..	..	10 0 0	..	..	..	..
March	..	..	10 0 0	..	..	..	..
Totals	181 15 0	219 5 0	153 15 0	..	7·62 (average)	475	1,852 10 0

Kumara Race.

The total sales of water from the Kumara Race for the year amounted to £2,181 11s. and the expenditure for maintenance and repairs during the same period was £2,077 16s. 10d. showing a credit balance of £103 14s. 2d. on the year's transactions.

The average number of miners supplied with water for sluicing from this race during the year was 66·25, and the approximate quantity of gold obtained by them was 3,877 oz., having a value of £15,120 6s.

The sales of water are £277 4s. 8d. less than during the preceding year, and the approximate yield of gold is less by 562 oz., having a value of £2,191 16s.

The expenditure on maintenance and repairs during the year was £173 9s. 1d. more than during the preceding year, which was incurred by the necessity of enlarging the Kapitea Hill Race for the supply of water in sufficient quantity for Nos. 3, 4, and 5 main tail-races.

The decrease in the sales of water is accounted for by the fact that several claims were abandoned during the year as non-payable, and the claims running into No. 5 main tail-race had a large amount of work to do in opening up the new ground; in fact, some of the claims are not properly opened up now. The most of the ground sluiced away during the year was poor, and the earnings of the miners must have been very small.

The Kapitea Hill Race has been still further enlarged, and the balance of the timbered portions of the race lined to increase its carrying-capacity, and the race will now carry sufficient water to run two main tail-races at once, giving water both for sluicing and flushing. This race will now carry ninety-five sluice-heads of water from the head to Nos. 3 and 4 main tail-races, and thence to No. 5 main tail-race, sixty sluice-heads.

The head-race tunnel has been regularly examined and repaired during the year, and will now carry 150 sluice-heads of water when that quantity is required.

Although the best ground on the Kumara Goldfield, so far as at present known, has been sluiced away, there is still a large area of ground still unworked that will pay small wages for many years to come.

The plentiful supply of water now available, and the reduction in the price of water, which took place on the 15th January last, will do much to keep the field going ahead, and cause large areas of ground to be worked that would otherwise have to be abandoned as non-payable. And, although the price of water has been reduced by one-third, there is but little doubt that the year 1901–2 will be a more prosperous year financially than the year just past, as all the claims running into No. 5 main tail-race will be in good working condition, and some of the claims that have done little or no sluicing during the past year are making preparations for a fresh start since the price of water was reduced.

Besides the sales of water above referred to, water to the value of £740 17s. 1d. was supplied for opening out the claims running into No. 5 main tail-race, and to claims having a succession of poor washings. In no case was water given without full inquiry being made as to the necessity for so doing, and more claims would have had to be abandoned had concessions not been made. The supply of water for opening out the claims running into No. 5 main tail-race was in accordance with the practice that has obtained on the field since the races were first constructed.

Large quantities of water were also supplied for flushing the main tail-races—No. 2, ten sluice-heads; No. 3, twenty-three sluice-heads; No. 4, ten sluice-heads; and No. 5, twenty sluice-heads. In no case was less than the above quantities supplied and when water was plentiful, which was the case throughout nearly the whole year, quantities much in excess of the above were supplied, as it was better to use it in this way than let it go to waste down the creeks, where it would benefit no one.

Water for washing-up was also supplied to miners using water from the race, and the Borough of Kumara was supplied with water for fire purposes.

During the year water was running to waste over the dams forty-nine days, and during that time 57¾ days' water for the whole field was lost for want of storage-room. The miners observed twenty-four holidays during the year. There was no water for the channels for eighteen days, and the dams were empty for seven days.

The table attached shows the number of days in each month on which water was running over the dams and quantity lost, the number of holidays observed, the number of days on which there was no water for channels, and the days on which the dams were empty.

Month.	Water running over Dam.	Quantity of Water lost.	Holidays.	No Water for Channel.	Dams empty.
1900.	Days.	Days.	Days.	Days.	Days.
April	7	10	6	...	...
May	7	9¾	1	...	...
June	...	...	...	12	6
July	4	3	...	3	1
August...	5	9	...	...	...
September	1	½	...	...	...
October	4	4½	...	3	...
November	6	11	...	...	...
December	4	3½	7	...	...
1901.					
January	2	3½	9	...	...
February	6	1	1	...	...
March	3	2	...	...	...
Totals	49	57¾	24	18	7

The following tabulated statement shows the revenue, cost of maintenance, approximate quantity of gold obtained, and number of men employed on claims using water from the race :—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1900.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
April	108 8 6	259 12 6	196 3 2	314 3 0	69	195	760 10 0
May	259 2 0	220 10 0	220 13 7	352 15 0	69	455	1,774 10 0
June	167 4 3	154 0 0	223 7 11	365 19 3	75	293	1,142 14 0
July	220 5 9	234 0 0	234 2 6	352 5 0	78	389	1,517 2 0
August	265 12 4	146 19 6	239 1 9	471 0 10	72	467	1,821 6 0
September	220 6 10	271 19 0	162 9 6	419 12 1	72	396	1,544 8 0
October	235 19 2	143 0 0	134 18 1	512 11 3	67	415	1,618 10 0
November	143 2 5	192 0 0	143 8 1	473 7 4	67	257	1,002 6 0
December	111 0 1	64 10 0	157 17 6	510 0 0	62	189	737 2 0
1901.							
January	122 2 7	115 5 0	120 16 11	520 2 2	55	221	861 18 0
February	196 2 1	144 10 11	138 3 4	568 8 9	55	355	1,384 10 0
March	132 5 0	160 0 0	106 14 6	540 13 9	54	245	955 10 0
Totals	2,181 11 0	2,106 6 11	2,077 16 10	..	66·25 (average)	3,877	15,120 6 0

The following statement shows the claims that have been sluicing on the Kumara field during the year ended the 31st March, 1901; also the number of men in each claim, fall and width of tail-races, number of sluice-heads used in sluicing, number of cubic yards sluiced away per hour, and race from which the water was supplied :—

Name of Party.	Number of Men employed in each Claim.	Fall to 12 ft. in Tail-race.	Width of Boxes in Tail-race.	Number of Sluice-heads used in Sluicing.	Auriferous Wash sluiced away per Hour.	Race from which the Water is supplied.	Remarks.
No. 3 channel—		In.	In.		Cub. yd.		
Light and party ...	5	6	22	10	60	Kumara Race	Sluiced six months.
Neame and party ..	3	5	22	10	50	"	
Rochford and party ...	4	8	22	8	64	"	
Rochford and party ...	3	4½	22	10	45	"	Late Neville's.
Williams and party ...	3	6	22	10	60	"	Late Conaghan.
No. 4 channel—							
Cullen and party ...	6	7	24	11	77	"	
Long Tunnel Company..	7	6	26	22	132	Private race	
No. 5 channel—							
Burger and party ...	5	8	24	10	80	Kumara Race	
Thomson and party ...	4	8	24	10	80	"	
Morgan and party ...	3	8	24	10	80	"	
Thorn and party ...	4	8	24	10	80	"	
Candie and party ...	4	8	26	10	80	"	Sluiced two months.
Private races—							
Lee and party ...	3	8	24	12	96	"	
Pascoe and party ...	6	7	26	12	84	"	
Shrives and party ...	3	12	30	10	120	"	Abandoned.
Shroder and party ...	3	9	26	10	90	"	"
Bowden and party ...	3	8	24	10	80	"	
Roberts and party ...	3	8	22	8	64	"	
Moynihan and party ...	10	8	24	22	176	Private Race.	
Arnerich and party ...	3	8	24	15	120	"	

The following tabulated statement shows the revenue, cost of maintenance, number of men employed, and approximate quantity of gold obtained from claims supplied with water from Waimea–Kumara water-races (which also include Callaghan's branch race) for the year ended the 31st March, 1901:—

Month.	Sales of Water.	Cash received for Sales of Water.	Expenditure.	Outstanding Moneys at the End of each Month.	Number of Men employed.	Approximate Quantity of Gold obtained.	Value of Gold obtained.
1900.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		Oz.	£ d.
April	139 12 8	329 12 6	284 3 10	338 6 8	106	381	1,485 18 0
May	342 8 3	290 11 6	298 12 9	376 18 8	108	703	2,741 14 0
June	205 15 6	197 18 3	287 7 1	389 12 11	106	390	1,521 0 0
July	295 17 0	309 1 0	314 0 8	375 18 8	116	598	2,332 4 0
August	342 6 6	218 6 9	307 15 11	493 19 6	115	678	2,644 4 0
September	264 16 0	314 9 2	225 8 8	442 10 9	101	531	2,070 18 0
October	340 10 10	244 7 9	203 2 3	539 13 3	110	682	2,659 16 0
November	209 11 2	258 4 1	208 8 3	496 6 0	104	453	1,766 14 0
December	164 4 3	116 18 0	247 6 8	532 18 8	102	343	1,337 14 0
1901.							
January	193 10 6	195 13 3	263 18 10	538 6 4	95	416	1,622 8 0
February	239 9 2	178 14 8	199 19 6	591 7 11	77	487	1,899 6 0
March	185 4 7	211 1 6	185 13 8	564 5 6	83	407	1,587 6 0
Totals	2,923 6 5	2,864 18 5	3,025 18 1	..	101·91 (average)	6,069	23,669 2 0

Kumara Deep Level.

No work of any kind has been done in connection with the Kumara Deep-level Drainage-tunnel during the year, but miners are still prospecting the deep levels by independent drives from the face of the terrace fronting the Teremakau River.

Wainihinihi Race.

This race was completed and the water turned on in September last, but on the 22nd November a slip occurred in the ditching round the steep rocky siding, between 21 and 23 chains from the head of the race. An examination of the ground after the slip had occurred showed that it was caused by a fault in the rock that was not observed during the construction of the race at that place. It was found necessary to abandon that portion of the ditching, and construct a tunnel 360 ft. in length to avoid the dangerous ground. Of this, 220 ft. was driven on the 31st March, 1901, leaving 140 ft. still to drive. As soon as this work is done, and boxing where necessary completed, the water will be again turned on. The dam at the head has stood very severe tests, as the river has been in flood several times, and the by-wash is acting well. There is still a little work to do at the by-wash before it is completed.

I have, &c.,
ALEX. AITKEN, Manager, Water-races.

[For table showing the result of working the Kumara Water-race for seventeen years, see page 124A.]

MOUNT IDA AND BLACKSTONE HILL WATER-RACES.

Mr. R. MURRAY, Manager, Mount Ida and Blackstone Hill Water-races, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Naseby, 17th April, 1901.

I have the honour to submit the following report on the Mount Ida and Blackstone Hill Water-races for the year ending the 31st March, 1901:—

MOUNT IDA WATER-RACE.

The total sales of water from this race during the year amounted to £1,552 14s., and the expenditure on maintenance and repairs for the same period £1,246 12s. The total cash received was £1,553 2s. 9d., a credit balance in favour of the race of £306 10s. 9d. On account of payment in advance, free water to the value of £61 7s. 1d. was supplied. Free water to the value of £3 6s. 10d. was supplied to assist in opening up new claims, and free water for washing up was also supplied to the value of £108 3s. 9d. The total value of water supplied from this race during the year was £1,725 11s. 8d. The average number of miners supplied with water was 48·54, and the approximate quantity of gold obtained by parties using water from this race was 2,491 oz., valued at £9,590 7s.

To meet the extra demand for water the race had to be widened from the Eweburn Reservoir to Coall-pit Dam, and to do this the water was off during the whole of April and to the 8th May, when the water was then on, but only to those supplied from Coal-pit Dam, as, on account of S. Hewitt's tail-race in Coal-pit Gully collapsing, necessitating the shifting and lengthening of the head-race siphon crossing the same; until this was done the miners on the east side of Coal-pit Gully could not be supplied until the 24th. During this period there was only sufficient water allowed along the upper portion of the race to keep the rabbits from burrowing into it, and allow the maintenance-men to do whatever repairs required to be done.

The winter set in very early—16th June, twenty-two days earlier than last year, continuing up to the 22nd July, when, a thaw having set in, a start was able to be made with the cleaning-out of the race on the 27th. After getting as far as the Idaburn with the cleaning-out the water

from this inwards, supplemented by the reservoir, was turned on to the mines on the 16th August. The sod-work done in widening the race from the reservoir has stood the winter very well, preventing but little of the high sidelings from coming away, enabling this portion of the race to be cleaned out at a small cost compared with previous expenditure. From the reservoir upwards to Hill's Creek I gave it a heavy side-trimming: this was done so as to carry as much water as possible in order to make the most of that stored in the reservoir when the dry season set in. Owing to the scarcity of labour I was unable to finish the cleaning-out of the race until the 10th October.

Up to the 28th September the weather was very dry, with continuous frost at night. On this date the weather broke and continued rough and wintry, with a phenomenally wet season and several falls of snow on the range, until the first week in February, when dry weather set in with occasional days of extreme heat, continuing dry, with the exception of a few heavy showers of rain during the latter half of March.

The number of days on which no water was supplied to the miners was: Widening race, forty; Christmas holidays, two; New Year, one; Good Friday, one; winter, fifty-five: a total of ninety-nine days. The time lost in widening the race, and the reduction from the 15th January of one-third in the price per head of water, more than account for the difference in revenue of this compared with that of last year.

There has been a sufficient supply of water during the year to meet all the demand for day water; although four more elevating claims than those at work last year have been supplied, the amount stored in the reservoir enabling this to be done.

As almost all the payable ground commanded by the Government head race (where fall could be got for ground-sluicing) is worked out, the principal workings are carried on by hydraulic elevating in the flat beds of the creeks. The principal scene of operations is main or Hogburn Gully, in which there are eleven of these plants at work. There are also three in Enterprise and two in Coal-pit Gullies, making a total of sixteen in all, thirteen of which are supplied with water from the Government race. I believe all the claims are doing fairly well.

With the exception of three breaks in the race during the year—one of which, on account of the scarcity of labour, took eleven days to build up—the race has been kept in a good state of repair by the maintenance men. No new ground has been opened up in the district other than extending downwards along the already known creek-flats.

BLACKSTONE HILL WATER-RACE.

The total sales of water from this race during the year amounted to £91 15s. The total cash received was £88. The total cost of maintenance and repairs was £14. The approximate quantity of gold obtained was 120 oz., valued at £462. The average number of miners supplied with water from this race during the year was 4·27.

The race, having become so full of bottom-weed and side-growth from the falls to Blue Gully, had to be cleaned out in January, with other slight repairs in February and March. I expected to have had the remaining portion (from Blue Gully to where it crosses the Mount Ida Water-race) done before the end of March, but owing to the scarcity of labour this could not be effected. I need five or six men to do what is chiefly required—a good side-trimming. It would take a lesser number too long, and thus keep the claims of R. Johnstone and C. Rose too long idle for the want of water. The race is still capable of carrying a sufficient quantity to supply them. G. Martin ceased to take water in October; only R. Johnstone and C. Rose are now being supplied.

I have, &c.,
R. MURRAY, Manager.

WATER-CONSERVATION.

Mr. T. PERHAM, A.M.Inst.C.E., to the UNDER-SECRETARY for MINES, Wellington.

SIR,— Mines Department, Wellington, 6th June, 1901.

I have the honour to forward my fourth annual report, for the year ending the 31st March, 1901.

NORTH ISLAND.

Domestic Water-supplies, Thames-Hauraki Goldfields.

The Ohinemuri County Council submitted plans, specifications, and estimates to the department for a domestic water-supply for Mackaytown. They were revised and approved, and are now being carried out, with minor extensions since authorised in consequence of the necessity of providing for numerous new dwellings, principally constructed by the mine-workers from Karangahake, where suitable land for private residences is very limited. A subsidy of £1 for £1 has been granted for this work, to the extent of £351 on a total expenditure of £702.

Other domestic water-supplies initiated and now completed by the Ohinemuri County Council are Karangahake, Waitekauri, and Waihi. The two former have been examined, and, as temporary supplies both for the suppression of fire and domestic purpose—considering the sizes of the mains and storage-tanks, together with the raised elevations of reticulation—were found satisfactory, and approved, pound-for-pound subsidies have been paid to the extent of £607 6s. 5d. for Karangahake, and £445 2s. 5d. for Waitekauri; total, £1,052 8s. 10d.

An application for assistance towards the cost of the Waihi supply was refused on account of the doubtful purity of the water, and insufficient elevation of the intake for fire-extinction purposes. The temporary supply laid down by the Council is now quite inadequate to the requirements of this rapidly growing township, and a better and more permanent supply is greatly needed. With this object in view, an application has been made to the department to proclaim a reserve of 115 acres

SUMMARY showing the RESULT of WORKING the KUMARA WATER-RACE for Seventeen Years, from 1st April, 1883, to 31st March, 1901.

Water supplied.	Year.	Rate per Sluice-head per Week.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total Value of Water sold.	Total Value Free for Assistance.	Total Value Free for Deviations.	Total for Construction of No. 3 Channel.	Total Value Water supplied.	Average Number of Sluice-heads supplied Daily.	Expenditure.
		£ 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.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.
Water sold ..	1883–84	3 0 0	371 16 5	465 2 1	700 2 6	583 9 7	702 7 6	626 16 3	808 10 5	777 3 9	774 17 11	698 2 6	1,064 0 0	774 6 0	8,346 14 11	..	..	..	..	..	..
Free	1883–84	..	46 2 6	44 5 0	183 11 8	108 19 2	108 0 0	85 7 6	244 7 6	172 18 9	63 12 6	103 9 2	86 5 0	139 3 4	..	1,386 2 1	..	..	..	..	..
			417 18 11	509 7 1	883 14 2	692 8 9	810 7 6	712 3 9	1,052 17 11	950 2 6	838 10 5	801 11 8	1,150 5 0	913 9 4	..	..	..	..	9,732 17 0	46·35	2,153 5 5
Water sold ..	1884–85	3 0 0	580 4 4	937 19 4	667 3 11	906 16 10	882 6 10	997 1 5	919 12 3	1,126 11 10	819 17 3	289 4 2	756 9 2	821 0 10	9,704 8 2	..	..	..	..	..	..
Free	1884–85	..	92 5 0	56 19 7	78 18 9	55 13 9	149 0 10	18 11 3	145 13 4	69 3 9	39 15 0	26 12 6	45 3 9	2 16 8	..	780 14 2	..	..	..	..	..
			672 9 4	994 18 11	746 2 8	962 10 7	1,031 7 8	1,015 12 8	1,065 5 7	1,195 15 7	859 12 3	315 16 8	801 12 11	823 17 6	..	..	..	..	10,485 2 4	49·92	1,656 0 1
Water sold ..	1885–86	2 10 0	665 16 0	796 6 9	893 5 3	745 19 7	773 19 10	943 13 5	953 15 6	997 7 8	697 13 5	686 4 0	708 15 8	935 19 7	9,788 16 8	..	..	..	..	..	..
Free	1885–86	..	24 13 9	9 2 0	..	..	23 15 0	31 3 4	22 1 3	18 11 10	18 7 2	49 1 4	1 5 0	13 2 6	..	221 3 2	..	..	..	..	..
			690 9 9	805 8 9	893 5 3	745 19 7	797 14 10	974 16 9	975 16 9	1,015 19 6	716 0 7	735 5 4	710 0 8	949 2 1	..	..	..	..	10,009 19 10	57·20	1,454 19 5
Water sold ..	1886–87	2 10 0	758 0 4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Water sold ..	1886–87	2 0 0	..	19 10 8	488 3 9	315 7 11	599 5 0	643 7 11	682 8 9	686 7 5	562 0 10	345 12 7	673 0 0	747 9 2	6,470 14 4	..	..	..	..	..	..
Free	1886–87	..	..	776 0 11	242 0 11	40 13 9	120 9 7	83 15 10	74 5 0	45 9 2	32 15 0	46 8 9	49 16 8	36 3 4	..	1,547 18 11	..	..	..	..	..
			758 0 4	795 11 7	730 4 8	356 1 8	719 14 7	727 3 9	706 13 9	731 16 7	594 15 10	392 1 4	722 16 8	783 12 6	..	..	..	..	8,018 13 3	56·19	1,398 18 10
Water sold ..	1887–88	2 0 0	535 5 10	679 7 8	167 10 10	656 4 7	684 16 1	694 5 0	591 12 1	710 0 0	535 10 10	519 15 5	670 17 6	734 4 5	7,169 10 3	..	..	..	..	..	..
Free	1887–88	..	26 11 8	40 19 2	15 13 9	23 10 0	47 7 11	4 11 8	34 16 8	42 10 0	27 10 0	28 6 8	19 11 8	15 17 3	..	347 6 5	..	..	..	..	..
			561 17 6	720 6 10	183 4 7	679 14 7	732 4 0	698 16 8	626 8 9	752 10 0	553 0 10	548 2 1	690 9 2	750 1 8	..	..	..	..	7,516 16 8	53·68	982 12 0
Water sold ..	1888–89	2 0 0	490 6 8	338 7 7	532 1 1	626 19 10	667 8 3	542 8 4	702 12 6	664 1 7	395 12 3	465 2 1	623 18 4	667 8 4	6,716 6 10	..	..	..	..	..	..
Free	1888–89	..	107 17 3	90 18 0	87 1 4	75 1 10	32 10 0	16 9 5	38 1 4	13 0 0	34 9 2	58 6 8	90 10 10	74 13 4	..	492 0 0	227 0 0	..	..	..	..
			598 3 11	429 5 7	619 2 5	702 1 8	699 18 3	558 17 9	740 13 10	667 1 7	430 1 5	523 9 7	714 9 2	742 1 8	..	..	..	..	7,435 6 10	53·10	1,024 1 9
Water sold ..	1889–90	2 0 0	401 13 4	495 16 4	256 16 8	377 16 3	353 4 2	237 7 11	318 10 10	293 8 4	159 18 9	219 15 10	248 19 7	186 16 8	3,550 4 8	..	..	..	..	..	..
Free	1889–90	..	45 15 0	55 3 4	43 0 0	92 15 0	105 15 0	93 1 8	41 10 0	103 18 4	105 13 4	48 17 6	54 8 4	71 5 0	..	396 2 6	465 0 0	..	..	..	..
Free, No. 3 Channel	1889–90	..	..	..	..	..	122 19 1	335 1 3	380 11 8	275 8 0	97 13 4	6 0 0	221 18 1	102 11 5	..	..	..	1,492 2 10	..	..	..
			447 8 4	550 19 8	299 16 8	470 11 3	581 18 3	665 10 10	690 12 6	672 14 8	363 5 5	274 13 4	525 6 0	360 13 1	..	..	..	..	5,903 10 0	42·16	1,424 13 3
Water sold ..	1890–91	2 0 0	300 12 6	355 11 11	368 3 2	423 9 0	622 17 11	666 7 1	720 16 1	701 5 10	578 1 8	546 17 11	691 17 11	689 11 8	6,665 12 8	..	..	..	..	..	..
Free	1890–91	..	113 5 0	119 14 2	70 7 11	71 17 6	82 9 7	110 16 8	93 13 9	106 0 10	57 5 5	113 6 8	133 2 6	130 5 10	..	409 5 5	793 0 5	..	..	..	..
Free, No. 3 Channel	1890–91	..	272 11 11	247 3 6	246 17 10	115 2 11	32 2 2	..	..	..	..	..	..	..	..	..	..	913 18 4	..	..	..
			686 9 5	722 9 7	685 8 11	610 9 5	737 9 8	777 3 9	814 9 10	807 6 8	635 7 1	660 4 7	825 0 5	819 17 6	..	..	..	..	8,781 16 10	62·72	1,766 4 3
Water sold ..	1891–92	2 0 0	616 5 10	655 4 11	542 9 1	179 11 11	426 16 1	769 15 5	784 13 8	642 4 2	469 10 0	291 3 9	543 7 6	724 8 8	6,645 11 0	..	..	..	..	..	..
Free	1891–92	..	143 11 5	191 16 8	44 3 6	..	82 16 11	151 14 7	118 10 1	233 1 8	213 11 3	137 0 10	64 11 8	28 9 2	..	996 4 5	413 3 4	..	..	..	..
			759 17 3	847 1 7	586 12 7	179 11 11	509 13 0	921 10 0	903 3 9	875 5 10	683 1 3	428 4 7	607 19 2	752 17 10	..	..	..	..	8,054 18 9	57·53	1,584 10 11
Water sold ..	1892–93	2 0 0	495 17 1	505 12 11	493 5 10	495 13 6	602 2 8	635 1 3	571 1 8	458 7 1	382 2 1	390 19 2	450 7 6	308 10 0	5,789 0 9	..	..	..	..	..	..
Free	1892–93	..	44 18 9	80 2 6	72 4 2	61 2 1	43 5 10	38 2 6	44 0 10	66 2 6	157 6 8	94 4 2	77 10 10	64 2 6	..	444 15 8	398 7 8	..	..	..	..
			540 15 10	585 15 5	565 10 0	556 15 7	645 8 6	673 3 9	615 2 6	524 9 7	539 8 9	485 3 4	527 18 4	372 12 6	..	..	..	..	6,632 4 1	47·35	1,782 11 0
Water sold ..	1893–94	2 0 0	451 16 5	480 13 7	541 11 11	542 9 6	575 10 5	486 9 2	539 8 4	402 11 11	451 5 5	303 0 10	415 5 5	392 1 8	5,582 4 7	..	..	..	..	..	..
Free	1893–94	..	101 5 2	119 5 7	99 4 6	110 7 1	92 9 10	147 16 2	112 11 0	164 18 5	82 0 4	112 3 10	132 15 10	70 6 10	..	1,306 0 3	39 4 4	..	..	..	..
			553 1 7	599 19 2	640 16 5	652 16 7	668 0 3	634 5 4	651 19 4	567 10 4	533 5 9	415 4 8	548 1 3	462 8 6	..	..	..	..	927 9 2	49·48	1,917 8 5
Water sold ..	1894–95	2 0 0	477 1 8	497 17 4	501 3 4	482 1 3	513 7 11	413 0 5	213 19 2	375 7 6	428 8 9	298 2 5	198 7 1	308 2 11	4,646 19 9	..	..	..	..	..	..
Free	1894–95	..	76 11 8	98 12 8	103 1 3	92 17 11	83 5 0	122 17 6	96 4 2	105 6 8	81 11 8	74 14 2	72 17 6	86 12 6	..	1,054 12 8	40 0 0	..	5,741 12 5	41·01	1,976 17 7
			553 13 4	536 10 0	604 4 7	574 19 2	596 12 11	535 17 11	310 3 4	480 14 2	510 0 5	372 16 7	271 4 7	394 15 5	..	..	..	..	..	..	..
Water sold ..	1895–96	2 0 0	277 5 10	379 15 0	349 12 1	322 15 10	345 1 8	354 1 8	351 16 8	336 5 5	331 0 0	315 15 5	336 3 4	406 18 4	4,106 11 3	..	..	..	..	..	..
Free	1895–96	..	95 3 4	96 1 8	139 19 2	81 16 3	76 19 7	77 10 10	110 9 7	114 12 1	67 3 4	92 8 4	90 18 11	86 16 3	..	1,129 19 4	..	..	..	..	..
Free, No. 4 Channel	1895–96	..	..	..	..	..	5 12 6	39 14 2	62 7 6	56 9 2	65 4 7	32 10 0	36 1 3	34 15 10	..	..	..	332 15 0	5,569 5 7	39·78	1,943 8 7
			372 9 2	475 16 8	489 11 3	404 12 1	427 13 9	471 6 8	524 13 9	507 6 8	463 7 11	440 13 9	463 3 6	528 10 5	..	..	..	..	..	..	..
Water sold ..	1896–97	{2 0 0 / 1 10 0}	286 13 4	307 0 0	166 9 6	387 13 8	318 10 7	310 7 4	356 16 4	322 8 10	144 13 3	319 1 3	284 1 3	299 1 8	3,502 17 0	..	..	..	..	..	..
Free	1896–97	..	100 5 0	99 4 10	22 18 2	31 1 10	12 19 4	22 16 10	13 18 4	12 11 3	12 18 9	51 18 9	58 16 2	39 19 9	..	479 9 0	..	..	..	..	..
Free, No. 4 Channel	1896–97	..	15 0 0	14 16 8	4 0 10	18 0 0	7 0 0	18 0 0	9 0 0	12 0 0	7 0 0	6 0 0	10 0 0	13 0 0	..	..	..	133 17 6	4,116 3 6	40·41	1,786 15 9
			401 18 4	421 1 6	193 8 6	436 15 6	338 9 11	351 4 2	379 14 8	347 0 1	164 12 0	377 0 0	352 17 5	352 1 5	..	..	..	..	..	..	..
Water sold ..	1897–98	..	243 11 2	240 5 1	204 19 1	210 11 1	266 15 6	147 4 8	296 9 10	213 1 9	255 19 11	208 16 2	415 13 9	185 15 3	2,889 3 3	..	..	..	..	..	..
Free	1897–98	..	29 1 3	39 16 3	18 1 10	29 5 0	29 0 0	51 5 0	49 14 4	52 10 0	38 2 6	29 1 3	..	48 15 0	..	414 12 5	..	..	..	..	..
Free, No. 4 Channel	1897–98	..	..	..	..	..	..	..	..	..	2 10 0	14 0 0	17 0 0	..	..	33 10 0	..	..	3,337 5 8	..	1,841 0 0
			272 12 5	280 1 4	223 0 11	239 16 1	295 15 6	198 9 8	346 4 2	265 11 9	296 12 5	251 17 5	432 13 9	234 10 3	..	..	..	..	..	..	..
Water sold ..	1898–99	..	160 6 6	194 11 5	171 13 0	226 15 6	224 0 6	251 9 1	202 2 11	233 18 5	258 15 4	196 19 9	320 17 10	270 4 2	2,711 14 5	..	..	..	..	..	..
Free	1898–99	..	28 15 0	59 1 3	30 7 6	42 3 9	45 13 9	54 7 6	33 15 0	37 10 0	28 8 1	28 2 6	37 10 0	44 1 3	..	469 15 7	..	..	..	..	..
Free, No. 4 Channel	1898–99	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,181 10 0	..	2,174 3 11
			189 1 6	253 12 8	202 0 6	268 19 3	269 14 3	305 16 7	235 17 11	271 8 5	287 3 5	225 2 3	358 7 10	314 5 5	..	..	..	..	..	..	..
Water sold ..	1899–1900	1 10 0	227 5 6	312 9 1	251 19 9	244 19 2	196 14 3	157 7 1	218 13 4	129 12 10	177 13 11	122 1 4	193 0 2	226 19 3	2,458 15 8	..	..	..	..	..	..
Free	1899–1900	..	44 7 6	52 9 0	46 17 5	55 18 9	43 7 7	40 6 3	46 2 6	44 7 6	46 17 6	41 5 0	45 0 0	42 15 0	..	549 14 0	..	..	..	..	..
Free, No. 5 Channel	1899–1900	..	..	..	..	..	..	..	..	..	..	..	36 11 2	93 14 11	..	..	..	130 6 1	3,138 15 9	43·60	1,904 7 9
			271 13 0	364 18 1	298 17 2	300 17 11	240 1 10	197 13 4	264 15 10	174 0 4	224 11 5	163 6 4	274 11 4	363 9 2	..	..	..	..	..	..	..
Water sold ..	1900–1901	{1 10 0 / 1 0 0}	108 8 6	259 2 0	167 4 3	220 5 9	265 12 4	220 6 10	235 19 2	143 2 5	111 0 1	122 2 7	196 2 1	132 5 0	2,181 11 0	..	..	..	..	..	..
Free	1900–1901	..	34 7 6	49 6 3	35 18 1	41 5 0	44 4 4	53 8 8	61 14 4	51 3 8	50 17 5	12 15 8	..	..	..	435 0 11	..	..	..	..	..
Free, No. 5 Channel	1900–1901	..	68 18 2	14 1 3	47 10 0	78 18 1	21 14 4	4 4 5	4 4 4	26 11 3	11 17 6	1 12 1	13 8 1	12 16 8	..	..	..	305 16 2	2,922 8 1	45·91	2,077 16 10
			211 14 2	322 9 6	250 12 4	340 8 10	331 11 0	277 19 11	301 17 10	220 17 4	173 15 0	136 10 4	209 10 2	145 1 8	98,926 17 2	12,894 6 11	2,375 15 9	3,308 15 11	117,505 15 9	..	30,849 15 9

on the Mangatoetoe Creek for the purpose, which embraces the site for a dam and reservoir, selected by me, and mentioned in my preliminary report on permanent supplies for these mining townships. Undoubtedly the water from this source is the purest and most permanent to be obtained in the neighbourhood, and the elevation sufficient to command a fair pressure for fire-extinction.

Applications have been made for additional supplies for the growing mining townships of Golden Cross and Waikino, a portion of the latter being a Government township; and at a higher elevation a private township has been laid out, and is becoming rapidly settled by people working at the Waihi Company's battery. The county engineer has trial surveys in hand in connection with supplies for both settlements, but is of opinion that it will be an expensive undertaking, owing to the elevation of the tenements and the scarcity of pure and permanent creeks in the immediate neighbourhood. For Waikino a £2 for £1 subsidy has been asked for up to £800.

Complaint has been made by the Maoris residing round and about Paeroa, on the banks of the Ohinemuri River, that the water is rendered poisonous or impure, and a cause of sickness, by the cyanide discharge from the works at Waikino and Karangahake. It has been proposed to tap the mains of the Paeroa water system for a supply, but nothing as yet has been done in the matter. Although the water is always discoloured, I think it very doubtful that any deleterious influence of the cyanide tailings would extend as far as the immediate neighbourhood of Paeroa. This may be decided by analysis, and, if confirmed, it appears to me the Natives have a strong claim, as before the introduction of mining the water was in constant use by them.

Several plans and reports in connection with the above water-supplies have been revised and recorded.

South Island.

The Eweburn Storage-reservoir is now practically completed, securely fenced, and the back slope of the dam sown with grass. The miners in and around Naseby have had the benefit of the increased supply of water in the Mount Ida Race almost from the time the outlet-valves were erected.

Representations having been made to the department in December last that the dam showed signs of weeping, I met Mr. Hayes, Inspecting Engineer, in consultation, and we considered that there was no danger to be apprehended, and that the water percolated mainly through and over the natural spur upon which the eastern wing of the dam rests, and also ran down from the surface of the terrace land above, and partly flooded the flat between the back slope of the dam and the Mount Ida Water-race. As a precaution, however, it was considered advisable to draw off the water to below the line of seepage, strip the water-face of the spur, and sluice in a mixture of clay and gravel, which has since been carried out. I wish to point out that this weeping is no sign of weakness in the construction of the dam itself, as it is a well-known fact that all earthern dams, especially of such magnitude as the Eweburn, take sometimes years before they tighten up completely. The total cost to 31st March, 1901, has been £16,182 13s. 2d.

In connection with irrigation of the Ida Valley, a detail survey has been made of the dam-site selected last year at the lower end of the gorge, and working-plans, &c., for a masonry dam, are now in course of preparation. This reservoir is intended to supply the farms in the north end of the valley as far as the Poolburn, and if the scheme is carried out another reservoir will have to be constructed at the south end, either on the Moa Creek or in the Poolburn Gorge; if the latter, it will serve also for sluicing purposes at the German Hill claims, where the miners are in want of a much larger body of water than can be supplied by the present private dams constructed in the neighbouring small creeks.

Another excellent reservoir-site has been selected at the foot of the range about five miles from Hill's Creek, which, although not intended to form part of the present scheme of irrigation, may in the future be useful both for mining and irrigation. The Mount Ida Water-race, as in the case of the Eweburn Dam, passes close in front of it, which is a great advantage. The dam would be of earth, founded on a bed of lignite, and sound clay immediately below the surface, and, although some 7 chains in length, but only 25 ft. in height at the by-wash in the deepest part, consequently inexpensive. The reservoir would contain a large body of water, and be an excellent supplementary supply in case of a prolonged drought, as it is situated on a good permanent creek, running at a minimum of not less than six sluice-heads.

When in this neighbourhood I went over the section of the race from the Eweburn Dam northward to Idaburn, and found it in a very unsatisfactory condition. It requires costly repairs, and enlarging; and in many places heavy slips of loose schist rock have constantly to be cleared. At one place where the sideling is steep and the rock loosely laminated the bottom fell completely out. It is proposed to abandon this section of the race, and lay a siphon straight across the Wedderburn Valley, cutting off four miles and a half. The siphon will be 40 chains in length, of 27 in. wrought-iron slip-joint pipes, laid on the ground, with a small bridge across the creek. Beyond to the Idaburn, two miles and a quarter, the country is sounder, and the race can be enlarged, cleaned out and maintained cheaply. The siphon will serve for twenty-five or thirty years, but to maintain the race by the present route of four miles and a half over such treacherous ground will be very costly. The total length of this race is sixty-four miles from the intake on the Manuherikia River into Naseby—a great length to maintain; and if the section from the Eweburn Dam to the Idaburn—including the laying of the siphon—is enlarged it will in future be easy to keep the remainder in fair working-order. Recognising the advantage of storing all water to be obtained for use in exceptionally dry summer weather, I have prepared a report recommending that a total sum of £1,966 shall be allocated to this special and necessary work.

General.

Central Otago, or those portions known as the Maniototo Plain, Ida Valley, and Dunstan Flat, are during summer, and even winter, except for moisture by snow, exceedingly dry, the average

rainfall as before stated in my preliminary reports on water-conservation, being only 12 in. to 13 in.; under these circumstances, although the land is acknowledged to be good, farming is carried on at a disadvantage not known in other parts of the colony. In some cases, farmers (more enterprising than the majority), recognising the value of irrigation, have dammed up small streams and watered their crops by simply running plough-furrows.

REPORTS FOR MARINE AND PUBLIC WORKS DEPARTMENTS.

In additon to the above works pertaining to the Mines Department, the following reports have been prepared and designs formulated for the Marine and Public Works Departments: Protection to the Castlecliff Railway embankment at Wanganui, now nearly completed; advising and adjusting payments, &c., between Wairoa Harbour Board and engineer and contractors in connection with training-walls and river-improvements; inspection of protection-work at erosion of Wanganui River bank above Aramoho; examination of Opunake Bay relative to removing boulders from fair-way to jetty; and advising Mokau Harbour Board relative to clearing Mokau River and designing wharf at heads.

I have, &c.,
T. PERHAM, A.M.Inst.C.E.,
Engineer, Water-conservation.

The Under-Secretary, Mines Department, Wellington.

MINE-MANAGERS' AND BATTERY-SUPERINTENDENTS' EXAMINATION PAPERS.

QUESTIONS USED IN EXAMINATION OF MINING MANAGERS FOR CERTIFICATES.

SUBJECT A.—*The Laying-out and Construction of Shafts, Chambers, Main Drives or Levels, Adits, Uprises, and Stopes.*

1. Describe fully, and illustrate by sketches, the method you would adopt for sinking (*a*) a rectangular shaft and (*b*) a circular shaft through 50 ft. of soft, wet ground resting on hard rock. Show how you would secure the sides, and also how you would keep the water back after reaching hard ground.

2. Assume that a mine has to be opened out for an output of 300 tons of ore per day, winding during one shift only. Stoping will be carried on in three levels, the lowest being 600 ft. deep. Show necessary shaft arrangements, and sketch and figure the dimensions of compartments, cages, guides, chambers, &c., allowing space for a 16 in. pumping set and ladder-way. Describe the most economical method of dealing with the output named.

3. Describe fully, and illustrate by sketches, how you would deepen an existing shaft used for winding purposes without interfering with the output in any way; also show how you would deal with the water during sinking operations without disturbing an existing pumping plant. The safety of sinkers to be fully provided for.

4. Two reefs dipping west outcrop 650 ft. apart horizontally. The most easterly of the two has a hade of 60° from the horizontal; the other one hades 75°. If a vertical shaft is commenced on the outcrop of the last-named reef, what depth would it have to be sunk so that a crosscut in each direction—both being of equal length—would cut the two reefs?

5. Show in detail how you would proceed in driving a main-adit tunnel through wet running ground. When finished, the superficial area to be 50 square feet in the clear. Give measurements.

6. Describe and illustrate your method of constructing and securing an uprise in swelling ground.

7. If you had 20 acres of alluvial ground to work out from a shaft, describe, and show in plan and section, how you would open the mine and take out the auriferous gravel, assuming the latter to be 2 ft. 6 in. thick and lying horizontally. Safety and economy to be considered.

SUBJECT B.—*The Timbering of Shafts, Adits, Main Drives or Levels, Passes, Stopes, and generally the Systems of timbering Mines and filling up Old Workings.*

1. Sketch in detail the various methods of timbering a shaft having winding- and pumping-compartments, and describe fully the process of fitting timbers. Take both loose and solid ground into consideration.

2. Show fully how you would secure a level intended for endless-rope haulage (with two lines of rails) in heavy ground, and where the bottom is liable to swell. Give reasons for your answer.

3. Describe and illustrate how you would timber single and double passes, and the provision you would make for the safety of men travelling between the level and stopes.

4. It is required to reopen an old level which, although heavily timbered originally, has collapsed and remained closed for a considerable time. Describe how you would reopen same with safety and efficiency. Take all possible dangers into consideration.

5. The walls of a reef are of a puggy nature and the mine damp. Describe fully what your practice would be (under such conditions) to insure the safety of employés. Give reasons.

6. Show how you would timber the stopes in a 7 ft. reef having a pitch of 45°, assuming the hanging-wall to be jointy.

7. Illustrate your method of filling up the stopes referred to in the last question, and show how the timbers may be safely drawn for further use.

SUBJECT C.—*The Ventilation of Mines and Composition of Gases.*

1. Enumerate the several gases met with in metalliferous mines; give their symbols and gravities; describe (*a*) the characteristics of each, (*b*) the conditions under which they are likely to be found, and (*c*) the means whereby they can be detected.

2. Describe fully (*a*) water-blasts, (*b*) furnaces, and (*c*) fans. Illustrate each, and state under what conditions you would use them for mine-ventilation.

3. What is natural ventilation? Would you rely on it in a mine liable to give off noxious gas? Give reasons fully.

4. A fan circulates a current of air having a velocity of 23½ ft. per second through an airway measuring 7 ft. 9 in. by 6 ft. 4 in. The water-gauge shows a depression of 1·75 in. Assuming the fan to give a useful effect of 54 per cent., what I.H.P. must the engine develop, allowing 15 per cent. of its power to be absorbed by friction?

5. If you had a current of air of 16,000 cubic feet per minute which became fouled by a blower giving off CO_2 at the rate of 200 cubic feet per minute, how much more air would be required to dilute this gas so as to make it harmless, and to what extent would the ventilating-power have to be increased, the airways remaining unaltered?

6. Assume a mine, in which much timber is used, having three working levels, and the timbers of the middle level get on fire. It being impossible to extinguish with water, what action would you take to put out the fire, and what precautions would be necessary for the safety of the men engaged in the work?

SUBJECT D.—*Tapping Water in Mines, and the Mode of constructing Dams in Underground Workings to keep the Water back.*

1. In opening a new mine the water of an abandoned mine, 300 ft. in depth and flooded to the surface, has to be dealt with. What method would you adopt to cope with this water so as not to stop the work of developing the mine, and what precautions would you take to insure safety?

2. In sinking a shaft a heavy feeder of water is met with 200 ft. from surface. Show how you would deal with this feeder so as so insure safety and also economy in the future working of the mine.

3. A dam has to be built in a roadway 6 ft. 4 in. high by 4 ft. 10 in. wide. Head of water, 220 ft. Show how you would construct a suitable dam, and give total pressure on same.

4. If when driving a crosscut you come upon a borehole 400 ft. deep and carrying a considerable flow of water, how would you keep back the water, assuming that 20 ft. of strata immediately overhead was weak and somewhat soft?

SUBJECT E.—*Blasting and the Use of Explosives.*

1. What are the various explosives used in mines? Give composition and characteristics of each; also relative powers as compared with ordinary blasting-powder. Enumerate the conditions under which each explosive may be used to the best advantage.

2. What precautions are necessary to observe for the safe storage of the different classes of high explosives?

3. How would you prepare a frozen nitro-glycerine compound for safe and efficient use?

4. What material would you use for tamping the various explosives used in mines; and, assuming dynamite being used in a place where the air-current is inadequate to carry off the fumes, how would you make the place fit for working in after a shot has been fired?

5. Describe the various methods adopted for shot-firing. State the precautions to be taken before firing, and also in the event of a miss-fire.

SUBJECT F.—*A Knowledge of Arithmetic and the Method of keeping Mining Accounts.*

1. A block of quartz measures 20 chains in length; at one end it is 250 ft. high and 7 ft. 6 in. wide, at the other end it is 127 ft. high and 5 ft. wide. Assuming the tapering in height and thickness to be regular, how many cubic yards are contained in the block?

2. What is the value of four pieces of timber, each 24 ft. 6 in. by 1 ft. 2 in. by 10 in., at 12s. 6d. per 100 ft. superficial?

3. An ore assays 17 dwt. of gold per ton; battery extraction, 71 per cent.; value of gold, £3 17s. 6d. per ounce. What are the values of gold saved and lost after the treatment of 720 tons?

4. Show in detail the method of keeping wages and general working accounts; also of taking out the costs per ton per month of the various departments of mining and battery work, the amalgamation process only being adopted at battery.

ORAL.

SUBJECT G.—*A Knowledge of Part V. of "The Mining Act, 1898."*

SUBJECT H.—*Pumping Appliances and the Drainage of Mines.*

1. What is a siphon, and to what extent and under what conditions can it be advantageously used in mines?

2. Assume two pumps worked off one beam, one pump at each end. The beam is 20 ft. long between pump-centres, and balanced 12 ft. from the centre of a 16 in. pump having a stroke of 6 ft. What size of a pump is required at the other end of the beam to give a working balance?

3. A double-acting duplex pump has 4 in. plungers and a piston-speed of 85 ft. per minute. What quantity of water will it pump per hour, allowing 8 per cent. for slip?

4. Describe and illustrate bucket and ram pumps, and show under what conditions both may be worked together. Show connection with engine.

SUBJECT I.—*The Haulage in Shafts and on Underground Planes; also the Strength of Haulage Ropes and Chains.*

1. It is required to wind 300 tons per 8-hours shift up a shaft 600 ft. deep. With 90 lb. steam-pressure at boilers, and assuming coupled engines with drum on crank-shaft, give diameter of cylinders, length of stroke, and size of drum required.
2. Describe and sketch a good form of detaching-hook for the prevention of overwinding; also catches for arresting a cage in the event of a rope breaking.
3. Sketch in detail a headgear (poppet-heads) combining strength and rigidity with the least amount of material.
4. What are the various forms of self-acting inclines? Give conditions under which each form can be most advantageously used. Show under which system the greatest amount of material may be transported, and what other advantages (if any) are possible. Also show how and under what conditions incline sets may always be sent down one side instead of on alternate sides.

SUBJECT J.—*The Effect that Faults, Slides, and Mullock-bars have on Lodes, and how to ascertain the Direction of Slides and Heavals.*

1. Describe fully what is meant by throws and heaves in lodes, and the effect they produce.
2. In working on a lode of quartz having a bearing of due north, and it was cut off by the dislocation running east by north, having an underlie to the south, in what direction would you drive to pick up the lode again, and give your reason fully for same?
3. If you were driving along a lode that was cut off suddenly by mullock, how would you ascertain whether it was a slide or merely a bar of mullock?
4. If a lode cut out in depth, what indicator would you follow with the view of getting the lode again at greater depth?

SUBJECT K.—*A Knowledge of Underground Surveying, and of making Plans of the Underground Workings, showing the Dip or Inclination and Strike of the Reefs or Lodes.*

1. What is a compass? In what does a prismatic compass differ from an ordinary compass, and what are its uses? Explain what is meant by declination and dip.
2. What is the average difference in your district between a magnetic bearing of N. 23° 15′ E. and the true bearing?
3. Reduce the following traverse; give the distances on the meridian and perpendicular; compute the area enclosed when extremes are joined. Distances given in links.

N. 6° 14′ E,	486 links.
N. 15° 48′ E.,	1,538 "
N. 48° 16′ E.,	1,296 "
N. 19° 35′ E.,	246 "
S. 11° 50′ E.,	963 "

4. Describe to the Examiner the adjustments of any theodolite, and observe an angle.
5. State the regulation marks and give the limits of the different kinds of claims.
6. State your experience as a surveyor or surveyor's cadet or assistant.

SUBJECT L.—*A Knowledge of the Different Rocks where Gold, Silver, Tin, Copper, Zinc, Lead and Antimony are found, and the Formation of Lodes and Leads.*

1. What metallic ores are usually associated with granite slate, propolyte, serpentine, and limestone respectively?
2. What is the composition of the chief ores of silver, lead, tin, antimony, copper, and zinc, and where are they found in New Zealand?

QUESTIONS USED IN THE EXAMINATION OF BATTERY-SUPERINTENDENTS FOR CERTIFICATES.

SUBJECT A.—*The Different Modes of reducing and pulverising Ores.*

1. State where and by whom you were employed, and give the dates you were engaged in crushing-batteries where the bullion was recovered by cyanide-solution treatment.
2. In constructing a stamp-mill of forty stamps of 1,100 lb. each, give the dimensions of the stem, the head, shoe, and tappet, to correspond with the weight. Also show by calculation the maximum number of blows per minute that each stamp can give without falling on the cam, the height of drop being 7 in.
3. If you were constructing a forty-stamp mill with stamps of 1,050 lb. each, the height of drop being 8 in. and number of drops 95 per minute, show by calculation the horse-power required to work the mill; also the quantity of water required to give the necessary horse-power by using a Pelton water-wheel under a head of 160 ft., the wheel giving 80 per cent. of the actual power of the water. Likewise show by calculation the diameter of the nozzle required to discharge the actual quantity of water on the wheel.
4. Describe how you would construct the foundations for a stamp-mill, give a sketch of same, and show how you would bed the mortar-box.
5. Describe fully the different classes of machinery employed in New Zealand for crushing quartz, the quantity of ore that each would crush in twenty-four hours, the cost of wear-and-tear per ton of quartz crushed.
6. Describe fully the advantages and disadvantages of dry crushing. Give the distance you would set the dies in the mortar-box below the bottom of the screens, and your reason for same.

7. Give a sketch of a stamp-mill with rock-breakers, copper-plated tables, vanners, and cyanide plants; show the distance you would construct the different portions of the appliances from the tramway where the ore is dumped from the mine, and give your reasons for same.

SUBJECT B.—*Amalgamating-machines.*

1. Give a sketch of a combination pan, and describe fully the quantity of pulverised ore it will treat in twenty-four hours, its action, the quantity of quicksilver required in the pan, and the speed the pan requires to be worked at; also the horse-power required to work it.
2. What is the use of a settler? Describe its action; state the number of revolutions per minute it requires to be driven to give the best results, and give your reasons for same.
3. Describe the difference between a McKay pan and a Watson-Denny pan; give the speed that each requires to be driven, the quantity of ore each will treat in twenty-four hours, and the horse-power required to work them.
4. If you were erecting berdans 3 ft. 6 in. in diameter, what angle would you set them at; state the speed you would work them, the quantity of tailings each would treat in twenty-four hours, the horse-power required to drive them, and the quantity of quicksilver you would use in each berdan.

SUBJECT C.—*The Use of Quicksilver, and the Methods of using it in connection with the Extraction of Gold and Silver from Ores.*

1. Give the width, length, and gradient you would construct amalgamating-tables for each five heads of stamps, the thickness and dimensions of copper-plates you would use, and describe fully how you would coat the plates with quicksilver.
2. If quicksilver contained antimony and lead, how would you separate these metals from the quicksilver; also, describe fully how you would ascertain, by handling the quicksilver, that it contained these metals.
3. What effect, if any, has electrical action on quicksilver used for recovering gold from ores? If you were using electricity in connection with quicksilver for amalgamating purposes, describe fully how you would apply it.
4. Describe fully the method of removing the gold from copper-plated tables, how you would keep the plates clean and bright, and how often you would remove the gold from the plates if the mill were working continuously.
5. What effect, if any, has ore containing a large percentage of sulphurets on quicksilver?
6. Describe fully, step by step, how you would remove gold and silver from quicksilver and put it in bullion fit for the market.

SUBJECT D.—*Cyanide, Chlorination, and other Chemical Processes of recovering Gold and Silver from Ores.*

1. Give a sketch of a modern cyanide plant for treating auriferous ores, with five percolating-vats, showing all dimensions, and the position in which you would place the whole of the appliances.
2. How do you ascertain the strength of cyanide solutions best suited to the class of ore you have to deal with?
3. Describe fully how you dissolve cyanide of potassium, and what strength to make your stock solutions.
4. How do you recover the gold and silver from KCN solutions?
5. How many tons of a solution having 18 per cent. of KCN would you require to make up 50 tons of a sump solution containing 0·015 per cent. of KCN to a 0·3-per-cent. solution?
6. If you had 30 tons of a sump solution containing 0·02 per cent. of KCN, how many pounds of crude KCN would be required to make up a 0·25 solution, supposing the crude salt only contained 70 per cent. of KCN?
7. How many tons of a 0·6-per-cent. KCN solution would you require to make up 40 tons to a 0·25-per-cent. solution, supposing you were using a sump solution containing 0·01 per cent. KCN?
8. How many pounds of crude salt containing 64 per cent. KCN would you require to make up a stock solution containing 19 per cent. of KCN?
9. If a vat were 30 ft. in diameter, and it were required to treat 150 tons of ore, what depth of ore would there be in the vat?
10. A vat is 35 ft. 3 in. in diameter and 6 ft. deep; show by calculation its capacity in imperial gallons.
11. Describe fully the remedies you would apply if any of your workmen showed signs of cyanide poisoning.
12. Give a sketch of a modern chlorination plant; describe the difference between the Plattner process and the Newberry-Vautin process.
13. How is the gold precipitated from chlorine solutions? Describe fully.
14. Describe step by step how you recover the gold from chlorine solutions, and also from KCN solutions, until it is left in bars fit for market.

SUBJECT E.—*Sampling and Testing of Ores.*

Describe in detail the steps you would take to test samples from 5 cwt. of ore-stuff in order to determine its value for gold, silver, copper, lead, zinc, and any other valuable metals present. Quote in outline an example of such testing which has occurred in your own experience.

SUBJECT F.—*Knowledge of Arithmetic and Method of keeping Battery Accounts.*

1. The wages of 21 men for one month at a battery were £240; there were 8 men employed n crushing operations, 3 men assaying, 6 men in connection with the cyanide plant, and 4 cadets; the 8 men in connection with the crushing battery got twice as much as the men that were assaying, the wages of the 6 men in connection with the cyanide plant were £2 15s. less than the wages of the 8 men at the battery, and the wages of the 4 cadets amounted to seven-eighths of the wages of the assayers: how much did each man receive?

2. If pure gold was worth £4 4s. per ounce, what would be the value of 644 oz. of gold of 0·6432 fine?

3. If 12 men and 5 boys required 77 hours to do a certain piece of work, how long would it take 7 men to do the work, allowing that each boy did five-eighths of a man's work?

4. If you had 2,000 oz. of bullion of 0·4623 fine in gold, it being alloyed with silver, what would be its value, taking silver at 2s. 5d. per ounce and pure gold at £4 4s. per ounce?

5. The height of the walls of a building is 23 ft. 10 in., the ground is sloping away from the building on a gradient of 1 in 7: required the length of ladder to reach from the ground 15 ft. 2 in. on the slope from the building to the top of the wall.

6. Describe fully what is meant by double entry in book-keeping, and state the advantages or disadvantages of keeping books by this method.

SUBJECT G.—*A Knowledge of Part V. of "The Mining Act, 1898."*

1. What provisions are there in the Mining Act in regard to machinery in motion?

2. If any workman got disabled by an accident, has he to prove that the accident occurred owing to the negligence of the owner of the property before he can get compensation?

3. State what provisions there are in the Mining Act in regard to winding and winding-ropes?

4. What provisions are there in the Mining Act in regard to explosives?

5. Are there any provisions in the Mining Act in regard to dust from dry crushing? If so, describe fully what these provisions are.

6. Are there any provisions in the Mining Act in regard to the yield of bullion? If so, state what requires to be done. (*a.*) When are returns required to be made? (*b.*) To whom have they to be supplied?

LIST OF MINE-MANAGERS AND BATTERY-SUPERINTENDENTS WHO HAVE OBTAINED CERTIFICATES UNDER THE MINING ACTS.

As there have been several inquiries made as to the names of persons who hold certificates as mine-managers and battery-superintendents, the annexed is a complete list of those holding certificates at the date of this report, taken from the register:—

THE MINING ACT.

FIRST-CLASS SERVICE CERTIFICATES.

Issued under "The Mining Act, 1886," without Examination.

Adams, H. H., Waiorongomai.
Anderson, P., Thames.
Andrews, R., Coromandel.
Andrews, T., Thames.
Barclay, T. H., Thames.
Bennett, J., Alexandra.
Benney, J., Coromandel.
Black, T., Waiomoi.
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 SERVICE CERTIFICATES—*continued.*

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-manager's Certificates, issued on Production of Certificate from a Recognised Authority outside the Colony, 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.
Goold, A. L., Auckland.
Griffiths, A. P., Auckland.
Griffiths, H. P., Auckland.
Hailey, R. C., Dunedin.
McKenna, Thomas, Dunedin.
Williams, W. H., Auckland.

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1891."

Agnew, J. A., Thames.
Annear, William, Reefton.
Bennett, E. P., Thames.
Boydell, H. C., Coromandel.
Bradley, R. J. H., Te Puke.
Bray, E., Thames.
Bruce, Malcolm, Thames.
Carroll, J., Lvell.
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.

First-class Mine-managers' Certificates, issued after Examination, under "The Mining Act, 1898."

Arscott, R., Waihi.
Barker, B., Thames.
Evered, N. J., Waihi.
Johnson, H. J., Coromandel.
MacConachie, W., jun., Waihi.
MacDuff, R. B., Thames.
Stewart, F. Waihi.
Thomson, Thomas, Waihi.
Turnbull, E. V., Coromandel.

First-class Mine-managers' Certificates, issued under Section 313 of "The Mining Act, 1891."

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

First-class Mine-managers' Certificates of Competency granted to Holders of Provisional Warrants under Section 32 of "The Mining Act Amendment Act, 1896."

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

First-class Mine-managers' Certificates, issued to Inspectors of Mines, by virtue of Office under the Mining Acts, 1886, 1891, and 1898.

Binns, G. J., Dunedin.
Cochrane, N. D., Westport.
Gordon, H. A., Wellington.
Gow, J., Dunedin.
Green, E. R., Dunedin.
Hayes, J., Dunedin.
McLaren, J. M., Thames.
Tennent, R., Westport.
Wilson, G., Thames.

SECOND-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS.

Issued under "The Mining Act, 1891."

Adams, W. J., Thames.
Agnew, J. A., Coromandel.
Allen, Richard, Reefton.
Argall, A. E., Coromandel.
Bennett, C. H., Coromandel.
Begley, Thomas, Reefton.
Beard, W. T., Reefton.
Bone, William, Reefton.
Bowler, John, Thames.
Blair, Thomas, Kuaotunu.
Bray, Edwin, Reefton.
Brownlee, Thomas James, Thames.
Brokenshire, James, Thames.
Bolitho, James, Reefton.
Brown, John, Macrae's.
Bremner, John, Coromandel.
Borlase, J. H., Capleston.
Bunny, Joseph, Thames.
Byrne, John, Karangahake.
Caird, Alexander McNeil, Reefton.
Campbell, J., Kuaotunu.
Climo, Noah, Coromandel.
Comer, George, Thames.
Cowan, Hugh, Kuaotunu.
Corbett, T., Paeroa.
Comer, W. W., Thames.
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.
Gill, George, Thames.
Glasgow, T. M., Thames.
Goldsworthy, Henry, Thames.
Govan, Joseph, Thames.
Griffin, Patrick, Thames.
Grimmond, Joseph, Ross.
Goldsworthy, William, Mauku, Auckland.
Gemmings, Charles, Thames.
Gribble, James, Norsewood.
Guthrie, John, Wellington.
Guy, Robert, Kuaotunu.
Harvey, William, Reefton.
Hardman, James Edward, Thames.

SECOND-CLASS SERVICE CERTIFICATES AS MINE-MANAGERS—*continued.*

Issued under "The Mining Act, 1891"—continued.

Harris, R., Thames.
Hetherington, William, Thames.
Hicks, W., Thames.
Hill, Alex. Grey, Waikakaho.
Hore, John, Wellington.
Hollis, Fred. J., Waihi.
Hornibrook, H. P., Kuaotunu.
Jamieson, John, Reefton.
Johnstone, William, Collingwood.
Jobe, James, Thames.
Johns, Thomas, Thames.
Kendall, Henry, Thames.
Kerr, George, Kamo.
Kirker, Thomas, Thames.
Laughlin, David, Thames.
Law, John, Thames.
Lough, H., Thames.
Loughlin, S., Thames.
McLean, James, Thames.
McLean, Alex., Coromandel.
McLean, Charles, Thames.
McCormick, Charles, Coromandel.
McQuillan, John, Reefton.
McNeill, Daniel, Thames.
McNeill, George, Upper Kuaotunu.
McCombie, John, Karangahake.
McEwen, James, Reefton.
McLoghry, Archibald, Karangahake.
Mackay, William, Nenthorn.
Martin, James, Reefton.
Meagher, John, Karangahake.
Mills, George, Thames.
Mayn, John, Coromandel.
Martin, David, Black's Point.
Morgan, William, Upper Thames.
Moorecroft, Thomas, Thames.
Milne, John, 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.
Potts, W. H., Thames.
Primrose, J., Kuaotunu.
Pettigrew, Robert, Sydney.
Peebles, Alexander, Kuaotunu.
Phillips, W. H., Thames.
Pollock, John, Thames.
Rabe, Henry, Thames.
Reid, Thomas Groat, Thames.
Rickard, John, Thames.
Richards, A. H., Kuaotunu.
Radford, Thomas, Thames.
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.
Whisker, Charles, Thames.
White, John S., Karangahake.
Wilson, James R. S., Kuaotunu.
Wilson, J. G., Thames.
Woodcock, James, Thames.
Worth, Robert, Waihi.

Second-class Mine-manager's 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.
McLellan, William, Waitekuri.
Mellett, Richard Sheridan, Waitekauri.
Napier, James, Karangahake.
Noble, James R., Karangahake.
Park, James, Thames.
Shepherd, Henry Franklin, Waihi.
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.
Clarke, R., Waitekauri.
Clarke, W. J., Waihi.
Day, A. T., Thames.
Dixon, Clement, Waihi.
Doveton, G. D., Thames.
Fleming, G. C. S., Thames.
Gray, J. W., Waihi.
Hayward, F. W., Komata.
Jackson, J. H., Paeroa.
Jones, Achison, Waihi.
Kidd, F. D., Thames.
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 Act, 1898."

Adams, J. H., Thames.
Allen, D. V., Thames.
Baker, W. H., Thames.
Banks, Ernest J., Thames.
Barrett, J. J., Karangahake.
Bishop, T. O., Reefton.
Bradley, R. J. H., Karangahake.
Burns, William, Waiomo.
Bush, H. R., Thames.
Carpenter, W. E., Karangahake.
Coote, J. M., Thames.
Couper, J., Thames.
Croucher, Herbert, Waihi.
Donnelly, Thomas, Waihi.
Draffin, Eugene, Kuaotunu.
Ellis, L. L., Waitekauri.
Empson, J. B., Karangahake.
Evans, W. B., Reefton.
Fletcher, H. T., Katikati.
Fraser, J. M., Reefton.
Grayden, J., Waitekauri.
Grayden, Peter, Thames.
Grumitt, P. H. (Oamaru), Thames.
Hargraves, E. P., Waihi.
Haszard, T. R. C., Waitekauri.
Kidd, R. B., Waitekauri.
Launder, G. H., Waitekauri.
Lawless, L. J., Paeroa.
Maltman, Albert, Reefton.
McEwen, J. A., Reefton.
Reid, J. E., Great Barrier.
Rosewarne, R. H., Thames.
Sanford, A. G., Waihi.
Stephens, H., Dunedin.
Thurlow, J. R., Coromandel.
Tomlinson, W. F., Dunedin.
Watson, A. B., Waitekauri.

NUMBER of MACHINES employed in QUARTZ-MINING in the AUCKLAND DISTRICT, and the VALUE thereof, for the Year ended the 31st December, 1900.

Mining District.	Machinery employed in Quartz-mining.									
	Steam-engines employed winding, crushing, &c.		Crushing-machines.	Stamp-heads.	Water-wheels.	Whims.	Whips and Pulleys.	Derricks.	Berdans.	Approximate Value of all Mining Plant included in this Return.
	Number.	Aggregate Horse-power.								
										£
Ohinemuri ..	57	3,180	14	634	18	1	1	..	..	318,894
North Hauraki ..	44	1,720	20	196	2	..	..	..	59	55,790
South Hauraki ..	31	1,142	32	445	51	1	1	..	186	180,355
Te Aroha ..	1	..	1	10	1	..	..	..	2	2,750
Great Barrier Isl'd	1	125	1	20	..	..	..	..	..	11,125
	134	6,167	68	1,305	72	2	2	..	247	568,914

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, 1900.

Locality where Machine is situated.	Name of Machine.	Name of Owners.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold melting or retorting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Driven by Steam-power.	Driven by Water-power or Hand-power.
Coromandel County.																W. H.
Coromandel ..	Kapanga ..	Kapanga Gold-mining Co.	..	10	..	2	..	..	1	2	1	..	..	..	1	..
" ..	Telephone ..	Hauraki Gold-mining Co.	..	15	..	8	..	..	2	3	1	..	..	..	1	..
" ..	Corby ..	Scotty's Gold-mining Co.	..	9	..	8	..	..	1	2	1	..	..	..	..	1 0
" ..	Hauraki Associated	Hauraki Associated Gold-mining Co.	..	12	..	4	..	..	2	2	1	1	..	..	1	1 0
" ..	Success ..	Success Gold-mining Co.	..	10	..	4	..	..	1	1	1	..	..	..	1	..
" ..	Tokatea ..	Royal Oak of Hauraki Gold-mining Co.	1	15	..	8	..	..	1	1	1	..	..	..	1	..
" ..	Progress-Castle Rock	Progress-Castle Rock Gold-mining Co.	1	2	..	2	..	..	2	1	..	..	..	..	1	..
" ..	Four-in-hand ..	Four-in-hand Gold-mining Co.	..	10	..	2	..	..	1	1	1	1	..	..	1	..
" ..	Triumph ..	Triumph Gold-mining Co.	..	10	..	2	..	..	1	1	1	..	..	..	1	..
" ..	Vizard's ..	..	..	4	..	1	..	..	1	1	1	..	..	..	..	1 0
" ..	Public battery ..	School of Mines Board of Trust	..	5	..	2	..	..	1	1	1	..	..	..	1	..
Opitonui ..	Opitonui ..	Kauri Freehold Gold Estates Gold-mining Co.	..	40	..	..	..	..	5	2	2	2	2	1	2	1 ..
" ..	Owera ..	Ditto	..	16	..	4	..	..	2	2	1	..	..	..	1	..
Kuaotunu ..	Try Fluke ..	Mariposa Gold-mining Co.	..	16	..	3	..	2	2	2	1	1	1	..	1	..
" ..	Great Mercury ..	Great Mercury Gold-mining Co.	..	10	..	1	..	1	4	2	1	1	1	..	1	..
" ..	Irene ..	Irene Gold-mining Co. ..	..	10	..	2	..	1	2	1	1	1	1	..	1	..
" ..	Kapai-Vermont ..	Kapai-Vermont Gold-mining Co.	1	..	*1	1	..	1	1	1	1	1	1	..	1	..
" ..	Handsworth ..	Louis Woodcock ..	..	3	..	..	..	..	..	..	..	..	..	..	..	1 0
Mahakirau ..	Mahakirau ..	New Zealand Government plant	..	3	..	1	..	1	1	1	..	..	..	..	1	..
Manaia ..	Golden Hill ..	..	..	2	..	1	..	1	1	1	..	..	..	..	1	..
Thames County.																
Tapu	Bullion ..	Bullion Gold-mining Co.	..	15	..	4	..	3	3	1	..	..	..	..	..	1 0
"	Mahara Royal ..	Mahara Royal Gold-mining Co.	..	20	..	18	..	2	2	1	1	..	..	..	..	1 0
Waiomo	Monowai ..	Monowai Amalgamated Gold-mining Co.	1	10	..	1	1	2	1	2	1	1	1	1	1	1 0
Puru	Puru	Puru Consolidated Gold-mining Co.	..	10	..	2	..	1	1	..	..	..	..	..	..	1 0
Tararu	New Alburnia ..	New Alburnia Gold-mining Co.	..	20	..	7	2	1	3	1	..		..	..	..	1 0
"	Tararu Creek ..	Tararu Creek Gold-mining Co.	..	30	..	6	..	3	2	1	..	..	..	..	1	1 0
"	Berry ..	Charles Berry ..	..	1	..	3	..	1	2	1	..	..	..	..	..	1 0
"	Chicago..	Chicago Gold-mining Co.	..	10	..	..	..	1	1	..	..	..	..	..	..	1 0
"	Eclipse ..	Eclipse Gold-mining Co.	..	10	..	3	..	..	..	2	..	..	..	..	..	1 0
Karaka	Claremont ..	George Bryant	..	1	..	1	..	..	1	3	..	..	..	..	..	0 1
Hape	Anchor ..	Ethel Reefs Gold-mining Co.	..	4	..	1	..	..	1	1	..	..	..	..	1	1 0
"	Fortuna ..	Fortuna Gold-mining Co.	..	5	..	..	..	..	1	1	1	1	1	..	..	1 0
Kerikeri	Kerikeri ..	M. Fleming	..	4	..	1	..	..	1	1	..	..	..	..	1	..

* Otis mill.

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, 1900—*continued*.

Locality where Machine is situated.	Name of Machine.	Name of Owners.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold melting or retorting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Concentrating Plants.	Driven by Steam-power.	Driven by Water-power or Hand-power.
Thames County—ctd.																W. H.
Puriri	Puriri ..	Puriri Gold Estates Gold-mining Co.	..	8	..	2	..	..	1	1	..	..	..	..	..	1 0
"	Hit or Miss ..	John McInnes	..	6	..	2	..	..	1	1	..	..	..	..	..	1 0
Tairua	Bonnie Scotland ..	..	..	20	..	6	..	..	2	1	..	..	..	..	..	1 0
"	Ajax ..	..	..	12	..	4	..	..	1	1	..	..	..	..	1	1 0
"	Cannon's ..	Richard Cannon ..	..	4	..	1	..	..	1	1	..	1	1	..	..	1 0
"	Broken Hill ..	Broken Hill Gold-mining Co.	1	20	..	6	..	..	1	1	..	1	1	..	1	1 0
Whangamata ..	Luck at Last ..	Whangamata Proprietary Gold-mining Co.	2	..	*2	6	..	..	1	1	1	1	1	..	..	1 0
" ..	The Mananu ..	The Mananu Gold-mining Co.	1	10	..	..	..	..	..	1	1	..	1	..	..	1 0
Ohui	Ohui	J. Mackay	..	2	..	1	..	..	1	1	..	..	..	..	..	1 0
Omahu	Sheet Anchor ..	Tillsley Brothers ..	..	2	..	1	..	..	1	1	..	..	..	..	1	..
Thames Borough ..	Kuranui ..	Kuranui Gold-mining Co.	..	20	..	6	..	..	2	1	..	..	..	..	..	1 0
" ..	Moanataiari ..	New Moanataiari Gold-mining Co.	2	60	..	21	4	..	2	6	3	..	1	1	1	2 0
" ..	Judd's	Charles Judd	..	..	..	2	9	..	..	..	1	..	..	..	..	1 0
" ..	Comer's ..	Kuranui-Caledonian Gold-mining Co.	..	20	..	5	..	..	2	1	1	1	..	..	..	1 0
" ..	May Queen ..	May Queen Gold-mining Co.	..	33	..	8	3	..	2	3	2	..	..	..	..	1 0
" ..	Cambria ..	New Moanataiari Gold-mining Co.	..	21	..	13	1	..	2	5	1	..	..	..	..	1 0
" ..	Waiotahi ..	Waiotahi Gold-mining Co.	..	21	..	5	..	..	2	2	1	..	..	..	1	..
" ..	Fame and Fortune	Fame and Fortune Gold-mining Co.	..	21	..	16	..	..	1	1	1	..	..	..	..	1 0
" ..	School of Mines ..	School of Mines Board in trust	..	2	..	1	1	1	3	3	1	4	1	..	..	1 0
" ..	May Queen Extended	May Queen Extended Gold-mining Co.	..	23	..	14	..	..	2	4	1	..	..	..	..	1 0
" ..	Fairmile ..	W. Manning	..	..	..	1	..	..	1	1	..	..	..	..	..	1 0
" ..	Bank of New South Wales	Reginald Smith ..	..	..	..	..	..	..	1	..	1	1	..	..	..	0 1
" ..	Bank of New Zealand	A. Smith	..	..	..	..	..	..	2	..	1	3	..	..	..	0 1
Ohinemuri County.																
Paeroa	Bank of New Zealand	G. Burgess	1	..	..	..	..	..	2	1	1	1	..	..	..	0 1
Karangahake ..	Crown	New Zealand Crown Mines Co. (Ltd.)	2	60	..	1	..	..	2	2	1	1	1	..	..	1 0
" ..	Woodstock ..	Woodstock Gold-mining Co.	2	40	..	1	..	..	2	2	1	1	1	1	..	1 0
" ..	Talisman ..	Talisman Gold-mining Co.	1	20	1	2	..	..	2	2	1	1	1	..	1	1 0
Komata	Komata	Komata Reefs Gold-mining Co.	2	20	..	4	..	..	2	2	1	1	1	1	1	1 0
Waitekauri ..	Waitekauri ..	Waitekauri Gold-mining Co.	2	40	1	6	..	..	3	1	4	2	1	1	1	1 0
" ..	Golden Cross ..	Ditto	1	10	..	2	..	..	2	2	1	1	1	..	..	..
" ..	Grace Darling ..	"	..	10	..	3	..	..	1	2	1	1	1	1	1	1 0
" ..	Jubilee	Jubilee Gold-mining Co.	..	10	..	5	2	1	1	2	1	1	1	..	1	..
" ..	Mangakara ..	Reginald Smith ..	..	9	..	3	..	..	1	2	..	..	..	..	..	1 0
" ..	Alpha	Alpha Gold-mining Co...	1	20	..	..	..	..	1	1	1	1	1	..	..	1 0
Maratoto	Waitekauri Extended	Waitekauri Extended Gold-mining Co.	1	40	..	3	..	..	2	2	1	1	1	..	..	1 0
" ..	Maratoto ..	Maratoto Gold-mining Co.	..	10	..	2	..	..	2	1	1	1	1	..	1	..
" ..	Hikutaia Gold Syndicate	Hikutaia Gold Syndicate	1	..	1	3	..	..	1	1	1	1	1	..	1	..
Owharoa	Ohinemuri Gold Syndicate	Ohinemuri Gold Syndicate	..	15	..	2	..	..	1	2	1	..	..	..	1	..
Waihi	Waihi	Waihi Gold-mining Co. ..	2	90	..	1	..	..	3	6	1	1	1	..	1	1 0
Waikino	Victoria	" ..	4	200	..	12	..	..	3	4	4	..	1	..	1	1 0
Waihi	Union Waihi ..	Union Waihi Gold-mining Co.	2	40	..	2	..	..	2	2	1	1	1	..	1	1 0
Piako County.																
Waiorongomai ..	Waiorongomai ..	E. H. Hardie	1	10	..	2	..	..	1	1	1	1	..	1	..	1 0
City of Auckland.																
Auckland ..	Fraser's	George Fraser and Sons	..	..	1	..	2	2	2	2	1	1	..	..	1	..
" ..	Bank of New Zealand	Bank of New Zealand ..	..	..	..	..	1	1	2	6	4	2	..	..	..	0 1
Great Barrier Island	Barrier Reefs Gold and Silver Co.	Barrier Reefs Gold- and Silver-mining Co.	1	20	..	..	..	..	2	3	2	1	1	1	1	..
			33	1,305	7	268	28	30	120	129	67	43	29	10	40	48 5

* Krupp mill.

Batteries in Course of Construction, Auckland District.

Locality.	Name of Company.	Number of Stamps.	Remarks.
Coromandel County.			
Tokatea	West Tokatea	3	
Thames County.			
Whangamata	Chelmsford	10	Not completed.
Hape Creek	Ethel Reefs	20	"
Ohinemuri County.			
Karangahake	New Zealand Crown ..	20	Not completed.
"	New Zealand Talisman ..	50	"
		103	

Statement showing the Whole of the Quartz-crushing Machines and Appliances for treating Auriferous Ores in the Marlborough, Nelson, and West Coast Mining Districts for the Nine Months ended the 31st December, 1900.

Locality where Machine is situated.	Name of Machine	Name of Owner.	Number of Rock-breakers.	Number of Stamps.	Number of Ore-crushers.	Number of Berdans.	Number of Pans.	Number of Settlers.	Number of Mortars.	Number of Retorts.	Number of Furnaces for Gold-melting.	Number of Furnaces for Assay Purposes.	Number of Plants for Cyanide Process.	Number of Plants for Chlorination.	Number of Concentrating Plants.	Driven by Steam-power.	Driven by Water-power or Hand-power.
Marlborough County.																	W. H.
Top Valley ..	Jubilee	Jubilee Gold-mining Co. ..	..	10	..	1	..	..	..	1	..	..	..	..	..	1	..
Collingwood County.																	
West Wanganui, or Taitapu	Taitapu	Taitapu Gold-mining Co. ..	2	20	..	4	..	1	1	2	1	1	..	..	..	..	1 0
Ditto	Golden Blocks ..	Golden Blocks Gold-mining Co.	..	8	..	..	..	1	1	*2	..	..	..	..	..	1	..
Greymouth County.																	
Paparoa Ranges ..	Taffy	Taffy Gold-mining Co. ..	..	5	..	1	..	..	..	1	..	..	..	..	..	..	1 0
" ..	Crœsus (Paparoa) ..	Crœsus (Paparoa) Gold-mining Co.	..	10	..	1	..	..	1	1	..	..	..	..	..	..	1 0
Lower Paparoas ..	Julian	Julian Gold-mining Co. ..	..	5	..	..	..	..	1	1	..	..	..	..	..	..	1 0
Buller County.																	
Lyell	Alpine Extended ..	Alpine Extended Gold-mining Co.	..	20	..	4	..	1	1	2	..	..	1	..	..	..	1 0
"	Crœsus	Crœsus Syndicate ..	..	10	..	2	..	..	1	1	..	..	..	..	..	..	1 0
Stony Creek, Westport	Britannia ..	Britannia Gold-mining Co.	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1 0
Waimangaroa ..	Republic ..	Republic Gold-mining Co.	..	10	..	2	..	..	2	2	..	..	..	..	..	..	1 0
Inangahua County.																	
Reefton	Progress	Progress Mines of New Zealand	3	65	..	1	..	..	2	2	1	1	1	1	1	..	1 0
"	Wealth of Nations ..	Consolidated Goldfields of New Zealand	..	20	..	1	..	..	2	2	..	..	1	..	..	..	1 0
"	Golden Fleece ..	Ditto	1	20	..	..	..	..	..	..	..	..	1	..	1	1	..
"	Keep-it-Dark ..	Keep-it-Dark Gold-mining Co.	..	20	..	4	..	1	1	2	..	..	1	1	..	..	1 0
"	New Inkerman ..	New Inkerman Mines ..	..	15	..	3	..	..	..	1	1	1	..	..	1	1	..
Merrijigs ..	Golden Lead ..	Golden Lead Gold-mining Co.	..	10	..	..	..	..	..	1	..	..	..	..	..	..	1 0
"	Cumberland ..	Cumberland Gold-mining Co.	..	10	..	1	..	..	2	1	..	..	1	..	..	..	1 0
"	New Scotia ..	New Scotia Gold-mining Co.	..	10	..	1	..	..	1	1	..	..	1	..	..	1	..
"	Last Chance ..	Last Chance Syndicate ..	..	5	..	..	..	..	1	1	..	..	..	..	..	1	..
Big River ..	Big River ..	Big River Gold-mining Co.	..	10	..	4	..	..	2	2	1	1	1	..	..	..	1 0
"	King George ..	St. George	..	5	..	..	..	..	1	1	..	..	..	..	..	..	1 0
Capleston ..	Welcome	Consolidated Goldfields of New Zealand	..	10	..	2	..	..	1	2	..	..	..	..	..	..	1 0
Bourke's Creek ..	Gardiner's ..	W. P. Gardiner and Sons ..	..	..	..	12	..	..	1	2	..	..	..	..	..	..	1 0
			6	300	..	44	..	4	22	31	4	4	8	2	3	6	17 0

* The gold from the retort is placed in the crucible and operated on in the smith's fire.

Battery in Course of Construction, Marlborough District.

Locality.	Name of Company.	Number of Stamps.	Remarks.
Top Valley, Marlborough	Wellington Gold-mining Co.	10	Driven by water-power.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the AUCKLAND DISTRICT for the Nine Months ended the 31st December, 1900.

Locality and Name of Mine.	Average Number of Men employed—Wages-men or Owners.	Quartz crushed.	Gold obtained.		Estimated Value of Gold or Bullion.
			Amalgamation.	Cyanide.	
GREAT BARRIER ISLAND.					
		Tons. cwt. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Barrier Reefs	120	3,038 0 0	2,696 0	1,016 0	3,401 3 7
COROMANDEL COUNTY.					
Cabbage Bay—					
Extended Quartz Claim	2	18 0 0	20 13	..	57 18 4
Kennedy Bay—				..	
Macoronic	2	1 0 0	0 9	..	1 4 9
Keep-it-Dark	2	0 16 0	11 7	..	30 4 3
Lilly	2	2 0 0	1 2	..	3 0 6
	6	3 16 0	12 18	..	34 9 6
Baden Powell	2	0 2 66	41 14	..	114 13 6
Waikoromiko—					
Four-in-hand	21	824 0 0	1,317 18	..	3,768 17 3
Lillies	2	0 6 56	5 15	..	13 19 0
New Trilby	2	2 0 0	99 0	..	290 5 9
Forest Queen	3	4 0 0	79 7	..	235 6 4
	28	830 6 56	1,502 0	..	4,308 8 4
Tokatea—					
Royal Oak	40	282 8 108	591 2	..	1,487 12 0
Hauraki Associated	8	24 0 0	153 0	..	425 19 4
Harbour View	4	14 0 0	52 12	..	144 13 0
Queen of the North	2	3 0 0	32 4	..	88 11 0
East Tokatea	2	5 0 0	48 5	..	124 5 10
Hauraki Gem	2	3 10 0	7 0	..	18 4 0
	58	331 18 108	884 3	..	2,289 5 2
Kapanga—					
Kapanga	38	73 0 72	151 16	..	434 18 11
Scotty's	17	101 1 0	217 18	..	639 11 3
New Hauraki Gold Properties ..	12	0 1 48	79 17	..	232 10 2
Glencoe	3	1 0 0	16 7	..	46 19 10
	70	175 3 8	465 18	..	1,354 0 2
Kauri Block—					
Hauraki	79	1,130 19 101	2,934 17	..	9,148 7 3
Golden Pah	21	40 0 0	69 19	..	220 3 0
Hauraki Freeholds (Limited) ..	23	22 0 0	5 14	..	16 13 5
Hauraki No. 2	2	9 0 0	3 5	..	9 15 0
Bunker's Hill	8	61 0 72	165 18	..	467 0 3
Trig. Hill	2	37 0 0	27 0	..	81 0 0
	135	1,300 0 61	3,206 13	..	9,942 18 11
Tiki—					
Progress Castle Rock	7	180 1 23	188 8	..	555 10 2
Opitonui—					
Kauri Freehold Estate	165	11,923 0 0	..	6,636 0	13,322 5 2
Kuaotunu—					
Great Mercury	7	346 0 0	179 5	42 10	507 15 9
Irene	7	512 0 0	392 5	..	803 16 6
Waitahia	3	371 0 0	171 10	276 12	1,279 15 5
Juno	3	5 6 7	252 5	..	579 15 3
Handsworth	2	56 0 0	141 13	..	345 8 10
	22	1,290 6 7	1,136 18	319 2	3,516 11 9
Mercury Bay: Mahakirau—					
Day Dawn	2	17 10 0	12 5	..	31 5 0
Sundries	6	36 0 0	19 0	..	78 4 3
Totals, Coromandel County ..	503	16,106 4 105	7,490 10	6,955 2	35,605 10 3
THAMES COUNTY AND BOROUGH					
Tapu—					
Mahara Royal	8	664 0 0	368 7	..	1,085 11 1
Bullion	7	119 0 0	407 0	..	1,190 9 6
Bendigo	2	7 10 0	11 1	..	34 5 0
Panama Route	3	23 0 0	19 4	..	62 0 0
	20	813 10 0	805 12	..	2,372 5 7

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the AUCKLAND DISTRICT for the Nine Months ended the 31st December, 1900—*continued*.

Locality and Name of Mine.	Average Number of Men employed—Wages-men or Owners.	Quartz crushed.	Gold obtained.		Estimated Value of Gold or Bullion.
			Amalgamation.	Cyanide.	
THAMES COUNTY AND BOROUGH—*continued*.					
		Tons cwt. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Waiomo—					
Monowai	33	*1,439 0 0	..	..	1,830 16 3
Hector McDonald	2	8 0 0	6 8	..	19 4 0
	35	1,447 0 0	6 8	..	1,850 0 3
Tararu—					
Tararu Creek	80	11,096 0 0	1,796 0	1,957 0	8,342 15 10
Eclipse	24	1,334 0 0	934 16	..	2,666 5 4
	104	12,430 0 0	2,730 16	1,957 0	11,009 1 2
Kuranui—					
Kuranui	12	28 0 0	58 3	..	151 19 9
Moanataiari—					
Moanataiari	9	70 0 0	71 2	..	203 15 3
" (tributers)	56	633 1 60	1,336 11	..	3,690 18 5
Kuramui-Caledonian	3	..	..	..	..
" (tributers)	50	451 0 23	1,668 4	..	4,576 13 8
New Whau	7	75 0 0	68 16	..	180 2 4
New Alburnia	4	5 0 0	1 7	..	3 12 10
Tudor	2	10 2 0	9 4	..	24 16 10
	131	1,244 3 83	3,155 4	..	8,679 19 4
Waiotahi—					
Waiotahi	16	975 0 0	1,451 5	..	3,891 9 6
Fame and Fortune	25	824 0 0	618 7	..	1,173 18 9
Nonpariel (tributers)	16	354 3 69	445 1	..	1,201 18 7
Little Muriel	2	18 2 0	4 9	..	12 4 2
Golden Drop	2	3 0 0	17 10	..	47 5 0
	61	2,174 1 69	2,536 12	..	6,326 16 0
Grahamstown—					
Victoria	5	26 0 0	39 15	..	110 9 5
Waiokaraka—					
May Queen	65	5,216 0 0	3,029 4	..	8,806 17 4
" (tributers)	35	444 0 0	1,322 8	..	3,629 10 7
	100	5,660 0 0	4,351 12	..	12,436 7 11
Karaka—					
May Queen Extended	8	23 0 0	35 0	..	98 14 0
Claremont	1	1 1 12	306 0	..	826 4 0
Gloucester	8	1 0 0	1 14	..	4 18 7
Kimberley	2	0 0 54	33 13	..	95 4 3
Alburnia East	2	0 1 106	124 15	..	336 16 6
	21	25 3 60	501 2	..	1,361 17 4
Una Hill and Hape Creek					
Occidental	2	40 0 0	31 5	..	85 7 8
Fortuna	10	17 0 0	14 9	..	39 19 8
Ethel Reefs	30	655 1 39	592 3	..	1,511 2 2
	42	712 1 39	637 17	..	1,636 9 6
Kerikeri and Puriri—					
Horse-shoe	3	3 0 10	17 14	..	48 0 6
" (tributers)	2	0 0 17	14 3	..	36 10 10
Miner's Right	4	221 0 0	172 6	..	442 8 11
Klondike	2	4 3 0	5 8	..	12 10 0
Sheet Anchor	3	3 1 0	86 16	..	72 1 6
	14	232 0 27	296 7	..	611 11 9
Whangamata—					
Whangamata Gold Corporation	30	5,120 0 0	..	4,316 5	6,832 3 5
Mananu	52	1,002 0 0	466 16	902 2	2,605 12 4
Broken Hills	20	2,218 0 0	673 0	668 0	1,457 8 0
	102	8,340 0 0	1,139 16	5,886 7	10,895 3 9
Gumtown—					
Welcome Jack	7	7 0 72	227 18	..	263 10 10
Sundries	10	224 1 0	120 7	..	372 1 11
Tailings (4,878 tons)†	6	..	666 5	..	1,776 0 4
Totals, Thames County and Borough	670	33,367 2 14	17,273 14	7,843 7	59,853 14 10

*This 1,439 tons was crushed and concentrated on the mine; the concentrates were then forwarded to New South Wales for treatment.

† Most of those tailings were allowed to run away from the crushing plants, and were again elevated and treated by grinding and pan-amalgamation.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the AUCKLAND DISTRICT for the Nine Months ended the 31st December, 1900—*continued*.

Locality and Name of Mine.	Average Number of Men employed—Wages-men or Owners.	Quartz crushed.	Gold obtained.		Estimated Value of Gold or Bullion.
			Amalgamation.	Cyanide.	
OHINEMURI COUNTY.					
		Tons cwt. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Waihi—					
Waihi	1,036	79,808 0 0	..	201,014 0	223,576 11 5
Waihi Union	164	4,199 0 0	..	3,385 0	4,558 3 0
	1,200	84,007 0 0	..	204,399 0	228,134 14 5
Waitekauri—					
Waitekauri	350	19,813 0 0	..	56,458 0	49,836 15 9
Jubilee	12	46 0 0	17 13	321 15	257 14 0
Grace Darling	11	827 0 0	..	222 0	266 8 0
	373	20,686 0 0	17 13	57,001 15	50,360 17 9
Karangahake—					
New Zealand Crown	240	26,133 0 0	..	26,397 16	52,339 12 6
New Zealand Talisman	150	7,961 0 0	..	29,725 4	21,980 2 1
Imperial	4	9 0 0	..	12 0	30 0 0
Crown Woodstock Junction	2	3 0 0	..	4 3	10 11 6
	396	34,106 0 0	..	56,139 3	74,360 6 1
Komata—					
Komata Reefs	35	*4 0 0	..	134 0	299 6 2
Maratoto—					
Waitekauri Extended	40	2,255 0 0	..	2,117 6	2,223 3 0
Maratoto United	11	580 0 0	532 3	3,262 8	812 3 9
	51	2,835 0 0	532 3	5,379 14	3,035 6 9
Totals, Ohinemuri County	2,055	141,638 0 0	549 16	323,053 12	356,190 11 2
PIAKO COUNTY.					
Waiorongomai—					
Empire and New Find	20	1,189 0 0	882 9	..	1,918 11 9
Loyalty	2	30 0 0	27 1	..	67 12 6
Totals, Piako County	22	1,219 0 0	909 10	..	1,986 4 3
Grand totals	3,370	195,369 3 7	28,919 10	338,868 1	457,037 4 1

* Tailings.

Number of men employed in prospecting and development-work in the whole district from which no returns of gold have been obtained, 320.

BATTERY RETURNS from QUARTZ-MINES in the MARLBOROUGH, NELSON, and WEST COAST MINING DISTRICTS for the Nine Months ended the 31st December, 1900.

Name of Mine.	Quartz crushed.	Yield of Gold.	Approximate Total Values.
	Tons.	Oz. dwt. gr.	£ s. d.
Marlborough District—			
Jubilee	500	90 11 6	317 19 11
Collingwood District—			
Golden Blocks	1,732	1,849 6 0	6,914 12 4
Golden Ridge	420	363 6 17	1,136 13 7
Westport District—			
Britannia	16	24 18 0	98 7 0
Lyell District—			
Alpine Extended	899	294 9 3	1,042 18 11
Reefton District—			
Kirwan's Reward	1,763	1,873 7 7	7,465 14 4
Progress Mines	40,564	15,536 17 7	63,952 7 11
Golden Fleece	1,918	1,946 15 9	3,859 5 0
Wealth of Nations	1,979	711 5 23	2,834 7 11
Keep-it-Dark	9,022	3,312 3 9	12,198 0 0
New Inkerman	2,603	165 0 0	659 15 9
Last Chance	44	85 0 0	331 13 6
New Scotia	900	190 15 6	640 13 9
Big River	216	113 9 22	571 16 4
Paparoa Ranges—			
Crœsus	1,643	857 13 6	3,495 5 4
Taffy	873	318 19 2	1,287 12 0
Totals	65,092	27,733 17 21	106,807 3 7

BATTERY RETURNS from QUARTZ-MINES in the SOUTHERN DISTRICT for the Nine Months ended the 31st December, 1900.

Name of Company.	Quartz crushed.	Yield of Gold.	Approximate Value.
	Tons cwt. qr.	Oz. dwt. gr.	
Achilles Gold-mines (Limited), Bullendale ...	491 0 0	85 11 6	
Glenrock Consolidated (Limited), Macetown ...	1,430 0 0	986 0 0	
Morning Star, Preservation Inlet	776 10 0	365 7 0	
Golden Site Extended, Preservation Inlet ...	5 0 0	1 18 0	
Alpha Quartz-mining Company, Preservation Inlet	1,364 0 0	264 17 0	
Outram Syndicate, Preservation Inlet ...	3 0 0	2 1 0	
Lawrence Brothers, Bannockburn	300 0 0	147 0 0	
James Lawrence, Bannockburn	70 0 0	23 10 0	
F. W. Gray, Bald Hill Flat	105 0 0	79 0 0	
R. T. Symes, Bald Hill Flat.	60 0 0	43 0 0	£16,947 3 2
Bonanza, Macraes	205 0 0	116 7 0	
W. and G. Donaldson, Macraes	1,300 0 0	139 9 0	
H. N. Mills and Sons, Macraes	1,533 0 0	268 14 0	
Ounce Reef Company, Macraes	347 0 0	150 7 13	
Ivanhoe Quartz-mining Company, Macraes ...	345 0 0	60 0 0	
Mount Highlay Syndicate, Hyde	1,273 0 0	364 16 6	
Bella Reefs, Waipori	130 0 0	21 18 0	
O.P.Q. (Waipori) Gold-mines, Waipori ...	4,108 0 0	1,050 3 15	
Table Hill Gold-mining Company, Table Hill ...	150 0 0	7 6 13	
Barewood Quartz-mining Company, Deepstream	...	15 10 16	
Canada Reefs, *viâ* Milton	50 0 0	6 10 0	
Shotover Quartz-mining Company, Skippers ...	122 0 0	...	
Tailings treated	34 0 0	231 4 23	
Totals	14,201 10 0	4,430 11 20	16,947 3 2

STATEMENT of VALUE of GOLD WON from QUARTZ CRUSHED for ALL DISTRICTS for Year ended the 31st March, 1900, and Nine Months ended the 31st December, 1900.

Mining District.	Nine Months ended the 31st December, 1900.	Year ended the 31st March, 1900.
	£	£
Hauraki	457,037	672,454
Marlborough, Nelson, and West Coast	106,807	137,905
Otago and Southland	16,947	21,777
Totals	580,791	832,136

GROSS TOTALS and VALUE of GOLD PURCHASED by BANKS for Nine Months ended the 31st March, 1901.

Bank.	Gold won.	Value.
Hauraki Mining District.		
	Oz. dwt. gr.	£ s. d.
Bank of New Zealand	42,155 10 0	87,266 6 5
Bank of New South Wales	3,122 11 0	8,545 2 5
National Bank of New Zealand ...	8,971 0 0	11,614 4 7
Totals	54,249 1 0	107,425 13 5
Marlborough, Nelson, and Westland Mining Districts.		
Bank of New Zealand	24,629 11 1	96,342 10 0
Bank of New South Wales	9,982 9 15	39,449 13 5
National Bank of New Zealand ...	11,105 17 13	41,892 0 6
Union Bank of Australia	1,024 0 0	4,031 0 0
Private buyers	150 14 12	559 17 2
Totals	46,892 12 17	182,275 1 1

Otago and Southland Districts.

Bank of New Zealand	63,765	6	4	245,251	3	0
Bank of New South Wales	15,488	9	11	59,661	1	2
National Bank of New Zealand ...	20,639	18	19	80,605	19	1
Bank of Australasia	3,640	4	0	14,531	0	0
Totals	103,533	18	10	400,049	3	3
Grand totals	204,675	12	3	689,749	17	9

SUMMARY OF WORKS CONSTRUCTED.

The following statement shows the whole of the different classes of works constructed by the department, either by direct grants or by subsidies to local bodies, during the last nineteen years (the votes for this purpose having been under the control of the Hon. the Minister of Mines), for the purpose of opening up the mineral belts throughout the colony, and also for the development of the mining industry:—

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
	£ s. d.	£ s. d.	£ s. d.
UP TO YEARS 1882–83 AND 1883–84.			
Water-races	29,252 1 11	14,853 9 5	14,398 11 6
Roads on goldfields	21,437 11 2	13,089 16 0	8,347 15 2
Roads and tracks undertaken by County Councils, subsidised by Mines Department	52,841 17 0	21,844 16 7	10,207 15 9
Works undertaken by prospecting associations, subsidised by Mines Department	13,216 13 4	3,350 0 0	3,400 0 0
Construction of drainage- and sludge-channels, subsidised by Mines Department	5,750 0 0	2,468 15 4	781 4 8
	122,498 3 5	55,606 17 4	37,135 7 1
1884–85.			
Water-races	4,846 1 9	14,596 2 9	4,648 11 6
Roads on goldfields	13,667 10 1	9,630 9 6	12,384 15 9
Roads and tracks undertaken by County Councils, subsidised by Mines Department	13,566 14 1	6,293 16 6	12,739 17 6
Roads to mines, other than gold, subsidised by Mines Department	4,594 10 0	111 19 0	2,888 1 0
Works undertaken by prospecting associations, subsidised by Mines Department	850 0 0	108 0 0	3,692 0 0
Construction of drainage- and sludge-channels, subsidised by Mines Department	4,050 0 0	1,050 0 0	1,931 4 8
Diamond and other drills	3,600 0 0	1,858 0 0	..
	45,174 15 11	33,648 7 0	38,284 10 5
1885–86.			
Water-races	3,660 4 9	6,063 2 3	6,964 4 4
Roads on goldfields	27,543 18 8	12,360 14 9	27,567 19 8
Roads undertaken by County Councils, subsidised by Mines Department	14,773 2 3	13,043 15 9	12,477 9 2
Roads to mines, other than gold, subsidised by Mines Department	1,551 19 10	4,327 0 10	490 12 8
Works undertaken by prospecting associations, subsidised by Mines Department	11,860 18 0	1,999 5 7	6,389 5 9
Construction of drainage- and sludge-channels, subsidised by Mines Department	10,051 14 9	3,994 16 6	6,995 9 9
Schools of Mines	2,160 9 7	1,260 9 7	900 0 0
	71,602 7 10	43,049 5 3	61,785 1 4

SUMMARY OF WORKS CONSTRUCTED—*continued.*

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
1886–87.	£ s. d.	£ s. d.	£ s. d.
Water-races	..	1,928 14 4	3,466 0 8
Roads on goldfields	12,453 3 5	22,229 16 1	17,791 7 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	12,613 4 8	7,415 19 6	10,455 1 5
Roads to mines, other than gold, subsidised by Mines Department	..	306 1 0	110 13 1
Works undertaken by prospecting associations and companies, subsidised by Mines Department	15,671 19 6	4,521 7 3	4,618 4 7
Construction of drainage- and sludge-channels, subsidised by Mines Department	5,549 14 6	6,207 18 0	672 6 10
Diamond and other drills	422 15 6	422 15 6	..
Schools of Mines	3,183 7 1	3,383 7 1	700 0 0
	49,894 4 8	46,415 18 9	37,813 13 7
1887–88.			
Water-races	6 6 6	6 6 6	..
Roads on goldfields	6,860 4 3	17,281 11 3	7,370 0 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	2,998 15 0	8,012 5 2	3,942 4 2
Roads to mines, other than gold, subsidised by Mines Department	..	14 5 4	..
Works undertaken by prospecting associations and companies, subsidised by Mines Department	6,456 8 0	2,703 19 3	924 8 0
Construction of drainage- and sludge-channels, subsidised by Mines Department	..	1,110 4 11	2,054 10 6
Schools of Mines	1,859 3 7	2,221 19 4	337 4 3
Aids to treatment of ores	1,200 0 0	390 18 3	209 1 9
	19,380 17 4	31,741 10 0	14,837 8 8
1888–89.			
Roads on goldfields	10,253 5 3	4,304 3 9	13,218 11 6
Roads and tracks undertaken by County Councils, subsidised by Mines Department	7,318 1 0	2,466 16 8	5,195 6 1
Works undertaken by prospecting associations and companies, subsidised by Mines Department	474 0 0	236 0 0	687 8 0
Construction of drainage- and sludge-channels, subsidised by Mines Department	..	54 10 6	..
Wharves, contributions by Mines Department	589 19 5	96 6 0	343 13 5
Aids to treatment of ores, subsidised	..	209 1 9	..
Schools of Mines	895 16 10	1,188 6 10	44 14 3
	19,531 2 6	8,555 5 6	19,489 13 3
1889–90.			
Roads on goldfields	3,834 9 7	9,148 5 9	8,005 5 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	8,507 15 8	3,451 17 11	5,928 1 3
Works undertaken by prospecting associations and companies, subsidised by Mines Department	..	..	663 0 0
Water-races	2,200 0 0	719 0 0	681 0 0
Wharves	..	150 0 0	193 13 5
Schools of Mines	1,040 0 8	1,034 0 11	50 14 0
Aids to treatment of ores	142 8 9	142 8 9	..
Tracks to open up mineral lands	1,000 0 0	207 3 6	792 16 6
Diamond drills	425 14 5	425 14 5	..
	17,150 9 1	15,278 11 3	16,314 10 6
1890–91.			
Roads on goldfields	8,811 14 4	10,815 14 8	5,201 5 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	2,703 5 0	2,252 5 5	5,027 8 4
Works undertaken by prospecting associations and companies, subsidised by Mines Department	..	..	663 0 0
Water-races	5,542 19 8	6,234 4 6	..
Wharves	..	39 9 9	..
Schools of Mines	3,847 10 0	3,898 4 0	..
Tracks to open up mineral lands	..	78 4 7	419 19 5
	20,905 9 0	23,319 2 11	11,311 12 9
1891–92.			
Roads on goldfields	14,226 5 1	8,460 0 3	11,767 9 10
Roads and tracks undertaken by County Councils, subsidised by Mines Department	3,162 0 0	1,720 18 6	4,937 10 2
Works undertaken by prospecting associations and companies, subsidised by Mines Department	1,455 5 5	336 15 9	1,663 0 0
Water-races	2,256 13 6	2,256 13 6	..
Wharves	..	..	..
Schools of Mines	1,370 19 9	1,370 19 9	..
Tracks to open up mineral lands	40 0 0	41 16 0	418 3 7
	22,511 3 9	14,187 3 9	18,786 3 7

SUMMARY OF WORKS CONSTRUCTED—*continued.*

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
1892–93.	£ s. d.	£ s. d.	£ s. d.
Roads on goldfields	15,199 2 4	17,325 10 0	9,628 6 10
Roads and tracks undertaken by County Councils, subsidised by Mines Department	550 0 0	1,033 0 0	4,831 9 10
Works undertaken by prospecting associations and companies, subsidised by Mines Department	970 4 9	865 4 3	1,768 0 6
Water-races	3,811 1 10	3,811 1 10	..
Wharves	..	..	..
Schools of Mines	1,232 4 4	1,232 4 4	..
Tracks to open up mineral lands	..	..	419 19 5
Artesian-well boring, Maniototo Plains	550 0 0	281 3 6	268 16 6
	22,312 13 3	24,548 3 11	16,916 3 1
1893–94.			
Roads on goldfields	18,418 19 2	15,056 0 11	13,013 18 5
Roads and tracks undertaken by County Councils, subsidised by Mines Department	5,038 11 6	2,718 17 8	5,576 10 7
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,245 19 4	1,709 18 5	1,027 7 11
Water-races	5,271 17 1	5,271 17 1	900 0 0
Drainage-channels	..	..	1,000 0 0
Wharves	..	..	..
Schools of Mines	1,555 19 9	1,555 19 9	..
Tracks to open up mineral lands	..	..	..
Repairing flood damages	500 0 0	500 0 0	..
Artesian-well boring, Maniototo Plains	800 0 0	518 16 6	..
	33,831 6 10	27,331 10 4	21,517 16 11
1894–95.			
Roads on goldfields	20,908 13 7	15,160 3 5	18,752 10 7
Roads and tracks undertaken by County Councils, subsidised by Mines Department	685 18 4	2,295 9 2	1,934 5 7
Works undertaken by prospecting associations and companies, subsidised by Mines Department	10,805 15 4	2,378 13 2	3,006 13 0
Water-races	4,801 19 7	2,427 10 11	2,151 18 8
Drainage-channels	1,521 0 0	673 14 10	3,647 5 2
Wharves	..	..	..
Schools of Mines	999 8 6	999 8 6	..
Tracks to open up mineral lands	..	..	..
Repairing flood damages	..	..	..
Artesian-well boring, Maniototo Plains	505 19 11	505 19 11	..
Diamond drills	..	..	..
	40,228 15 3	24,440 19 11	29,492 13 0
1895–96.			
Roads on goldfields	14,554 0 7	19,970 6 6	14,086 4 8
Roads and tracks undertaken by County Councils, subsidised by Mines Department	4,614 11 1	1,607 8 6	4,290 16 11
Works undertaken by prospecting associations and companies, subsidised by Mines Department	3,477 7 0	1,726 4 8	10,093 3 0
Water-races	6,820 18 3	5,162 9 2	2,515 7 9
Drainage-channels	5,100 0 0	2,240 5 1	2,657 0 1
Wharves	..	..	..
Schools of Mines	999 3 0	999 3 0	..
Tracks to open up mineral lands	..	..	..
Repairing flood damages	..	..	..
Artesian-well boring, Maniototo Plains	..	..	..
Diamond drills	216 1 6	216 1 6	..
	35,782 1 5	31,921 18 5	33,642 12 5
1896–97.			
Roads on goldfields	57,685 9 6	30,720 12 7	35,622 15 3
Roads and tracks undertaken by County Councils, subsidised by Mines Department	11,677 0 0	1,759 6 5	4,079 18 3
Works undertaken by prospecting associations and companies, subsidised by Mines Department	1,570 7 3	1,533 6 7	2,915 14 3
Water-races	3,090 11 1	3,927 18 0	1,678 0 10
Drainage-channels	1,409 0 0	2,149 3 11	2,516 16 2
Wharves	..	..	..
Schools of Mines	1,682 19 5	1,682 19 5	..
Tracks to open up mineral lands	..	..	..
Repairing flood damage	..	..	..
Artesian-well boring, Maniototo Plains	..	..	..
Resumption of land	300 0 0	300 0 0	..
Prospecting deep levels	25,500 0 0	2,697 14 5	22,802 5 7
	102,915 7 3	44,771 1 4	69,615 10 4

SUMMARY OF WORKS CONSTRUCTED—*continued.*

Nature of Works.	Total Cost of Construction, or Amount authorised to be expended.	Expenditure, by way of Subsidy or otherwise, by Mines Department.	Amount of Liability by Mines Department on Works in Progress.
1897–98.	£ s. d.	£ s. d.	£ s. d.
Roads on goldfields	71,318 11 7	37,410 14 3	33,907 17 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	25,151 9 8	12,158 6 7	9,677 14 0
Works undertaken by prospecting associations and companies, subsidised by Mines Department	3,939 8 1	2,357 15 1	1,581 13 0
Water-races	3,275 8 9	2,272 5 0	1,003 3 9
Drainage-channels	4,481 14 0	1,212 14 9	3,268 19 3
Schools of Mines	1,780 17 3	1,780 17 3	..
Prospecting deep levels	25,500 0 0	21,520 15 0	1,281 10 7
Water-conservation	507 3 9	507 3 9	..
Construction of telephone-lines	60 0 0	50 0 0	..
Compensation proclamation of rivers	5,196 13 10	5,196 13 10	..
	141,211 6 11	84,467 5 6	50,720 17 11
1898–99.			
Roads on goldfields	48,201 0 2	42,358 8 6	39,825 9 0
Roads and tracks undertaken by County Councils, subsidised by Mines Department	21,025 12 0	4,191 7 9	5,914 7 5
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,936 11 8	2,143 14 1	1,103 13 1
Water-races	3,853 16 5	2,932 12 1	1,719 6 3
Drainage-channels	3,539 7 5	2,426 13 5	3,802 16 4
Schools of Mines	1,450 15 2	1,450 15 2	..
Prospecting deep levels	25,500 0 0	1,281 10 7	..
Water-conservation	12,483 13 1	7,893 19 4	..
Construction of telephone-lines	..	..	..
Compensation proclamation of rivers	676 0 8	676 0 8	..
	119,666 16 7	65,355 1 7	52,365 12 1
1899–1900.			
Roads on goldfields	46,442 15 10	44,258 2 6	42,010 2 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	4,625 0 0	2,865 7 4	5,011 0 11
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,549 7 2	1,400 9 6	1,784 3 0
Water-races	7,909 5 11	8,430 14 0	963 11 10
Drainage-channels	1,090 0 0	1,435 7 5	2,627 14 7
Schools of Mines	1,866 13 3	1,866 13 3	..
Prospecting deep levels	..	..	..
Water-conservation	6,925 10 9	6,925 10 9	..
Resumption of land	2,812 7 0	2,812 7 0	..
Compensation proclamation of rivers	811 0 0	811 0 0	..
Aid towards the treatment of ores	915 1 4	915 1 4	..
	75,947 1 3	71,720 13 1	52,396 12 8
1900–1901.			
Roads on goldfields	48,835 2 1	44,757 0 1	46,088 4 4
Roads and tracks undertaken by County Councils, subsidised by Mines Department	1,495 8 2	2,882 6 2	3,133 4 10
Works undertaken by prospecting associations and companies, subsidised by Mines Department	2,353 5 10	1,266 11 7	1,033 7 9
Water-races	3,954 1 6	4,251 19 8	50 0 0
Drainage-channels	2,058 0 0	517 0 4	927 7 3
Schools of Mines	1,598 2 1	1,598 2 1	..
Prospecting deep levels	..	..	..
Water-conservation	2,680 19 1	3,787 17 9	..
Resump ion of land	..	..	..
Compensation proclamation of rivers	6,083 18 9	6,083 18 9	..
Aid towards the treatment of ores	778 1 0	778 1 0	..
	69,836 18 6	65,922 17 5	51,232 4 2
Summary.			
Roads on goldfields	419,993 2 6	373,904 18 2	46,088 4 4
Subsidised roads and tracks	169,979 1 5	98,446 14 2	3,133 4 10
Subsidised roads and tracks other than on goldfields	6,146 9 10	4,759 6 2	..
Prospecting	77,908 5 2	28,638 5 10	1,033 7 9
Water-races	88,531 13 4	85,146 1 0	50 0 0
Wharves	435 15 9	285 15 9	..
Schools of Mines	27,523 10 3	27,523 10 3	..
Drainage-channels	38,911 15 0	25,540 5 0	927 7 3
Diamond drills	5,170 11 4	3,428 11 4	..
Treatment of ores	3,035 11 1	2,435 11 1	..
Tracks to open up mineral lands	325 8 1	325 8 1	..
Artesian-well boring, Maniototo Plains	800 0 0	800 0 0	..
Repairing flood damages	500 0 0	500 0 0	..
Prospecting deep levels	51,000 0 0	25,500 0 0	..
Resumption of land	3,112 7 0	3,112 7 0	..
Water-conservation	19,114 11 7	19,114 11 7	..
Construction of telephone-lines	60 0 0	50 0 0	..
Proclamation of rivers	12,767 13 3	12,767 13 3	..
	925,315 15 7	712,278 18 8	51,232 4 2

LIST of WORKS on GOLDFIELDS undertaken wholly by the Mines Department, or by Subsidies to County Councils, Local Bodies, and Prospecting Associations, in Progress on the 31st March, 1901.

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
NORTH ISLAND.			
ROADS (SUBSIDISED).			
Coromandel County.	£ s. d.	£ s. d.	£ s. d.
Road, Bridles Point, to Deepwater (repairs)	300 0 0	230 0 0	20 0 0
Opitonui–Mercury Bay	200 0 0	..	100 0 0
Repairs, bridges, Kuaotunu Main Road	200 0 0	100 0 0	40 0 0
	700 0 0	330 0 0	160 0 0
Thames County.			
Foot-bridge, Pepe Creek	300 0 0	37 3 6	112 16 6
Hape Creek Road	200 0 0	..	100 0 0
Gumtown–Kapowai	400 0 0	63 15 0	136 5 0
	900 0 0	100 18 6	349 1 6
Thames Borough.			
Clearing *débris*, Karaka and Waiotahi Creeks	275 0 0	175 0 0	100 0 0
Ohinemuri County.			
Kaimanawa Road	200 0 0	86 2 6	53 17 6
Mangaiti and Waitoa Road and punt	200 0 0	85 11 9	64 8 3
Earl of Glasgow Claim Track	400 0 0	246 2 7	53 17 5
	800 0 0	417 16 10	172 3 2
Piako County.			
Repairs Waiorongomai Tramway	100 0 0	..	60 0 0
MIDDLE ISLAND.			
ROADS (SUBSIDISED).			
Collingwood County.			
Takaka Roads	600 0 0	184 16 4	215 3 8
Collingwood–Kaituna	400 0 0	..	200 0 0
	1,000 0 0	184 16 4	415 3 8
Buller County.			
Long Tunnel Road, Addison's	200 0 0	..	100 0 0
Blackwater Bridge	400 0 0	..	200 0 0
Orowaiti Bridge	350 0 0	100 0 0	75 0 0
	950 0 0	100 0 0	375 0 0
Grey County.			
Track Rees Flat to Watterson's Consols Company ..	300 0 0	..	150 0 0
Improvement Road Reserve Totara	50 0 0	..	25 0 0
Mosquito Road	500 0 0	80 0 0	172 10 0
	850 0 0	80 0 0	347 10 0
Westland County.			
Improving road, Seven-mile, Taipo	150 0 0	54 13 6	20 6 6
Widening Shallow Rush Track	300 0 0	..	150 0 0
	450 0 0	54 13 6	170 6 6
Tuapeka County.			
Fitzgerald's Bridge	500 0 0	10 0 0	240 0 0
Lake County.			
Skipper's Bridge	4,244 0 0	2,500 0 0	744 0 0

List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
Works under construction wholly by Mines Department.	£ s. d.	£ s. d.	£ s. d.
Opitonui Township Road (repairs)	100 0 0	..	100 0 0
Four-in-Hand Road	135 0 0	129 18 0	5 2 0
Manaia–Waikawau (repairs)	100 0 0	..	100 0 0
Cabbage Bay Road	90 0 0	..	90 0 0
Waitaia Mine Road (metalling)	40 0 0	..	40 0 0
Waitaia Mine Road to Battery	100 0 0	..	100 0 0
Maratoto Road	199 15 0	99 15 0	100 0 0
Thames Road to McLaughlin's (repairs)	50 0 0	..	50 0 0
Drain, Te Aroha West	150 0 0	..	150 0 0
Cullensville–Waikakaho	55 0 0	25 0 0	30 0 0
Footbridge, Wakamarina River	50 0 0	..	50 0 0
Kanieri River Bridge	30 15 0	..	30 15 0
Dredging, Titri Canal	30 0 0	12 0 0	18 0 0
Whakapara–Puhipuhi	650 0 0	450 0 0	200 0 0
Tairua–Whenuakite	550 0 0	400 0 0	150 0 0
Cabbage Bay–Port Charles and Cape Colville	2,020 0 0	1,771 18 5	248 1 7
Coromandel–Cabbage Bay	800 0 0	684 8 7	115 11 5
Tokatea–Kennedy Bay	935 0 0	685 0 0	250 0 0
Coromandel–Kuaotunu, *viâ* Matarangi	1,400 0 0	993 2 0	406 18 0
Tiki–Kaimarama	700 0 0	584 16 6	115 3 6
Tiki–Manaia	1,245 13 0	695 13 0	550 0 0
Manaia–Waikawau	3,400 0 0	2,795 0 0	605 0 0
Mercury Bay–Whenuakite and Boat Harbour	400 0 0	350 0 0	50 0 0
Whitianga–Gumtown	450 0 0	200 0 0	250 0 0
Coromandel–Whangapoua	850 0 0	603 5 6	246 14 6
Extending Wharf Road, Coromandel	900 0 0	678 12 6	221 7 6
Whitianga–Kaimarama	386 0 0	140 0 0	246 0 0
Mahakirau Goldfield Road	150 0 0	70 1 3	79 18 9
Tiki–Te Koumu	150 0 0	84 0 0	66 0 0
Ohuka Creek Bridge	350 0 0	..	350 0 0
Four-in-Hand Road	150 0 0	..	150 0 0
Bridle's Point–Deepwater	100 0 0	..	100 0 0
Opitonui Bridge	200 0 0	..	200 0 0
Cabbage Bay–Matamataharakeke	100 0 0	..	100 0 0
Waiwawa River Bridge	350 0 0	..	350 0 0
Gumtown Road	424 0 0	380 0 0	44 0 0
Kapowai Track	389 0 0	..	389 0 0
Mahaki Goldfield Track	100 0 0	..	100 0 0
Thames–Waikawau	2,242 11 7	2,168 16 7	73 15 0
Thames–Hikutaia	1,881 0 1	1,699 3 1	181 17 0
Upper Tararu Road	1,345 9 11	1,282 0 2	63 9 9
Tapu Creek and extension	1,356 1 11	1,302 16 11	53 5 0
Turua–Netherton	1,432 0 0	1,181 17 7	250 2 5
Hikutaia–Whangamata "Wires" Track	1,749 9 0	1,545 19 0	203 10 0
Matatoki Road	539 0 0	414 18 6	124 1 6
Wharepoa Settlement Road	853 6 11	757 6 11	96 0 0
Omahu–Whangamata	1,539 0 0	1,349 18 0	189 2 0
Thames River–Whangamata	200 0 0	100 0 0	100 0 0
Neavesville–Upper Landing	300 0 0	287 0 0	13 0 0
Upper Landing–Tairua	150 0 0	100 0 0	50 0 0
Wharepoa Drain	200 0 0	..	200 0 0
Whangamata Harbour–Wharekawa	200 0 0	..	200 0 0
Whangamata to Wentworth	100 0 0	47 3 2	52 16 10
Karaka Creek Road	100 0 0	..	100 0 0
Hape Creek Road	100 0 0	..	100 0 0
Waiotahi Road	200 0 0	..	200 0 0
Waiomo Creek Road	400 0 0	307 10 0	92 10 0
Lower Tairua–Broken Hill Track	150 0 0	45 0 0	105 0 0
Hikutaia–Waihi	3,125 0 0	2,561 12 6	563 7 6
Waitekauri–Golden Cross	1,855 0 0	1,535 13 2	319 6 10
Waihi–Whangamata	558 0 0	358 6 0	199 14 0
Paeroa–Te Aroha	596 0 0	472 12 8	123 7 4
Paeroa–Waitoa	1,735 13 4	1,269 8 4	466 5 0
Komata Reefs–Waitekauri	300 0 0	200 0 0	100 0 0
Hikutaia–Waitekauri	1,019 0 0	914 0 0	105 0 0
Waitekauri–Wharekiraupunga	298 8 6	98 8 6	200 0 0
Roads, Netherton	495 0 0	345 0 0	150 0 0
Hikutaia–Maratoto	200 0 0	..	200 0 0
Tui Mine Track	200 0 0	..	200 0 0
Waihi County Boundary Track	250 0 0	..	250 0 0
Karangahake–Rotokohu Track	150 0 0	..	150 0 0
Karangahake–Maungakara	150 0 0	..	150 0 0
Mill Road	200 0 0	20 0 0	180 0 0
Thompson's Track	4,618 19 11	4,323 19 11	295 0 0
Waihi–Katikati	1,400 0 0	900 0 0	500 0 0
Havelock–Tuamarina	486 12 3	378 12 3	108 0 0
Onamalutu–Wakamarina	700 0 0	400 0 0	300 0 0
Repairs, Kaituna Bridge	150 0 0	81 3 6	68 16 6
Tuamarina–Kaituna	183 19 2	177 17 1	6 2 1
Rocky Ferry–Kaituna	600 0 0	..	600 0 0
Bonny Doon Road	1,386 0 0	985 13 7	400 6 5
Anatoki Track	150 0 0	95 3 0	54 17 0
Vants to Bubu	200 0 0	100 0 0	100 0 0
Kaituna–Ferntown	150 0 0	67 10 0	82 10 0
Ferntown–Pakawau	473 0 0	300 0 0	173 0 0
Takaka Bridge protective works	150 0 0	130 0 0	20 0 0
Takaka–Collingwood "Inland" Road	2,629 0 0	2,399 1 7	229 18 5
Bainham–Upper Aorere Valley	100 0 0	..	100 0 0
Takaka Hill Road	150 0 0	127 10 0	22 10 0

List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
Works under construction wholly by Mines Department—*continued.*	£ s. d.	£ s. d.	£ s. d.
Taitapu Boundary Track	200 0 0	..	200 0 0
Paka rau–Tamatea	200 0 0	..	200 0 0
Bainham Bridge	200 0 0	..	200 0 0
Motueka River Protective-works	280 5 8	..	280 5 8
Wangapeka–Baton	600 0 0	151 18 3	448 1 9
Lloyd's Valley Road Bridges	150 0 0	100 0 0	50 0 0
Thorpe to Churchill	200 0 0	100 0 0	100 0 0
Shaggery Road	100 0 0	..	100 0 0
Riwaka–Kaiteriteri Beach Road	204 0 0	100 0 0	104 0 0
Canaan Road	300 0 0	250 18 8	49 1 4
Graham River Bridge	150 0 0	..	150 0 0
Glenrae–Tadmor	100 0 0	40 2 6	59 17 6
Brooklyn Valley Road	100 0 0	80 8 1	19 11 11
Thorpe–Neudorf	100 0 0	..	100 0 0
Chandler's–Wangapeka Junction	200 0 0	151 0 0	49 0 0
Chandler's–Rolling River	200 0 0	..	200 0 0
Millerton Road	500 0 0	450 0 0	50 0 0
Lvell Bridge–Ryan's	900 0 0	700 0 0	200 0 0
Wilson's Lead Road	750 0 0	600 0 0	150 0 0
Oparara River Road–Karamea	550 0 0	400 0 0	150 0 0
Stoney Creek Road–Waimangaroa	200 0 0	..	200 0 0
Bradshaw's Lead Road	200 0 0	100 0 0	100 0 0
Westport–Mokihinui	1,000 0 0	750 0 0	250 0 0
Costello's Hill Road–Charleston	750 0 0	550 0 0	200 0 0
Lvell–Eight-mile, widening	550 0 0	500 0 0	50 0 0
Addison's Road–Buller Road	750 0 0	500 0 0	250 0 0
Land of Promise Road	500 0 0	250 0 0	250 0 0
Karamea Mud Flat Road	600 0 0	350 0 0	250 0 0
Mokihinui end of Westport Road	700 0 0	450 0 0	250 0 0
Fenian Creek Track	250 0 0	100 0 0	150 0 0
Karamea River Protective Works	200 0 0	..	200 0 0
Coalbrookdale–Cedar Creek	200 0 0	..	200 0 0
Char eston–Brighton	100 0 0	..	100 0 0
Nile River Bridge, Charleston	300 0 0	..	300 0 0
Brighton–Grey County boundary	500 0 0	250 0 0	250 0 0
Deadman's Creek, Brighton	150 0 0	..	150 0 0
Caroline Terrace	100 0 0	..	100 0 0
Addison's Road	100 0 0	..	100 0 0
Mullocky Creek, Karamea	100 0 0	..	100 0 0
Lyell–Cedar Creek	150 0 0	..	150 0 0
Millerton–Mine Creek	145 0 0	..	145 0 0
Mokihinui–Ngakawau	250 0 0	100 0 0	150 0 0
Waimangaroa–Birchfield	200 0 0	..	200 0 0
Fairdown–Waimangaroa	450 0 0	200 0 0	250 0 0
Murray Creek–Waitahu	568 16 6	456 0 0	112 16 6
Reefton–Maruia	2,685 8 0	2,472 0 0	213 8 0
Snowy Creek to Reefs	575 0 0	550 0 0	25 0 0
Matakitaki–Glenroy–Maruia	770 0 0	482 0 0	288 0 0
Black's Point Road, widening	1,093 0 0	1,051 3 3	41 16 9
Big River–St. George	250 0 0	195 0 0	55 0 0
Mangles Valley Road	610 0 0	543 7 9	66 12 3
Blackwater–Big River	300 0 0	150 0 0	150 0 0
Boatman's Valley Road Bridge	250 0 0	..	250 0 0
Waipuna Road	775 0 0	625 0 0	150 0 0
Cobden–Barrytown, repairs	1,572 0 0	1,522 0 0	50 0 0
Blackball Footbridge (Brunner–Moonlight Road)	620 0 0	380 0 0	240 0 0
Barrytown–Paparoa extension	200 0 0	150 0 0	50 0 0
Eight-mile Creek Bridge	400 0 0	200 0 0	200 0 0
Blackball–Healey's Gully	700 0 0	650 0 0	50 0 0
Ten-mile–Paparoa	250 0 0	..	250 0 0
Seven-mile Creek–Nine-mile Bluff	400 0 0	..	400 0 0
Brown's Terrace–Kotuku	100 0 0	75 0 0	25 0 0
Granville–Grey River	150 0 0	75 0 0	75 0 0
Blackball Footbridge approaches	250 0 0	225 0 0	25 0 0
Twelve-mile Bluff–Fourteen-mile Bluff	100 0 0	75 0 0	25 0 0
Cape Terrace Road	200 0 0	150 0 0	50 0 0
Cobden–Point Elizabeth	100 0 0	50 0 0	50 0 0
Nelson Creek–Bell Hill	250 0 0	200 0 0	50 0 0
Big River–Slatey Creek	100 0 0	75 0 0	25 0 0
Hatter's Terrace–Bell Hill	250 0 0	200 0 0	50 0 0
Wataroa Bluff Track	394 4 8	294 4 8	100 0 0
Doughboy Road extension	200 0 0	48 7 0	151 13 0
Milltown Track deviation	400 0 0	319 11 6	80 8 6
Gillam's Gully Track extension	400 0 0	229 4 0	170 16 0
Seven mile Creek–Taipo	750 0 0	520 0 0	230 0 0
Browning's Pass Track	300 0 0	190 1 6	109 18 6
Seddon's Terrace Track extension	200 0 0	100 0 0	100 0 0
Middle Branch, Styx River	400 0 0	200 0 0	200 0 0
Kumara Beach Road–Teremakau	800 0 0	376 0 0	424 0 0
Lamplough Track	100 0 0	56 17 0	43 3 0
Right-hand Branch Track	100 0 0	..	100 0 0
Kanieri Forks–Greek's Gully	150 0 0	..	150 0 0

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
WORKS UNDER CONSTRUCTION WHOLLY BY MINES DEPARTMENT—*continued.*	£ s. d.	£ s. d.	£ s. d.
South Spit–Mahinapua	400 0 0	..	400 0 0
Ogilvie's Beach Road	100 0 0	..	100 0 0
Kanieri Forks Road	250 0 0	11 14 0	238 6 0
Ross Cemetery Road	200 0 0	..	200 0 0
Waipori–Berwick	200 0 0	..	200 0 0
Outram–Waipori	200 0 0	..	200 0 0
Clarendon–Berwick	250 0 0	150 0 0	100 0 0
Table Hill Road–Canada Reefs	100 0 0	..	100 0 0
Lawrence–Waipori	1,700 0 0	1,375 0 0	325 0 0
Waitahuna–Lawrence	350 0 0	200 0 0	150 0 0
Waipori–Waitahuna	200 0 0	150 0 0	50 0 0
Lawrence–Clyde	3,900 0 0	3,425 0 0	475 0 0
Waipori Bush Road	600 0 0	450 0 0	150 0 0
Lawrence–County boundary	500 0 0	250 0 0	250 0 0
Waipori–Outram	150 0 0	50 0 0	100 0 0
Beaumont–Rankleburn	250 0 0	50 0 0	200 0 0
White's Reef–Fraser Basin	100 0 0	..	100 0 0
Clyde–Queenstown	1,450 0 0	1,100 0 0	350 0 0
Nevis Valley Road	400 0 0	200 0 0	200 0 0
Dairy Creek to Coal Pits	100 0 0	88 0 0	12 0 0
Hawea–Lindis Pass	150 0 0	..	150 0 0
Cromwell Borough–Lowburn	100 0 0	..	100 0 0
Alexandra Bridge	750 0 0	..	750 0 0
Arrowtown–Macetown	1,400 0 0	1,200 0 0	200 0 0
Shotover River Track	300 0 0	200 0 0	100 0 0
Garston–Nevis	400 0 0	100 0 0	300 0 0
Crown Terrace–Cardrona	150 0 0	..	150 0 0
Arthur's Point–Moke Creek	150 0 0	..	150 0 0
Nokomai Saddle Road	150 0 0	..	150 0 0
Waimumu Dredging Claims Road	200 0 0	100 0 0	100 0 0
Parrawa Nokomai Bridge	308 0 0	250 0 0	58 0 0
Waimumu Road	200 0 0	..	200 0 0
Croydon Dredging Claims Road	200 0 0	..	200 0 0
Garvie Burn Road	42 0 0	..	42 0 0
Glenrae Bridge	400 0 0	..	400 0 0
Stoney Ford Bridge	300 0 0	..	300 0 0
Waikaka Township–Little Waikaka	150 0 0	..	150 0 0
Colac–Round Hill	400 0 0	250 0 0	150 0 0
Top Valley Road	500 0 0	71 10 0	428 10 0
Picton–Grove	1,862 5 0	1,640 9 0	221 16 0
Wangapeka–Kiwi	381 0 0	338 6 5	42 13 7
Larry's Creek Bridge extension	536 3 3	360 3 3	176 0 0
Glenroy Bridge	775 4 0	620 7 4	154 16 8
Mokihinui–Little Wanganui	3,186 0 0	3,065 12 6	120 7 6
Warwick–Maruia Footbridge	200 0 0	7 15 6	192 4 6
Boatman's Creek Bridge	150 0 0	..	150 0 0
Burke's Creek Bridge	200 0 0	..	200 0 0
Inangahua Bridge	1,000 0 0	246 3 5	753 16 7
Big Ohika Creek Bridge	500 0 0	..	500 0 0
Blackwater Bridge	200 0 0	..	200 0 0
Reefton–Hokitika–Ross	10,827 12 9	10,645 5 9	182 7 0
Stafford–Awatuna	1,229 12 4	1,171 8 4	58 4 0
Roads, Preservation Inlet	499 16 2	442 16 8	56 19 6
Tracks, Cromarty	407 5 0	216 6 3	190 18 9
Roads, Stewart Island	200 0 0	113 15 1	86 4 11
Stewart Island Road to Mines	250 0 0	185 11 3	64 8 9
Alpha Track	200 0 0	..	200 0 0
Sealer's Creek Track	100 0 0	..	100 0 0
Westport–Waimangaroa	629 14 8	395 11 2	234 3 6
Karamea Bridge	3,855 9 0	1,869 19 0	1,985 10 0
Lake Hochstetter Track	180 0 0	80 0 0	100 0 0
Saltwater Creek Bridge	80 0 0	..	80 0 0
Ahaura–Haupiri	1,250 0 0	986 17 6	263 2 6
Okarito Forks–Waiho	937 1 8	690 16 1	246 5 7
Sawyer's Creek Bridge	300 0 0	..	300 0 0
Ross Creek Bridge (Main Grey Road)	100 0 0	..	100 0 0
Denniston Hill Road	4,256 18 11	4,000 18 5	256 0 6
Potts Creek Bridge	300 0 0	..	300 0 0
Taylorville Bridge	300 0 0	..	300 0 0
Ahaura–Orwell Creek	531 0 5	307 5 5	233 15 0
Ahaura Bridge	3,150 0 0	2,771 7 11	378 12 1
Orwell Creek Bridge	200 0 0	7 2 0	192 18 0
Main Grey Bridge (repairs)	500 0 0	..	500 0 0
Deadman's Creek Bridge	150 0 0	..	150 0 0
Moonlight Creek Bridge	300 0 0	..	300 0 0
Waipuna Creek Bridge	100 0 0	..	100 0 0
Collingwood Bridge	1,000 0 0	8 10 1	991 9 11
Blind Bay–Whangaparapara	744 1 5	644 1 5	100 0 0
	149,349 15 0	103,261 10 8	46,088 4 4

LIST of WORKS on GOLDFIELDS, &c.—*continued*.

Locality and Nature of Works.	Total Cost, or Amount authorised.	Amount of Contribution paid by Mines Department.	Amount due by Mines Department on Works still in Progress.
SCHOOLS OF MINES.	£ s. d.	£ s. d.	£ s. d.
Schools of Mines	18,970 4 1	18,970 4 1	..
School of Mines (Otago University)	8,553 6 2	8,553 6 2	..
	27,523 10 3	27,523 10 3	..
PROSPECTING SUBSIDIES.			
Miners' Association, Ross (Moye and Son)	60 0 0	14 19 6	16 10 0
Miners' Association, Ross (Paterson and McGowan)	26 0 0	4 0 0	9 0 0
Miners' Association, Greenstone (Kiely and Korman)	160 0 0	..	80 0 0
Miners' Association, Waiho (Nelly and Murray)	26 0 0	2 0 0	11 0 0
Miners' Association, Nelson Creek (Kelly and party)	200 0 0	29 15 0	80 5 0
Miners' Association, Red Jacks (Drummond and McRaynor)	50 0 0	12 0 0	12 0 0
Miners' Association, Charleston (Nelson and party)	300 0 0	50 4 9	59 15 3
Miners' Association, Havelock (Kearn and McCusker)	48 0 0	20 0 0	4 0 0
Towai-Hukerenui Coal Syndicate	200 0 0	35 2 0	164 18 0
Ohinemuri County (P. Prudence)	6 15 0	1 4 0	5 11 0
Coromandel County (J. and M. Fitzgerald)	28 1 0	9 16 6	18 4 6
Westland County (Roseveri and party)	160 0 0	..	80 0 0
Westland County (Moynihan and party)	160 0 0	..	80 0 0
Westland County (Irwin and party)	250 0 0	35 0 0	215 0 0
Johnston, Bryan, and party (tunnel, Seddon's Terrace)	300 0 0	102 16 0	197 4 0
	1,974 16 0	316 17 9	1,033 7 9
WATER-RACES.			
Waimea-Kumara Water-race	45,889 19 1	45,889 19 1	50 0 0
Mount Ida Water-race	9,051 19 9	9,051 19 9	..
Mountain Hut Water-race	221 0 6	221 0 6	..
	55,162 19 4	55,162 19 4	50 0 0
DRAINAGE- AND TAILINGS-CHANNELS.			
Waimea Main Tail-race	1,800 0 0	1,245 1 8	35 4 0
St. Bathan's Channel	3,000 0 0	1,562 10 0	437 10 0
Kelly's Terrace Tunnel	2,667 10 0	1,454 7 9	454 13 3
	7,467 10 0	4,261 19 5	927 7 3
WATER-CONSERVATION ON GOLDFIELDS.			
Engineer's salary and expenses	1,514 6 5	1,514 6 5	..
Reports on Drainage, Ross Flat	284 10 8	284 10 8	..
Eweburn Reservoir	16,182 13 2	16,182 13 2	..
Coromandel Harbour and Kuaotunu Sludge-channel	80 12 6	80 12 6	..
Waitekauri Water-supply	445 2 5	445 2 5	..
Karangahake "	607 6 5	607 6 5	..
	19,114 11 7	19,114 11 7	..
Summary of Works.			
Roads (subsidised)—			
Coromandel County	700 0 0	330 0 0	160 0 0
Thames County	900 0 0	100 18 6	349 1 6
Thames Borough	275 0 0	175 0 0	100 0 0
Ohinemuri County	800 0 0	417 16 10	172 3 2
Matamata Road Board	..	..	..
Katikati Road Board	..	..	..
Piako County	100 0 0	..	60 0 0
Picton Road Board	..	..	..
Pelorus Road Board	..	..	..
Waimea County	..	..	..
Collingwood County	1,000 0 0	184 16 4	415 3 8
Buller County	950 0 0	100 0 0	375 0 0
Grey County	850 0 0	80 0 0	347 10 0
Westland County	450 0 0	54 13 6	170 6 6
Tuapeka County	500 0 0	10 0 0	240 0 0
Lake County	4,244 0 0	2,500 0 0	744 0 0
Vincent County	..	..	..
	10,769 0 0	3,953 5 2	3,133 4 10
Works under construction wholly by Mines Department	149,349 15 0	103,261 10 8	46,088 4 4
Schools of Mines	27,523 10 3	27,523 10 3	..
Prospecting subsidies	1,974 16 0	316 17 9	1,033 7 9
Water-races	55,162 19 4	55,162 19 4	50 0 0
Drainage- and tailings-channels	7,467 10 0	4,261 19 5	927 7 3
Compensation, proclamation of rivers	12,767 13 3	12,767 13 3	..
Water-conservation on goldfields	19,114 11 7	19,114 11 7	..
Total	284,129 15 5	226,362 7 5	51,232 4 2

LIST of WORKS on GOLDFIELDS constructed wholly by the Mines Department, or by Subsidies to County Councils, Local Bodies, and Prospecting Associations, and completed prior to the 31st March, 1901.

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
NORTH ISLAND.						
ROADS (SUBSIDISED).						
Bay of Islands County.	£	s.	d.	£	s.	d.
Tiriwhanga Gorge to Galbraith's Road, Puhipuhi	237	0	0	118	10	0
Air-line Road to battery-site, Puhipuhi	73	0	0	36	10	0
Tiriwhanga Gorge to Puhipuhi	800	0	0	800	0	0
New Bay of Islands Coal Company	500	0	0	250	0	0
Road, Taumarere Railway-station to Puhipuhi	482	0	0	146	0	0
	2,092	0	0	1,351	0	0
Coromandel County.						
Improving road to Iona and Just-in-Time Companies' mines	200	0	0	133	6	8
Making and improving track from Tokatea towards Kennedy Bay	320	0	0	213	6	8
Golden Belt Track	100	0	0	50	0	0
Tokatea Road (repairs)	300	0	0	150	0	0
Making and improving track from Golden Belt to Tiki	239	3	3	159	8	10
Making road from Ring's Bridge to Kapanga Mine	150	0	0	100	0	0
Making road to Kapanga Mine	132	0	0	88	0	0
Temporary track from Tokatea Saddle to Waikoromiko	50	0	0	33	6	8
Continuation of track from Success Company's mine to top of main range	80	0	0	53	6	8
Completion of road from Tokatea Saddle to Tokatea Battery	50	0	0	33	6	8
Widening road from Matawai to Vaughan's claim	357	0	0	238	0	0
Improving track, Mercury Bay to Waitai	100	0	0	66	13	4
Continuation and improving Waikoromiko Track	150	0	0	100	0	0
Emily Battery to Rocky Creek	60	0	0	40	0	0
Track, Bismarck Battery to Kennedy Bay	200	0	0	133	6	8
Road up Manaia	675	10	6	450	7	0
Extension of Vaughan's and Vizard's Tracks	150	0	0	100	0	0
Vizard's towards Marebel	200	0	0	133	6	8
Extending and widening Waitaia Road	100	0	0	66	13	4
Makarau to Waiau	1,600	0	0	1,066	13	4
Waikawau to Tiki	500	0	0	333	6	8
Paul's Creek to Cabbage Bay	200	0	0	133	6	8
Waikawau Creek Track	100	0	0	50	0	0
McLaughlin's Road	100	0	0	50	0	0
Manaia to McGregor's new find	100	0	0	50	0	0
Manaia to Tiki	500	0	0	250	0	0
Old sawmill towards Matawai	200	0	0	100	0	0
Extension of Paul's Creek Track	300	0	0	150	0	0
Matarangi Track	400	0	0	200	0	0
Thames–Coromandel Road, *viâ* Manaia	300	0	0	150	0	0
Harbour View extension	210	0	0	105	0	0
Kapanga to Paul's Creek	200	0	0	100	0	0
Mercury Bay to Kuaotunu	360	0	0	180	0	0
Wainara to Kuaotunu	450	0	0	225	0	0
Sea-beach to Kuaotunu	1,650	0	0	1,450	0	0
Just-in-Time Road, extension to Coromandel	450	0	0	225	0	0
Road, Waikawau Bridge to McLaughlin's	67	10	0	45	0	0
Mercury Bay Road	990	0	0	495	0	0
Bridge to Dugend's store, and widening and metalling road from bridge to Log Hut	450	0	0	300	0	0
Road from junction of Red Mercury battery up Pumpkin Flat to Waitaia	345	0	0	230	0	0
To connect road from Log Hut to commencement of contract of Kuaotunu–Mercury Bay Road	150	0	0	100	0	0
Road, with culverts and bridge, from Kapanga Hill to Scotty's Gold-mining Company's mine	200	0	0	150	0	0
Pumpkin Flat–Just-in-Time Road	310	0	0	170	0	0
Lower road from Great Mercury battery to Kapai low level and battery-site	450	0	0	300	0	0
Road from main road, Kapanga to Success Mine	600	0	0	300	0	0
Cemetery Road and Bridge, Kuaotunu	100	0	0	75	0	0
Road from Coromandel–Kennedy Bay Main Road to Wereroa Creek	300	0	0	150	0	0
Leading Wind Mine Road	100	0	0	50	0	0
Fury's Bridge	450	0	0	225	0	0
Carroll's Bridge	400	0	0	200	0	0
Horne's Bridge	200	0	0	100	0	0
Road from Main Kennedy Bay Road to Monte Carlo and other claims	300	0	0	150	0	0
Castle Rock Mine Road, Tiki	200	0	0	100	0	0
Road between Bismarck Battery and Hauraki Associated Gold-reefs	400	0	0	200	0	0
Bridge, Warekaho Creek	300	0	0	150	0	0
Cabbage Bay to Mines	300	0	0	150	0	0
Two bridges and approaches, Kuaotunu Main Road	300	0	0	150	0	0
Road from Success Road to workings of Karaka Block Syndicate	200	0	0	100	0	0
Widening Waitaia Battery Road	100	0	0	50	0	0
Cabbage Bay–Waitete	240	0	0	120	0	0
Cabbage Bay–Ward's Track	200	0	0	100	0	0
	18,886	3	9	11,320	15	10

List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
	£ s. d.	£ s. d.
Te Aroha Town Board.		
Road to connect with railway-station	120 0 0	60 0 0
Lipsey's Bridge	64 0 0	32 0 0
Repairing flood-damages	150 0 0	75 0 0
	334 0 0	167 0 0
Thames County.		
Making new road from Ohinemuri River to Karangahake Quartz-mine	650 0 0	433 6 8
Dray-road to connect Otanui Mines with crushing-battery at Maungawherawhera Creek	710 0 0	473 6 8
Improving roads from Waitekauri Road to Katikati Road	250 0 0	166 13 4
Improving road up Karaka Creek to Lucky Hit Company's mine	263 1 0	175 7 4
Improving road to upper mines, Waitahi	258 18 10	172 12 7
Karangahake to battery	300 0 0	200 0 0
Ralph's Battery, Waitekauri	399 1 0	199 10 6
Otanui Road to mines	299 18 0	199 18 8
Road to Wick's Battery	70 0 0	46 13 4
Rocky Point Road, Tararu	300 0 0	200 0 0
Thames Borough boundary to hæmatite-mine	350 0 0	233 6 8
Widening road from bridge over Hape Creek to Otanui Mines	183 17 0	122 11 4
Track, Karangahake Goldfield	784 1 0	522 14 0
Kauaeranga Valley to Otanui	470 7 0	313 11 4
Tapu Road to mines	81 17 9	54 11 10
Tauranga Road to Karangahake Bridge site	341 5 0	227 10 0
Karangahake Bridge	229 6 6	152 17 8
Track up Maungakerikeri Creek	93 4 4	62 2 11
Thames Borough boundary to Hape Creek No. 2	600 0 0	300 0 0
Upper Karaka Road	179 13 0	119 15 4
Repairing flood-damages, Waiotahi, Moanataiari, Karaka, and Collarbone Roads	350 0 0	175 0 0
Sea-beach to Waiomo	750 0 0	375 0 0
Te Papa Gully Road	75 0 0	37 10 0
New Find to Waiomo Battery	110 0 0	55 0 0
Rocky Point Road	429 11 10	214 15 11
Waiotahi towards Mercury Bay	522 11 0	261 5 6
Te Mata Road	178 17 6	89 8 9
Waiomo Creek to Tapu	1,499 0 0	749 10 0
Alabama Creek Track	100 0 0	50 0 0
Road from Prospectors' Mine, Puriri, to battery	50 0 0	25 0 0
Karaka Creek to Lucky Hit	365 0 0	182 10 0
Bullion Mine, Tapu, to battery	36 5 0	18 2 6
Track to Hikutaia Goldfield	147 15 2	73 17 7
Upper Tararu Road to Sylvia Mine	684 7 0	342 3 6
Road to Puriri Battery	11 13 0	5 16 6
Thames–Waikawau Road	37 10 0	18 15 0
Track from Tararu Creek Road to McDermot's Claim	45 0 0	22 10 0
Track to Try Fluke Claim, Tapu	94 15 0	47 7 6
Waiomo to Puhoi Creek	33 0 0	16 10 0
Waiokaraka Road, Bella Street, and Campbell Street to Moanataiari Creek	200 0 0	100 0 0
Moanataiari Creek Road	100 0 0	50 0 0
Tararu Creek Road and Tararu Road	150 0 0	75 0 0
Hape Creek Road	150 0 0	75 0 0
Omahu–Tairua	100 0 0	42 0 0
Karaka Creek Road	150 0 0	68 4 6
Onetai Valley Road	40 0 0	12 10 0
Townsend's Road	30 0 0	26 12 0
	13,254 15 11	7,585 19 5
Thames Borough.		
Repairing roads	975 19 2	600 0 0
Widening and straightening Karaka Creek	300 0 0	150 0 0
Metalling goldfields roads	800 0 0	672 12 6
Removing *débris*, Karaka Creek	200 0 0	100 0 0
Half-cost damage, Hawk's stable	96 0 0	48 0 0
Repairs, Moanataiari Creek Tunnel	100 0 0	52 0 0
Repairs, Moanataiari and Waiotahi Aqueducts	620 0 0	375 0 0
Repairs, Waiotahi Creek Bridge	50 0 0	25 0 0
	3,141 19 2	2,022 12 6
Ohinemuri County.		
Jubilee Mine Track	118 0 0	59 0 0
Track up Tui Creek	306 0 0	153 0 0
Prospecting-track, Whangamata and Waitekauri	200 0 0	166 13 4
Tramway, Karangahake to Railey's reduction-works	400 0 0	200 0 0
Strengthening bridges, Waihi Road	200 0 0	133 6 8
Paeroa to Hikutaia	400 0 0	200 0 0
Repairs, flood-damages	34 13 8	17 6 10
Hikutaia River to Marototo Mine	180 15 0	90 7 6

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
	£ s. d.	£ s. d.
Ohinemuri County—continued.		
Karangahake through Gorge (bridge and culverts)	200 0 0	100 0 0
Waitekauri Lower Road	360 0 0	189 2 8
Metalling Karangahake Gorge Road	170 0 0	85 0 0
Karangahake and Waihi Road	237 10 0	118 15 0
Karangahake Hill Track	87 4 0	43 12 0
Bridge over Ohinemuri River at Karangahake	12 11 0	6 5 6
Hikutaia–Paeroa Road	500 0 0	250 0 0
Paeroa–Te Aroha Road	200 0 0	100 0 0
Tui Creek Track	129 18 6	64 19 3
Waitekauri to Lowrie's and Birnie's	200 0 0	100 0 0
Road, Karangahake to Waihi	246 12 3	164 8 2
Lower Waitekauri Road	347 13 4	230 16 4
Road, Thames Road to Netherton Punt	60 0 0	50 0 0
Komata Creek Road	600 0 0	300 0 0
Road, Paeroa Bridge to Kuaoti Creek	400 0 0	133 6 8
Punt at south end Netherton–Paeroa Road	275 0 0	175 0 0
Repairs, Waitekauri Township Road	200 0 0	100 0 0
Bridge, Paeroa–Te Aroha Road	60 0 0	30 0 0
Karangahake Bridge	1,032 0 0	512 16 9
Drain along Mill Road, Paeroa	200 0 0	90 2 5
Road, Te Iringa-o-Pirori Block	200 0 0	143 0 0
Low-level tunnel, Jubilee Mine (E. Kersey Cooper)	1,500 0 0	103 16 0
Road running south on left bank Waihou River	400 0 0	384 19 0
	9,457 17 9	4,495 14 1
Piako County.		
Extension and completion of Te Aroha Tramway	18,000 0 0	12,000 0 0
Tramway to Fergusson's Battery, Waiorongomai	1,500 0 0	1,000 0 0
Road, Waiorongomai	497 17 0	331 18 0
Track to claims at Buck's Reef	55 5 6	36 17 0
Track, Fern Spur to Butler's Spur	231 17 9	154 11 10
Tracks up Stony Creek, Te Aroha Goldfield, &c.	54 0 0	36 0 0
Repairs, Upper Premier Track and new track towards Waitawheta	40 0 0	20 0 0
Repairs, Te Aroha–Lichfield Road	302 0 0	125 0 0
Waiorongomai Tramway	263 2 0	175 0 0
Gordon–Waharoa	100 0 0	50 0 0
Te Aroha–Gordon	200 0 0	100 0 0
Murphy's Bridge	24 0 0	12 0 0
Repairs, Waiorongomai Tramway	150 0 0	75 0 0
Waihou Bridge	580 0 0	290 0 0
	21,998 2 3	14,406 6 10
Katikati Road Board.		
Katikati–Karangahake Track	400 0 0	200 0 0
Bridge on branch road to Katikati	68 0 0	34 0 0
Te Aroha Track	39 19 6	19 18 9
	507 19 6	253 18 9
Hutt County.		
Road to connect Otorongo Bay with Albion Company's battery, also to connect Terawhiti Quartz-mine with battery	509 16 6	210 17 0
Road, Makara Junction to Terawhiti	450 0 0	225 0 0
	959 16 6	435 17 0
SOUTH ISLAND.		
ROADS (SUBSIDISED).		
Marlborough County.		
Track, Deep Creek to Dead Horse Creek	68 0 0	45 6 8
Mouth of Gorge to Forks, Cullensville to Mahakipawa Diggings	450 0 0	225 0 0
Formation of road at Cullensville, Mahakipawa	217 4 0	108 12 0
Havelock–Mahakipawa Road	905 0 0	505 0 0
Dead Horse Creek to Sunnyside	75 0 0	50 0 0
	1,715 4 0	933 18 8
Waimea County.		
Road to open up Table Diggings	260 0 0	130 0 0
Punt over Motueka River	100 0 0	50 0 0
Repairing Baton to Table-land Track	40 0 0	20 0 0
Dove River to Baton Saddle, and from Rolling River to Wangapeka Saddle	120 0 0	60 0 0
Repairs, Motueka Bridge	939 8 8	469 14 4
	1,459 8 8	729 14 4

List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
	£ s. d.	£ s. d.
Collingwood County.		
Road, West Wanganui	300 0 0	200 0 0
Bridge over Aorere River	173 14 0	115 16 0
Extending Anatoki Bridle-track	160 0 0	80 0 0
Bridge over Takaka River at Pain's Ford	1,597 7 8	798 13 10
Repairs, Silverstream Bridge, and forming and metalling Bainham Road	200 0 0	100 0 0
	2,431 1 8	1,294 9 10
Buller County.		
Deviation of road from Candlelight Flat to Deep Creek, Charleston	370 0 0	246 13 4
Road from Orowaiti Lagoon to North Terrace	256 18 6	171 5 8
Prospecting track from Razorback to Paparoa Range	100 0 0	66 13 4
Track from Seatonville to Larrikin's	438 9 6	292 6 4
Waimangaroa to Denniston	787 0 0	393 10 0
Road to connect alluvial workings with Charleston Road	400 0 0	266 13 4
Track, Four-mile Creek towards Grey Valley	300 0 0	200 0 0
Road to connect alluvial diggings north of Deadman's Creek	278 0 0	185 6 8
Ngakawau to Mokihinui, *viâ* beaches	100 0 0	66 13 4
Road to connect Ngakawau Railway with Mokihinui Coal Company's workings	193 0 0	128 13 4
Lyell Bluff to Victor Emmanuel Claim	650 0 0	433 6 8
Beach, Little Wanganui to Mokihinui	300 0 0	100 0 0
Cape Foulwind Road	450 0 0	300 0 0
Road up Nile Valley	56 16 4	28 8 2
Denniston extension	850 0 0	425 0 0
Promised Land towards Motueka	380 0 0	190 0 0
Road over Gentle Annie	200 0 0	100 0 0
Extension, Lyell Creek to Low-level Tunnel	60 0 0	30 0 0
Extension of track 50 chains south of Brighton	140 0 0	70 0 0
Continuation of road, Deadman's Creek	437 17 0	218 18 6
Ngakawau Railway-station to Mokihinui	50 0 0	25 0 0
Addison's Flat towards ranges	20 0 0	10 0 0
North Terrace to Oparara Diggings	500 0 0	333 6 8
Extension of Croninville Road	100 0 0	50 0 0
Waimangaroa to sea-beach	80 0 0	40 0 0
Extension of track, Oparara to Fenian Creek	100 0 0	50 0 0
Con's Creek to Beaconsfield	80 0 0	40 0 0
Addison's Flat to Caroline Terrace	200 0 0	100 0 0
Waimangaroa to sea-beach extension	390 0 0	195 0 0
Addison's Flat to Gallagher's Lead	50 0 0	25 0 0
Road to Swanston's Gold-mining Company	50 0 0	25 0 0
Repairs to roads at Lyell	200 0 0	100 0 0
Track, Fairdown from North Terrace	150 0 0	97 8 0
Improving road to Four-mile Creek, Charleston	900 0 0	450 0 0
Bridge, Waimangaroa River	70 0 0	35 0 0
Road to Piper's Flat, Addison's	450 0 0	150 0 0
Lyell Creek to Gibstown	200 0 0	66 13 4
Buller River Footbridge below Lyell	250 0 0	170 0 0
Virgin Flat Road	200 0 0	100 0 0
	10,788 1 4	5,975 16 8
Inangahua County.		
Dray-road from Soldier's Creek to Devil's Creek	647 0 0	431 6 8
Dray-road from Inangahua to Rainy Creek Battery	900 10 0	606 6 8
Dray-road from Capleston up Little Boatman's Creek	379 0 0	252 13 4
Dray-road from Capleston up Main Boatman's Creek	697 0 0	464 13 4
Dray-road from Westport Road to Inangahua River	224 5 0	149 10 0
Track from Devil's Creek to Big River	134 3 6	89 9 0
Track from Waitahu River to Capleston	358 0 0	238 13 4
Survey and expenses	250 0 0	166 13 4
Track from Cariboo to Big River	728 0 0	364 0 0
Dray-road up Murray Creek to United Inglewood Claim	3,472 0 0	2,314 17 4
Road from Reefton to Big River, *viâ* Devil's Creek	614 0 0	307 0 0
Road up Big River	922 19 0	615 6 0
Continuation of dray-road up Little Boatman's Creek	169 7 6	112 18 4
Road from Capleston to Larry's Creek	640 0 0	426 13 4
Track to connect Capleston with Lone Star	75 0 0	50 0 0
Crushington to Globe Company's workings	403 0 0	201 10 0
Snowy Creek Track	85 15 0	42 17 6
Reefton to Big River	1,792 0 0	1,194 13 4
Glenroy to Horse Terrace	254 0 0	122 10 0
Devil's Creek to Globe Hill	917 6 2	458 13 1
Extension of dray-road to Boatman's *viâ* Painkiller	53 17 6	26 18 9
Mangles Valley to McGregor's Station	600 0 0	300 0 0
Globe Hill to Merrijigs	1,397 6 0	698 13 0
Larry's Creek to Lyell	1,061 15 0	530 17 6
Widening Larry's Creek Road	118 10 0	59 5 0
Road up Burke's Creek, Little Boatman's	149 0 0	74 10 0
Widening track from Scotia Tunnel, on Big River Road, to Inkermann Mine	200 0 0	80 9 0
Widening track from Fiery Cross Battery to Just-in-Time Shaft	300 0 0	150 0 0
	17,552 14 8	10,530 17 10

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
Grey County.	£ s. d.	£ s. d.
Road from No Town to Deep Creek	1,100 0 0	550 0 0
Road from Langdon's to Moonlight	1,600 0 0	800 0 0
Contribution from goldfields vote towards main road	2,296 6 6	2,296 6 6
Track, Waipuna to Clarke's River	1,200 0 0	800 0 0
Track, Cameron's to Cape Terrace	700 0 0	466 13 4
Road, Limestone to Maori Creek	800 0 0	533 6 8
Red Jack's to Nelson Creek	601 17 6	401 5 0
Barrytown to Deadman's	2,240 0 0	1,493 6 8
German Gully to Arnold's Flat	120 0 0	60 0 0
Baird's Terrace to Lake Brunner	400 0 0	200 0 0
Hatter's Terrace Road	1,000 0 0	500 0 0
Irishman's to Lake Brunner	2,400 0 0	1,200 0 0
Hatter's Terrace	600 0 0	400 0 0
Track, Baird's Terrace to Irishman's	250 0 0	125 0 0
Deep Creek to Bell Hill	1,331 0 0	665 10 0
Track to Blackball Diggings	790 0 0	395 0 0
Track from Ahaura, Kopara, Reese's Flat, to new rush on banks of Ahaura River	20 0 0	10 0 0
Renewal, bridge over Nelson Creek, Marsden–Dunganville Road	38 0 0	19 0 0
Repairs (corduroying), Cobden–Seven-mile Road	36 0 0	18 0 0
Repairs, Cobden–Point-Elizabeth Road	30 0 0	15 0 0
Extension Ngahere–Blackball Road to Blackball Ferry	50 0 0	25 0 0
Dray-bridge, Ten-mile Creek	688 0 0	344 0 0
Deviation, Moonlight Track	100 0 0	50 0 0
Repairs, bridges, Marsden–Dunganville Road	348 0 0	219 0 0
Seventeen-mile Bluff to Barrytown	80 0 0	40 0 0
Removing rocks, Nine- and Ten-mile Bluffs	100 0 0	50 0 0
Crœsus Battery-site, Paparoa	200 0 0	79 5 0
New River Bridge wing	100 0 0	86 0 0
River View Road	200 0 0	140 0 0
	19,419 4 0	11,981 13 2
Westland County.		
Improving track, Butcher's Creek to Gentle Annie Terrace	225 10 0	163 13 4
Bridle-track to Kanieri Lake	719 11 0	350 5 6
Bridle-track to Eel Creek	168 9 0	84 4 6
Tunnel-track, Galway Beach to Gillespie's Beach	437 5 0	218 12 6
Road from Duffer's Creek, Greenstone Road, to fifteen-mile peg, Christchurch Road	726 9 0	480 4 6
Continuation of track, Back Creek to Eel Creek	249 4 0	166 3 4
Bridle-track, Duffer's Creek, Bowen and Okarito Road, to sea-beach	333 18 0	222 12 0
Ross Borough boundary to Mount Greenland	1,280 15 0	853 16 8
Track, Kanieri Lake to Humphrey's Gully	279 2 0	186 1 4
Track, Larrikin's to Loop-line Dam	449 11 0	299 14 0
Rough Wainihinihi to Upper Dam	450 0 0	300 0 0
Browning's Pass to Reefs	3,311 6 0	2,207 10 8
Okarito Forks to Teal Creek	600 0 0	400 0 0
Road, Christchurch to Baldhill Range reefs	500 0 0	250 0 0
Extension of Tucker's Flat Road to New Rush	170 19 6	85 9 9
Hokitika Borough boundary (Reefton) to Shotover Rush	120 0 0	60 0 0
Track to New Rush, Back Creek	100 0 0	50 0 0
Repairing old track round Wataroa Bluff	50 0 0	25 0 0
New Rush, south side of Hokitika River	37 18 6	18 19 3
Cedar Creek Road to Farmer's Creek	55 7 0	27 13 6
Road to gold discovery near Blue Spur	75 0 0	37 10 0
Widening Seddon's Terrace Track	150 0 0	65 10 0
Branch Road at Seddon's Terrace	38 10 6	19 5 3
Track up Middle Branch, Styx River	30 0 0	15 0 0
	10,558 15 6	6,596 6 1
Taieri County.		
Mullocky Gully to Silver Peak	499 15 0	333 3 4
Lake County.		
Track, Skipper's to Phœnix and Scandinavian Reefs	292 2 3	194 14 10
Track to connect scheelite-mine with Lake Wakatipu	225 0 0	150 0 0
Arrowtown to Macetown, construction	225 0 0	150 0 0
Arrowtown to Macetown, maintenance	150 0 0	100 0 0
Invincible Quartz-reef Track, Rees River	300 0 0	200 0 0
Rees Valley to company's workings	61 7 6	30 13 9
Pack-track, Criffel Diggings	50 6 6	33 11 0
Left-hand Branch Road, Skipper's	63 9 10	31 14 11
Old Morven Ferry Road	289 0 0	144 10 0
Road to workings above Cardrona	70 0 0	35 0 0
Piers, Victoria Bridge	725 0 0	362 10 0
Skipper's Road Saddle to Deep Creek	200 0 0	100 0 0
Road up Dart River	150 0 0	75 0 0
Cutting on Homeward-bound Hill	100 0 0	75 0 0
	2,901 6 1	1,682 14 6

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
Tuapeka County.	£	s.	d.	£	s.	d.
Making road from top of Terrace to Waipori Bush	300	0	0	200	0	0
Road, Beaumont to Remarkable Bush	300	0	0	200	0	0
Improving road from Waipori Township to antimony-mines, Lammerlaw Ranges	200	0	0	133	6	8
Waipori Township to Waipori Bush	200	0	0	133	6	8
Clutha River to Campbell's	76	9	0	50	19	4
Waitahuna to copper-mine	200	0	0	133	6	8
Road to open up quarry for Waitahuna Bridge	160	9	10	106	19	11
Waipori Road, *viâ* Bungtown	566	8	10	283	4	5
Miller's Flat Bridge	11,242	0	0	6,621	0	0
Shelter-sheds and snow-poles	100	0	0	50	0	0
Waipori Bridge	800	0	0	400	0	0
Metalling, Lawrence–Waipori	550	0	0	341	3	6
	14,695	7	8	8,653	7	2
Cromwell Borough.						
Removal of sand	500	0	0	250	0	0
Wallace County.						
Track, Colac Bay to Round Hill	200	0	0	133	6	8
Pack-track to Round Hill, Colac, and Orepuki	1,050	0	0	500	0	0
Cutting tracks, Longwood	59	6	0	29	13	0
	1,309	6	0	662	19	8
Vincent County.						
Renewal bridge to Bannockburn	1,532	0	0	850	0	0
Maniototo County.						
Road to Serpentine Diggings	136	10	0	91	0	0
Pig and Whistle to Clarke's Diggings	200	0	0	133	6	8
Shepherd's Hut Flat to Vinegar Hill	100	0	0	66	13	4
Kyeburn Peninsula to main road	82	0	0	41	0	0
	518	10	0	332	0	0
Fiord County.						
Dusky Sound, tracks	300	0	0	200	0	0
Waitaki County.						
Road, Naseby to Livingstone	41	12	0	20	16	0
Southland County.						
Improving tracks from Mataura to Nokomai	75	0	0	50	0	0
Improving road, Waikaka to Leatham	150	0	0	100	0	0
Improving road from Waikaka Township to Leatham Creek	30	0	0	20	0	0
Improving road from Waikaka to Waikaka railway-siding	150	0	0	100	0	0
Widening and improving bush-track to Waikawa	150	0	0	100	0	0
Waikaka to Switzer's	150	0	0	100	0	0
Road near Waikaka Township	150	0	0	100	0	0
Waipapa to Six-mile Beach	175	0	0	87	10	0
Repairing bridges, Waikaia Bush	38	13	4	13	4	0
Dray-road to Ferry Terrace, Nokomai	100	0	0	50	0	0
Waikaia to Whitecomb	511	6	8	280	13	4
Parawa to Switzer's, *viâ* Nokomai	150	0	0	75	0	0
Track to Switzer's Freehold Gold-mining Company	175	0	0	175	0	0
Nevis Road	100	0	0	50	0	0
Parawa to Nokomai	150	0	0	75	0	0
Waikaia to Break-'em-All Claim	100	0	0	50	0	0
	2,355	0	0	1,426	7	4
DIAMOND AND OTHER DRILLS.						
Inangahua County Council (diamond)	2,000	0	0	1,000	0	0
Springfield Colliery Company (diamond)	1,250	0	0	625	0	0
Westland County Council (tiffin)	350	0	0	233	0	0
Diamond-drills for prospecting purposes	1,570	11	4	1,570	11	4
	5,170	11	4	3,428	11	4
WHARVES.						
Repairs to wharf, Coromandel	300	0	0	150	0	0
Anikiwi Jetty, Marlborough	135	15	9	135	15	9
	435	15	9	285	15	9
AIDS TO PROSPECTING.						
Construction of low-level tunnel, Terawhiti	750	0	0	150	0	0
Queen of Beauty Company, prospecting deep levels	300	0	0	150	0	0
Caledonian Low-level Company, prospecting deep levels	300	0	0	150	0	0
Red Hill Gold-mining Company, prospecting deep levels	600	0	0	300	0	0
Caledonian Low-level Company, low-level tunnel	2,700	0	0	300	0	0
Lyell Creek Extended Company, low-level tunnel	300	0	0	150	0	0
New Cromwell Gold-mining Company	250	0	0	100	0	0
Deep-level Association, Waipori	450	0	0	300	0	0

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
AIDS TO PROSPECTING—*continued.*	£	s.	d.	£	s.	d.
Little Boatman's deep-level tunnel	600	0	0	300	0	0
Oterongia Prospecting Association	198	17	2	99	8	7
Vincent County	137	9	0	68	14	6
Tapanui Prospecting Association	25	0	0	12	10	0
Tuapeka County	12	0	0	6	0	0
Maniototo County	500	0	0	250	0	0
Pullar, Shelmerdine, and Basan	400	0	0	200	0	0
Royal Oak Association	300	0	0	150	0	0
Star of the East Quartz-mining Company	150	0	0	75	0	0
West Coast Prospecting Association	300	0	0	150	0	0
McBride and party	169	2	2	84	11	1
McLean and party	66	0	0	33	0	0
Deep-level tunnel, Tokatea	700	0	0	350	0	0
Deep-level tunnel, Owharoa	300	8	0	200	5	4
Deep-level tunnel, Tapu	1,200	0	0	600	0	0
Deep-level tunnel, Cedar Creek	1,207	10	0	603	15	0
Manuka Flat Prospecting Association	200	0	0	100	0	0
Red Hill Minerals Company	437	19	10	218	19	11
Tuapeka Prospecting Association	277	0	0	138	10	0
Cardrona Prospecting Association	800	0	0	400	0	0
Cromwell Prospecting Association	500	0	0	250	0	0
Coromandel County	550	0	0	275	0	0
Thames County	309	18	0	154	19	0
Thames Borough	200	0	0	100	0	0
Buller County	146	12	6	73	6	3
Inangahua County	488	7	0	244	3	6
Westland County	1,236	19	4	618	9	8
Grey County	871	15	2	435	17	7
Deep-level Prospecting Association, Waipori	432	9	8	216	4	10
Waipu Prospecting Association	180	0	0	90	0	0
Hokianga County	100	0	0	50	0	0
Vulcan Smelting-works, Onehunga	30	0	0	15	0	0
Ohinemuri County	100	0	0	50	0	6
Waitaki County	29	5	0	14	12	6
Waihemo County	85	9	0	42	14	0
William Fox and party	711	1	8	355	10	11
Kirk and party	176	0	10	88	4	10
Hodge and party	98	13	8	49	6	10
Carey and Hyndman	441	9	4	220	14	0
Don, Boyce, and party	107	16	0	53	18	0
Quentin McKinnon	58	10	0	29	5	0
Bullion Mine deep-level tunnel	300	0	0	150	0	0
Sutherland and party	30	0	0	15	0	0
Inangahua low-level tunnel	6,966	0	0	3,000	0	0
Deep-level tunnel, Manaia	451	4	0	225	12	0
Waimea Miners' Association, prospecting at Callaghan's	50	0	0	50	0	0
Totara Miners' Association, Ross	51	3	6	51	3	6
Ross, Cunningham, and another	9	0	0	9	0	0
Wm. Thompson, stores from Benmore Station	2	1	10	2	1	10
Totara Miners' Association, Ross	8	6	6	8	6	6
Harris, Davidson, and party	27	7	6	27	7	0
Boatman's Tailings Company	150	0	0	150	0	0
Boys's tunnel, Bluespur	94	12	3	94	12	0
Totara Miners' Association (Ross, Montina, and party)	246	10	0	246	10	0
Gillam's Gully Prospecting Association	94	15	0	94	15	0
Deep-level Prospecting Committee, Dillmanstown	407	0	3	407	0	3
Westport Prospecting Association	25	0	0	25	0	0
Te Aroha Prospecting Association	20	12	6	20	12	6
Robert Richie, Kuaotunu	72	3	0	36	1	0
Owharoa Tunnel (Lindsay Jackson)	325	0	0	162	10	0
Coromandel County (£1 for £1)	200	0	0	100	0	0
Mr. G. Rehay, Arahura	98	15	0	49	7	6
Hyndman and party, Callaghan's Flat	552	14	6	276	7	3
Lakes Mapourika, Waiho, and Wataroa Miners' Association	53	12	0	26	16	0
Kumara Miners' Association	22	10	0	11	5	0
Thames Miners' Union	75	15	0	37	17	6
Star of Canterbury Miners' Association	38	5	0	19	2	6
Miners' Association, Rimu	16	0	0	8	0	0
Buller County (Messrs. Negri and others)	27	0	0	13	10	0
Johnson and party, tunnel at Callaghan's Flat	90	0	0	45	0	0
W. L. Webb, Nelson	24	0	0	12	0	0
Kumara Miners' Association (Solberg, Stewart, and party)	64	15	0	32	7	6
Buller County, between head of Fox's River, Brighton, and Deadman's Creek	29	5	0	14	12	6
Welcome United Gold-mining Company, Greymouth	245	12	6	122	16	3
Orepuki Miners' Association	90	0	0	45	0	0
Totara Miners' Association (Gagliardi and party)	12	10	0	6	5	0
Contingencies	484	15	10	242	7	11
Halligan and party, tunnel at Cedar Creek	198	1	10	99	0	11
Totara Miners' Association (Chamberlain and party)	208	10	0	104	5	0
Miners' Association, Greenstone	59	0	0	29	10	0
Westland County (T. Radonicki and party)	40	0	0	20	0	0
Waimea Miners' Association (Lot, Keir, and party)	90	0	0	45	0	0
Cardrona Prospecting Association	140	5	4	70	2	8
Waimea Miners' Association, Stafford	113	1	0	56	10	6

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
AIDS TO PROSPECTING—*continued.*	£	s.	d.	£	s.	d.
H. Crossan, Beaumont	28	0	0	14	0	0
Prospecting Association, Westport	39	0	0	19	10	0
Cape Colville Prospecting Syndicate	32	0	0	16	0	0
Port Charles Prospecting Association	28	0	0	14	0	0
Totara Miners' Association, Ross	24	0	0	12	0	0
Lake Mapourika Miners' Association	12	0	0	6	0	0
Lister and Robertson, Karamea	13	0	0	13	0	0
Canada Reefs Tunnel	187	10	0	93	15	0
Otago Miners' Association	600	0	0	291	8	2
Westland County (Goudie and party)	215	19	9	107	19	6
Paparata Road Board	26	0	0	13	0	0
Tauranga County (Te Puke Prospecting Association)	50	0	0	25	0	0
Havelock Miners' Association	78	0	0	39	0	0
Ohinemuri County	200	0	0	6	0	0
Mr. Olderog, Arahura	54	18	0	16	4	0
Miners' Association, Ross (J. Smith and party)	135	0	0	61	7	6
Extension of low-level tunnel, Boatman's	300	0	0	137	7	11
Prospecting-tunnel, south side Inangahua River	60	0	0	25	0	0
Prospecting Association, Mokihinui	40	0	0	15	0	0
Miners' Association, Kumara (John Kane)	9	0	0	1	2	6
Prospecting Association, Invercargill	150	0	0	68	13	6
Miners' Association, Kuaotunu	40	0	0	13	2	6
Miners' Association, Ross (Waylen and party)	50	0	0	16	13	0
Prospecting Association, Coromandel (Leahy and others)	200	0	0	100	0	0
Adit-level, Maungatawhiri Creek (G. B. Osmond)	120	0	0	68	17	0
Bay of Islands County Prospecting, Pokaka	112	13	0	112	13	0
Prospecting Russell's Outcrop	100	0	0	100	0	0
Fox's River Prospecting Association (A. T. Bate, secretary)	19	10	0	19	10	0
Buller County (Newton and party, shaft, Ballarat Terrace)	22	15	0	22	15	0
Buller County (Spence and party)	19	10	0	19	10	0
Wairau Miners' Association	50	0	0	48	4	0
Miners' Association, Nelson Creek (Thrower and Potts)	45	0	0	45	0	0
Miners' Association, Dillmanstown (Turnbull and others)	7	10	0	7	10	0
Miners' Association, Ross (Gagliardi and party)	64	18	0	64	18	0
Miners' Association, Ross (Allen and Son)	40	0	0	20	0	0
Miners' Association, Greenstone (Black and party)	27	0	0	27	0	0
Miners' Association, Cardrona	40	0	0	40	0	0
Miners' Association, Lowburn (E. Murrell)	20	0	0	13	5	0
Puhipuhi Prospecting Association	200	0	0	13	15	0
Thames County (F. and J. Wallis)	97	10	0	35	19	2
Thames County (Sheridan Company's tunnel, Tapu)	180	10	0	30	5	0
Cinnabar Mining Company, Auckland (£1 to £1 10s.)	162	16	9	108	11	2
H. H. Adam's, Waiorongomai	250	0	0	48	3	9
Miners' Association, Ross (Moye and Son)	15	10	0	6	10	6
Westland County (J. Staines)	96	0	0	4	10	0
Westland County (O'Brien and Glynn)	40	0	0	36	10	6
Upper Moutere Road Board	40	0	0	1	16	0
Buller County (Mohan and party)	220	0	0	71	8	6
Buller County (Gardiner and McKay)	56	0	0	24	0	0
Buller County (Negri and others)	43	0	0	29	1	3
Buller County (Scarlett and McHarrie)	39	0	0	18	0	0
Kumara Miners' Association (Scatterini and Anderson)	124	0	0	6	13	6
Kumara Miners' Association (Henley and party)	58	14	0	2	8	0
Kumara Miners' Association (M. Manton)	57	10	0	3	18	9
Kumara Miners' Association (Rogers and Block)	75	0	0	35	6	6
Frying-pan Tail-race	600	0	0	161	11	3
Prospecting Association, Mokihinui (French and others)	58	10	0	11	5	0
Prospecting Association, Westport	432	6	0	197	9	8
Dyer and party, Kuaotunu	120	0	0	37	16	0
Gillam's Gully Prospecting Association (Bramhall and party)	60	0	0	12	3	0
Miners' Association, Riverton	100	0	0	32	0	0
Kennedy-Waikaia Miners' Association, Invercargill	100	0	0	9	0	0
Inangahua District Miners' Association	100	0	0	25	17	6
New El Dorado Sluicing Company, Fat Boys, Criffel	300	0	0	94	4	9
Miners' Association, Greenstone (O'Donnell and party, and J. Pope)	75	0	0	30	4	3
Miners' Association, Tinkers, prospecting Matakanui	6	0	0	3	0	0
Chatterbox Tunnel (G. Clapton)	6	0	0	2	17	9
Port Charles Prospecting Association	20	0	0	11	8	0
Miners' Association, Lake Mapourika	17	4	0	7	13	3
Pitchers and Kitto, Anderson's Flat	100	0	0	20	5	11
Miners' Association, Nelson Creek (Kelly and party)	23	5	0	9	18	0
South British Prospecting Association, Lyell	135	0	0	6	15	0
Miners' Association, Ross (A. Zala)	69	0	0	69	0	0
Miners' Association, Ross (McKay and Muir)	39	0	0	39	0	0
Miners' Association, Ross (McKay and Brown)	13	0	0	13	0	0
Miners' Association, Ross (McEwen and McEchnie)	26	0	0	26	0	0
Miners' Association, Ross (C. Porter)	226	0	0	128	0	0
Miners' Association, Riverton	18	0	0	18	0	0
Katikati Prospecting Association	52	0	0	26	0	0
Cornwall, Walker, and party's tunnel, Boatman's	302	10	0	154	14	0
Miners' Association, Greenstone (Crawford and party)	109	7	6	109	7	6
Mararoa Mining Association	18	0	0	18	0	0
Hororata Prospecting Association	30	15	0	30	15	0

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
AIDS TO PROSPECTING—*continued.*	£	s.	d.	£	s.	d.
Paparata Road Board (Parker and Piggott)	32	10	0	32	10	0
New Bay of Islands Coal Company, prospecting Moody's outcrop	200	0	0	173	4	3
Longwood Sluicing Company	300	0	0	150	0	0
Red Jack's Miners' Association (Drummond and McDonough)	28	0	0	28	0	0
Kapanga Gold-mining Company (Limited)	20,600	0	0	1,735	3	11
Kuaotunu Prospecting Association	48	10	0	26	0	0
Te Aroha Town Board	100	0	0	37	17	6
Bombay Prospecting Association	40	0	0	16	7	9
Charleston Miners' Association	110	0	0	33	8	6
Buller County (Reaney and Rasmussen)	120	0	0	30	0	0
Buller County (Samuel and party)	100	0	0	5	11	0
Gold-mining League, Westport (McFarlane and others)	39	0	0	13	10	0
Inangahua County (Gabriel and party)	100	0	0	11	11	0
Miners' Association, Dillmanstown (Black and party)	31	10	0	12	0	0
Tapanui Prospecting Association	40	0	0	18	10	0
Miners' Association, Lowburn (Tilliman and party)	57	10	0	42	9	9
Miners' Association, Upper Waikaia	19	10	0	13	0	0
Main and party's tunnel, Kanieri	200	0	0	188	7	0
Ryan and Son's tunnel, Dillmanstown	42	0	0	21	12	0
R. A. Harcourt's tunnel, Blue Spur	180	0	0	90	0	0
Miners' Association, Ross (Archer and Horseby)	13	0	0	13	0	0
Inangahua County (R. Lees)	2	10	0	2	10	0
Westland County (Rebay and party)	112	0	0	56	0	0
Red Jack's Miners' Association (Drummond and Raynor)	24	0	0	12	0	0
Westland County (McGoveran and party)	50	0	0	37	10	0
Westland County (N. Johnson's tunnel, Fox's Flat)	140	0	0	59	0	5
Miners' Association, Ross (Gagliardi and Son)	70	0	0	17	10	0
Miners' Association, Ross (Marchesi and Scott)	200	0	0	153	15	0
Miners' Association, Greenstone (Dickson and party)	72	0	0	15	18	0
Westland County (Beroz and Mills)	115	0	0	91	9	0
Westland County (Patrick and Moynihan)	86	0	0	45	0	0
Westland County (Ryan and Son)	120	0	0	60	0	0
Westland County, prospecting, Kanieri (£1 for £1)	1,228	15	0	614	7	6
Westland County, prospecting, Rimu (£1 for £1)	3,908	2	0	1,854	1	0
Westland County (Dwyer and party, Blue Spur)	800	0	0	758	6	0
Miners' Association, Waiho (Batson and Snow)	9	0	0	9	0	0
Miners' Association, Nelson Creek (Coll and Moran)	160	0	0	160	0	0
Miners' Association, Nelson Creek (Hurley and party)	164	0	0	82	0	0
Miners' Association, Blackball (Keenan and Falconer)	5	17	0	5	17	0
Miners' Association, Blackball (McKenzie and O'Brien)	43	10	0	43	10	0
Miners' Association, Ross (McLeod and Dunlop)	63	14	6	40	8	6
Miners' Association, Ross (Smith and Regan)	164	2	0	164	2	0
Miners' Association, Greenstone (Candy, Roberts, and Evans)	100	0	0	60	8	6
Buller County (Jeffreys and Walker)	8	0	0	8	0	0
Buller County (Christmas and party)	4	15	0	4	15	0
Buller County (Burkitt and party)	13	0	0	13	0	0
Buller County (Stewart and party)	12	0	0	12	0	0
Buller County (Robertson and Sangwell)	26	0	0	26	0	0
Buller County (Ramsey and O'Connor)	4	15	0	4	15	0
Buller County (Clough and McGonagle)	8	0	0	8	0	0
Buller County (Negri and others)	12	0	0	12	0	0
Buller County (Quinn and party)	34	0	0	18	0	0
Buller County (Murray and Forsyth)	9	0	0	9	0	0
Buller County (Salter and party)	6	10	0	6	10	0
Inangahua County (Z. E. Curnow)	6	10	0	4	15	0
Culley and Hislop, prospecting, Kawakawa	50	0	0	50	0	0
Prospecting Association (Riverton)	25	0	0	25	0	0
Tuapeka County (Gabriel's Gully)	400	0	0	223	10	10
Coromandel County	400	0	0	368	0	0
Nobel, Stenhouse, and Crawford's tunnel, New Chum Creek	240	0	0	240	0	0
Holmes and party's tunnel, Tucker's Flat	400	0	0	208	8	0
Deep Levels, Kumara	3,269	0	0	1,197	10	4
	75,933	9	2	28,321	8	1
WATER-RACES.						
Water-main, Bull's Battery	350	0	0	100	0	0
Round Hill Water-race	200	19	0	133	19	4
Tomkiss's Water-race	100	0	0	100	0	0
Cardrona Sludge-channel	100	0	0	50	0	0
New water-mains, Thames Water-race	1,479	10	4	739	15	2
Nelson Creek	957	16	9	957	16	9
Mikonui Water-race	14,279	16	4	14,279	16	4
Brown and party, Kumara	90	0	0	22	10	0
Randall Creek Water-race	222	2	3	222	2	3
Thames Water-race	1,250	0	0	1,250	0	0
Contingencies	659	12	8	659	12	8
Randall Creek Water-race	100	15	0	100	15	0
Quinn's Creek Water-race	70	0	0	70	0	0
Survey, water-race, Ninety-mile Beach	65	6	7	65	6	7
Improving water-supply, Oamaru	1,250	0	0	1,150	7	2
Roaring Meg Water-race (Jones, Baxter, and party)	1,600	0	0	800	0	0
Sulky Gully Water-race	504	0	0	218	0	0
Gentle Annie Creek, Mata (R. Kelly)	200	0	0	40	0	0
Purchase Byrne, O'Hallahan, and Murdoch's water rights	35	0	0	35	0	0
Argyle Water-race	8,453	15	1	8,453	15	1
Bell Hill Sluicing Company	1,000	0	0	500	0	0
Finlay and McLiver's Water-race, at Measletown	400	0	0	34	5	4
	33,368	14	0	29,983	1	8

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
	£	s.	d.	£	s.	d.
DRAINAGE- AND TAILINGS-CHANNELS.						
Drainage-channel, Lawrence (total cost, approximate)	3,000	0	0	2,000	0	0
Subsidy towards purchase of Messrs. Laidlaw and Crawford's freehold in Spotti's Creek, to allow tailings to be deposited (Tinker's Diggings)	500	0	0	400	0	0
Damage by floods, Thames	1,000	0	0	500	0	0
Sludge-channel, Smith's Gully, Bannockburn	1,000	0	0	251	1	0
Round Hill Sludge-channel survey	52	19	7	52	19	7
Compensation to J. Costello, damage done by tailings	788	0	0	788	0	0
Long Gully Sludge-channel	150	0	0	100	0	0
New Pipeclay Gully Sludge-channel	4,547	18	0	773	19	0
Kumara Sludge-channel No. 2	2,762	17	2	2,762	17	2
Ophir Tail-race	2,300	0	0	1,150	0	0
Lawrence Drainage-channel	1,150	0	0	1,076	14	0
Tailings-outlet, Maerewhenua	1,595	4	0	1,595	4	0
Ross Sludge and Storm-water Channel	1,675	10	6	1,675	10	6
Kuaotunu Sludge-channel (£1 for £1)	400	0	0	200	0	0
Branch tail-race to No. 4 Channel	100	0	0	100	0	0
Rimu Drainage-channel	500	0	0	191	19	6
Kumara Sludge-channel No. 5	5,006	15	9	5,006	15	9
Kumara Sludge-channel No. 4	1,200	0	0	1,151	10	8
Kumara Sludge-chanel No. 3	58	0	0	58	0	0
Donnelly's Creek Tail-race	1,657	0	0	444	4	5
Muddy Creek Channel	2,000	0	0	1,000	0	0
	31,444	5	0	21,278	15	7
AID TOWARDS THE TREATMENT OF ORES.						
Testing-plant, School of Mines, Thames	1,200	0	0	600	0	0
Testing minerals, Dunedin Exhibition	142	8	9	142	8	9
Testing-battery, Mercury Bay	915	1	4	915	1	4
Public crushing-plant, Coromandel School of Mines	778	1	0	778	1	0
	3,035	11	1	2,435	11	1
AID TOWARDS CONSTRUCTION OF TELEPHONE-LINES.						
Bannockburn to Nevis	60	0	0	50	0	0
WORKS WHOLLY CONSTRUCTED BY MINES DEPARTMENT.						
Construction of road, Arrowtown to Macetown	9,270	6	8	9,270	6	8
Road to open up Woodstock Goldfield	1,000	0	0	1,000	0	0
Ahaura to Amuri	2,504	19	7	2,504	19	7
Waikaia Bush Road	1,000	0	0	1,000	0	0
Waitahuna Bridge	750	0	0	750	0	0
Merrivale tracks	500	0	0	500	0	0
Mokihinui to Specimen Creek	1,238	7	5	1,238	7	5
Wilberforce Quartz-reef Road	1,830	17	7	1,830	17	7
Opening Mokau River	552	8	0	552	8	0
Lyell to Mokihinui	5,098	8	6	5,098	8	6
Brighton to Seventeen-mile Beach	1,789	7	2	1,789	7	2
Wangapeka to Karamea	2,000	0	0	2,000	0	0
Hatter's Terrace to Bell Hill	500	0	0	500	0	0
Cedar Creek Road	3,000	0	0	3,000	0	0
Owen Valley Road	2,208	9	2	2,208	9	2
Cobden to Seventeen-mile Beach	3,036	1	4	3,036	1	4
Cedar Creek Road	1,500	0	0	1,500	0	0
Bridle-track to Upper Anatoki	722	8	0	722	8	0
Whangamata Road	141	10	6	141	10	6
Karangahake through Gorge	1,000	0	0	1,000	0	0
Arthur's Point to Skipper's	12,167	4	1	12,167	4	1
Tracks to Coal Island	54	6	3	54	6	3
Grey Valley to Teremakau	900	0	0	900	0	0
Rimu to New Rush	829	17	9	829	17	9
Tapu to Waikawau	750	10	0	750	10	0
Puhipuhi Road	1,396	17	9	1,396	17	9
Jackson's Bay to Cascade and Gorge River district	5,310	10	11	5,310	10	11
Improving roads and tracks, Collingwood to Takaka and Motueka	10,905	8	11	10,905	8	11
Tramway from New Find to Waitekauri	100	0	0	100	0	0
Havelock–Mahakipawa Dray-road	1,311	9	0	1,311	9	0
Mokihinui to Wanganui	200	0	0	200	0	0
Burnett's Face to Coalbrookdale	200	0	0	200	0	0
Deadman's to Christmas Terrace	20	0	0	20	0	0
Low-level Alpine Claim, Lyell	80	0	0	80	0	0
Bowen Road to Salt-water Beach	60	0	0	60	0	0
Repairing damage done by floods, Westland County	100	0	0	100	0	0
Deviation of road at Kanieri Forks	140	0	0	140	0	0
Road up Dart River	200	0	0	200	0	0
Kuaotunu to Mercury Bay	350	0	0	350	0	0
Thames to Manaia	500	0	0	500	0	0
Cobden to Seventeen-mile Beach	400	0	0	400	0	0
Bridge over Mahinapua Creek	503	16	10	503	16	10
Track up Waiho River	105	0	0	105	0	0
Haast Ferry to Glue-pot	126	0	0	126	0	0
Paeroa–Waihi Road	114	0	0	114	0	0
Waitekauri to New Find	250	0	0	250	0	0
Mahakipawa to Waikakaho	183	12	1	183	12	1

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
WORKS WHOLLY CONSTRUCTED BY MINES DEPARTMENT—*continued.*	£	s.	d.	£	s.	d.
Oparara through gorge to gold-workings	150	0	0	150	0	0
Okira Bridge, at Dirty Mary's Creek	100	0	0	100	0	0
Lagoon Bridge	100	0	0	100	0	0
Widening Cape Terrace Road	100	0	0	100	0	0
Deviation, Granville Road	70	0	0	70	0	0
Tucker's Flat Road	247	18	7	247	18	7
Dillman's-Larrikin's Road	125	15	0	125	15	0
Track at Kanieri Lake and McIntosh Falls, Lake Mahinapua	195	4	6	195	4	6
Extension of road, Rimu to Shallow Rush	150	0	0	150	0	0
Gillam's Gully Track	149	16	0	149	16	0
McKay's Creek, Kokatahi Track	100	0	0	100	0	0
Aorere Valley to Karamea and Mokihinui	29,938	1	2	29,938	1	2
Arrowtown to Macetown	450	0	0	450	0	0
Nelson Creek Bridge	100	0	0	100	0	0
Cascade to Barn Bay Road	411	7	0	411	7	0
Repairs to decking, Tapu Wharf	100	0	0	100	0	0
Waitekauri Battery from Junction-Waihi Road	150	0	0	150	0	0
Deep Creek, Wakamarina, to Empire City Company's claim	50	0	0	50	0	0
Track to diggings at Cape Foulwind	497	11	0	497	11	0
Bridge over Fox's River at Brighton	100	0	0	100	0	0
Totara Bridge	255	0	0	255	0	0
Road from Mokihinui Bridge to gold-workings	75	0	0	75	0	0
Clearing two miles of old track from right-hand branch of Kanieri River to Gentle Annie Terrace	13	0	0	13	0	0
Extending horse-track to Blackball Creek	500	0	0	500	0	0
Matawai to Kaimarama	150	0	0	150	0	0
Tiki to Mahakirau	250	0	0	250	0	0
Karangahake Gorge to Waihi	350	0	0	350	0	0
Upper Tararu Road	471	10	3	471	10	3
Red Hill Road	249	8	1	249	8	1
Repairs, Nile Bridge	1,131	2	6	1,131	2	6
Miller's Flat to Skipper's	580	0	0	580	0	0
Cobden to Coal Creek	375	0	0	375	0	0
Track to New Find, Tairua	47	11	6	47	11	6
Cedar Creek Dray-road	466	11	2	466	11	2
Road to Matarangi Goldfield	75	0	0	75	0	0
Repairs, Manaia Track	90	0	0	90	0	0
Upper Township School Bridge	50	0	0	50	0	0
Tiki Bridge across Waiau	256	0	0	256	0	0
Scott's Bridge	175	0	0	175	0	0
Oteau Bridge	150	0	0	150	0	0
Mercury Bay-Kaimarama Road	50	0	0	50	0	0
Stoney Creek Track	15	0	0	15	0	0
Road to mines, Waiomo	50	0	0	50	0	0
Upper Hill Track to branch track, Waiorongomai	30	0	0	30	0	0
Canadian Gully Bridge, and repairs to tunnel on horse-grade, Waiorongomai	70	0	0	70	0	0
Waiorongomai Road	100	0	0	100	0	0
Track from Slate River to Rocky	225	0	0	225	0	0
Pack-track to Killdevil	100	0	0	100	0	0
Repairs, Wangapeka Road towards Crow Diggings	153	0	7	153	0	7
Repairing flood-damages, Grey County	370	0	0	370	0	0
Taipo Track to Seven-mile	194	5	8	194	5	8
Repairs, Totara Bridge	336	0	0	336	0	0
Repairs, Kanieri Lake Road	80	0	0	80	0	0
Mercury Bay to Whenuakite and Boat Harbour	150	0	0	150	0	0
Tiki to Gumtown, *viâ* Kaimarama	160	0	0	160	0	0
Driving Creek to Cabbage Bay, and Driving Creek to Cape Colville	660	0	0	660	0	0
Tiki to Waikawau	600	0	0	600	0	0
Paeroa to Te Aroha	365	0	0	365	0	0
Puriri to east side of range	596	19	6	596	19	6
Onamalutu to Wakamarina Forks	400	0	0	400	0	0
Waimangaroa to Denniston	100	0	0	100	0	0
Road to Lyell's Creek Extended Company's tunnel	200	0	0	200	0	0
Jackson's Bay to Cascade	1,110	8	1	1,110	8	1
Bridge over Ogilvie's Creek	150	0	0	150	0	0
Gillam's Gully Track	220	0	0	220	0	0
Bridge over Kanieri River at Kokatahi	467	10	10	467	10	10
Road to Oparara Diggings	100	0	0	100	0	0
Millerton Road	249	0	3	249	0	3
Waiau to Preservation Inlet	7,961	19	6	7,961	19	6
Hatter's Terrace to Haupiri	1,650	0	0	1,650	0	0
Grey River to Moonlight	530	0	0	530	0	0
Blackball Track	1,185	12	5	1,185	12	5
Ahaura-Kopara Road	400	0	0	400	0	0
Mackley's to Waipuna Terrace	100	0	0	100	0	0
Footbridge over Blackball Creek	150	0	0	150	0	0
Waipapa to Waikawa	200	0	0	200	0	0
Waipapa to Six-mile	100	0	0	100	0	0
Drain at Adamson's	50	0	0	50	0	0
Maruia Track, between Reefton and Maruia	50	0	0	50	0	0
Sledge-track to Langdon Reefs	30	0	0	30	0	0
Track to Blackball Township, repairs	40	0	0	40	0	0
Track, Old Man Range	50	0	0	50	0	0
Road to gold discovery near Blue Spur	45	0	0	45	0	0
Bartlett's Creek Track	200	0	0	200	0	0

List of Works on Goldfields, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
Works wholly constructed by Mines Department—*continued.*	£	s.	d.	£	s.	d.
Prospecting-track, Brunnerton to Paparoa	125	0	0	125	0	0
Extension Seddon's Terrace Track to new claim	208	10	6	208	10	6
West Tokatea Road	50	0	0	50	0	0
Waitaia Battery Road	150	0	0	150	0	0
Preece's Point Road	150	0	0	150	0	0
Tokatea–Kennedy Bay Road	100	0	0	100	0	0
Main Cabbage Bay Road	50	0	0	50	0	0
Hooker's to Mercury Bay	100	0	0	100	0	0
Opeto Road	100	0	0	100	0	0
Blagrove's Road	400	0	0	400	0	0
Cemetery–Cabbage Bay Road	100	0	0	100	0	0
Rails for Coromandel Wharf	31	5	0	31	5	0
Culverts, Tiki Road	100	0	0	100	0	0
Soldier's Creek Road	198	5	0	198	5	0
Road to Barrytown	300	0	0	300	0	0
Tracks to western sounds	7,307	17	11	7,307	17	11
Road to R. Kelly's claim, Gentle Annie Creek	100	0	0	100	0	0
Waitekauri to New Find	250	0	0	250	0	0
Paeroa Mill Road	50	0	0	50	0	0
Owharoa to Waitawheta	50	0	0	50	0	0
Deviation Road, Earl's Hill	200	0	0	200	0	0
Waihi to Katikati	75	0	0	75	0	0
Bridge over Slate River	50	0	0	50	0	0
Pack-track to Glover's Flat, Lower Anatoki	50	0	0	50	0	0
Clearing Karaka Creek of flood-damage	50	0	0	50	0	0
Track up right-hand branch of Cullen's Creek	25	0	0	25	0	0
Footbridge, Waimangaroa River	50	0	0	50	0	0
Track up Callary Branch, Waiho River	70	0	0	70	0	0
Converting Wilson's Lead Track, Addison's, into a dray-road	400	0	0	400	0	0
Cabbage Bay to mines	400	0	0	400	0	0
Coromandel to Kuaotunu	2,070	0	0	2,070	0	0
Manaia to mines	100	0	0	100	0	0
Whitianga to Mahakirau	300	0	0	300	0	0
Whangapoua Mill Road	100	0	0	100	0	0
Kuaotunu Bridge	200	0	0	200	0	0
Granity Creek to Ngakawau	100	0	0	100	0	0
Crow Diggings Track	527	8	2	527	8	2
Road to diggings, Cape Foulwind	100	0	0	100	0	0
Ngahere to Blackball	600	0	0	600	0	0
Fencing land, Blackball Road	110	0	0	110	0	0
Prospecting-track, Greek's Gully to Kanieri Forks	150	0	0	150	0	0
Repairing Jones's Creek and Donohue's Storm-channels	100	0	0	100	0	0
Deviation, Pleasant Creek Track	130	0	0	130	0	0
Road-works at Ohaeawai	500	0	0	500	0	0
Mahakirau Creek Road	200	0	0	200	0	0
Puriri to mines	100	0	0	100	0	0
Katikati–Waihi Road	150	0	0	150	0	0
Pack-track from Kerikeri	50	0	0	50	0	0
Track to Waitakohe Goldfield	50	0	0	50	0	0
Repairing bridges to mines, Te Puke	250	0	0	250	0	0
Helena Bay to Whakapara Railway-station	100	0	0	100	0	0
Gordon Settlement to Waharoa	600	0	0	600	0	0
Waiorongomai Road	300	0	0	300	0	0
Approach to railway-bridge, Te Aroha	150	0	0	150	0	0
Upper Waitekauri Bridge	250	0	0	250	0	0
Junction Waihi Road to New Find, Waitekauri	328	8	0	328	8	0
Repairing bridges, Doctor's and Staunton's Creeks	200	0	0	200	0	0
Four-mile Bridge	100	0	0	100	0	0
Fox's Bridge	100	0	0	100	0	0
Charleston–Nine-mile Beach	200	0	0	200	0	0
Road, Promised Land–Karamea	550	0	0	550	0	0
Karamea Bridge and approaches	3,565	19	8	3,565	19	8
Approaches, Matakitaki Bridge	279	15	0	279	15	0
Snowy Creek Bridge	300	0	0	300	0	0
Big River Road	4,571	0	0	4,571	0	0
Footbridge across by-wash, Ngahere–Blackball Ferry	210	0	0	210	0	0
Track to Healey's Gully	90	0	0	90	0	0
Track, Lancashire Flat to head of Clearwater Creek	50	0	0	50	0	0
Granville Road	100	0	0	100	0	0
Footbridges, Blackwater and Greenstone	300	0	0	300	0	0
Brown's Terrace to Arnold	200	0	0	200	0	0
Protective works, main Grey Bridge	191	0	0	191	0	0
Extension, Tucker's Flat Road	103	2	6	103	2	6
Butcher's Creek Bridge, Kanieri Lake Road	129	17	6	129	17	6
Kapitea Creek Bridge, Lamplough Track	118	0	0	118	0	0
Widening Milltown Track to Humphrey's Gully	600	0	0	600	0	0
Pack-track, Seddon's Terrace to Eel Creek	246	17	6	246	17	6
New bridge, Kapitea Creek, Loop-line Road	30	8	7	30	8	7
Stribbing's Creek Bridge	70	8	11	70	8	11
Widening Seddon's Terrace Road extension	199	0	0	199	0	0
Compensation, Larrikin's Road	56	0	0	56	0	0
Garston to Nevis	1,965	17	2	1,965	17	2
Nevis Valley Road	400	0	0	400	0	0
Okarito River Bridge	300	0	0	300	0	0

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.	Amount of Contribution paid by Mines Department.
WORKS WHOLLY CONSTRUCTED BY MINES DEPARTMENT—*continued.*	£ s. d.	£ s. d.
Drainage, Stafford Township	399 17 5	399 17 5
Wangapeka Track, Rolling River-Kiwi Creek	149 19 10	149 19 10
Tracks, Stewart Island	718 7 8	718 7 8
Widening Lake Mapourika-Waiho Road	782 6 8	782 6 8
Roads, Great Barrier	604 4 2	604 4 2
Riversdale-Waikaia	200 0 0	200 0 0
Prospecting-track, Lyell-Larry's	100 0 0	100 0 0
Track to New Find, Victoria Range	500 0 0	500 0 0
Extending road into bush, Addison's	100 0 0	100 0 0
Clearing rocks and easing curves, Nine- and Ten-mile Bluffs	129 6 11	129 6 11
Repairs flood-damages, South Westland	100 0 0	100 0 0
Hungerford's Bridge	444 11 5	444 11 5
Waitangi Bluff Track	99 18 9	99 18 9
Track from Cedar Creek Road to Ford and Thompson's claim	20 0 0	20 0 0
Repairs Mount Greenland Track	50 0 0	50 0 0
Ross Road, towards Ranges	199 12 6	199 12 6
Repairs pack-track, Cedar Creek	100 0 0	100 0 0
Kinsella's land, taken for Blackball Road	5 11 0	5 11 0
Maratoto to mines	149 5 6	149 5 6
Hatter's Terrace-Haupiri	200 0 0	200 0 0
Upper Waiotahi Road	492 10 0	492 10 0
Inland from Omahu	400 0 0	400 0 0
Gannon's to Painkiller	196 10 6	196 10 6
Netherton Road	28 14 6	28 14 6
Repairs, Tapu Creek Road	66 0 0	66 0 0
Repairs, Karaka Creek Road	40 0 0	40 0 0
Gravelling road through Mr. Adams's property	100 0 0	100 0 0
Gravelling Onamalutu Track	100 0 0	100 0 0
Road to Fenian Creek, Karamea	250 0 0	250 0 0
Westport and Mokihinui Railway-line to Jones's Creek	100 0 0	100 0 0
Footbridge, Notown Creek	50 0 0	50 0 0
Wood's Creek Bridge	80 0 0	80 0 0
Maori Creek Bridge	50 0 0	50 0 0
Main South Road to Mikonui Beach	15 15 0	15 15 0
River-protection works, Te Aroha	200 0 0	200 0 0
Drains, Maratoto	100 0 0	100 0 0
Repairs, Mata Bridge	300 0 0	300 0 0
Roads, Tauranga County	1,226 17 5	1,226 17 5
Re-metalling Wakamarina Road	500 0 0	500 0 0
Pakawau Bush Road	425 0 0	425 0 0
Scott's Creek Bridge	170 0 0	170 0 0
Richmond-Collingwood	250 0 0	250 0 0
Deadman's Creek-Christmas Terrace	250 0 0	250 0 0
Denniston-Cascade Creek	100 0 0	100 0 0
Big Totara River Bridge	450 0 0	450 0 0
Little Totara River Bridge	350 0 0	350 0 0
Twins Road	100 0 0	100 0 0
Track up Four-mile and Nile Rivers	250 0 0	250 0 0
Culverts, Devil's Creek	100 0 0	100 0 0
Moonlight-Paparoa	100 0 0	100 0 0
Footbridges, Cobden-Seven-mile Road	342 10 0	342 10 0
Grey River-Moonlight	500 0 0	500 0 0
Bridge, Brandy Jack's Creek	150 0 0	150 0 0
Track up Ten-mile Creek	100 0 0	100 0 0
Road, Cobden to Warren's and Ten-mile Bluff to Barrytown	500 0 0	500 0 0
Cape Terrace Road continuation	150 0 0	150 0 0
Lake Brunner Road to Maori Creek	150 0 0	150 0 0
Hampden to Horse Terrace	3,450 18 6	3,450 18 6
Track to Adamstown	375 4 0	375 4 0
Brunnerton-Paparoa	50 0 0	50 0 0
Waikupakupa Ocean Beach to Main Road	100 8 0	100 8 0
Totara River to Farmer's Creek	194 13 0	194 13 0
Doughboy Road	300 0 0	300 0 0
Widening and repairing Lamplough Track	145 15 0	145 15 0
Extension, Gillam's Gully Track	100 0 0	100 0 0
Adair's Track, Mahinapua Road	150 0 0	150 0 0
Mahinapua and South Terrace Track	250 0 0	250 0 0
Veronica Creek Track	200 0 0	200 0 0
Waipori-Berwick Road	1,976 18 9	1,976 18 9
Roxburgh-Clyde	500 0 0	500 0 0
Orepuki-Block I., Longwood	500 0 0	500 0 0
Tableland horse-track	199 9 3	199 9 3
Landing Creek Bridge	289 16 6	289 16 6
Walker's Creek Bridge	214 12 2	214 12 2
Greenstone-Teremakau	240 0 3	240 0 3
Bell Hill Road	199 9 4	199 9 4
Bridge over Kanieri River	94 5 0	94 5 0
Main South Road to Mikonui Beach	84 15 0	84 15 0
Deviation, Larrikins Road	1,375 4 2	1,375 4 2
Pine-tree Road	45 10 7	45 10 7
Wire Bridge, German Gully Track	89 19 6	89 19 6
Road-formation, Waitekauri to Cross Road	271 11 11	271 11 11
Bridge, Mariposa Battery Road	24 0 0	24 0 0
Crosbie Settlement Road	50 0 0	50 0 0

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
WORKS WHOLLY CONSTRUCTED BY MINES DEPARTMENT—*continued.*	£	s.	d.	£	s.	d.
Waitaia Battery-site to Low Level	50	0	0	50	0	0
Repairs, Tauranga-Te Puke	25	2	6	25	2	6
Rockville-Slate River	51	0	0	51	0	0
Aorere Main Road, gravelling	60	0	0	60	0	0
Ferntown footbridges and gravelling	48	0	0	48	0	0
Swamp Road, Ferntown	30	0	0	30	0	0
Clearing slips, Seventeen-mile Bluff	150	0	0	150	0	0
Clearing slips, Nelson-Grey-Ross Road	115	0	0	115	0	0
Bridges over Raleigh Creek (3)	324	10	0	324	10	0
Hampden Cemetery to School-house, Murchison	345	1	6	345	1	6
Squaretown Bridge over Little Grey River	75	0	0	75	0	0
Berwick-Waipori, repairs	75	0	0	75	0	0
Beaumont-Miller's Flat	250	0	0	250	0	0
Track to Police Station, Seddonville	37	19	2	37	19	2
Improving track, Sealer's Creek	49	12	8	49	12	8
Kiripaka to Coal-mines	80	0	0	80	0	0
Waiorongomai Road	150	0	0	150	0	0
Tiki-Opitonui	250	0	0	250	0	0
Taumatawahine Bridge	300	0	0	300	0	0
Cemetery Road, Kuaotunu	100	0	0	100	0	0
Tiki-Matawai	45	0	0	45	0	0
Puriri-Tairua	1,135	14	6	1,135	14	6
Beach Road, Thames	100	0	0	100	0	0
Puru Creek Road	400	0	0	400	0	0
Tararu Creek Bridge	100	0	0	100	0	0
Turua-Netherton	200	0	0	200	0	0
Te Aroha Bridge	250	0	0	250	0	0
Bartlett's Creek Road	449	4	7	449	4	7
Mount Patriarch Road	200	0	0	200	0	0
Takaka River Footbridge	250	0	0	250	0	0
Karamea Track	250	0	0	250	0	0
Bainham-Upper Aorere	200	0	0	200	0	0
Shaggery Road	100	0	0	100	0	0
Seddonville-Mokihinui Mine	150	0	0	150	0	0
Seddonville-Mokihinui	920	0	0	920	0	0
Mokihinui to Reefs, widening	500	0	0	500	0	0
Mokihinui to Wanganui, improving	600	0	0	600	0	0
Lyell-Victoria Range	450	0	0	450	0	0
Nile Saddle-Maori Creek	150	0	0	150	0	0
Seddonville-Cardiff	100	0	0	100	0	0
Painkiller-Murray Creek	844	7	6	844	7	6
Maruia Road and Track *viâ* Caslani's	188	0	0	188	0	0
Little Grey River Bridge	400	0	0	400	0	0
Improving crossings, Waitahu River and Road, up Kirwan's Creek	450	0	0	450	0	0
Fagan's Creek, Barrytown, to Paparoa	425	0	0	425	0	0
Nelson Creek Bridge	950	0	0	950	0	0
Callaghan's Creek Bridge	250	0	0	250	0	0
Mosquito-Maori Creek	100	0	0	100	0	0
Deviation, Westbrook-Teremakau	450	0	0	450	0	0
Bridge, Cobden-Brunner Road	125	10	0	125	10	0
Moonlight Track, deviation	140	0	0	140	0	0
Totara River to Constitution Hill	123	1	0	123	1	0
Teremakau-Paroa	250	0	0	250	0	0
Back Creek Road, deviation	200	0	0	200	0	0
Blue Spur Creek Bridge	29	8	0	29	8	0
Young Hill Creek Road	150	0	0	150	0	0
Repairs to road between Sections 17 and 45, Waikaka	100	0	0	100	0	0
Skippers-Bullendale	200	0	0	200	0	0
Wangapeka-Wanganui	2,324	17	2	2,324	17	2
Okuru River Ford Track	342	18	8	342	18	8
Gillespie's Bluff Track	151	14	1	151	14	1
Maori River Road	149	19	6	149	19	6
Clifden Bridge, Waiau	1,115	3	0	1,115	3	0
Whangamata Harbour to Wentworth	100	0	0	100	0	0
Waiorongomai-Gordon	150	0	0	150	0	0
Easing grade Kahika Hill	75	0	0	75	0	0
Bartlett's Creek-Cat Point	200	0	0	200	0	0
Bridges, Dead Horse and Walker's Creeks	25	0	0	25	0	0
Black Creek Bridge	75	0	0	75	0	0
Wharton's Dam to Deep Creek	25	0	0	25	0	0
Piano Flat Company's Track	50	0	0	50	0	0
Waikaia-Whitecomb (repairs)	50	0	0	50	0	0
Kuaotunu-Mercury Bay	1,022	11	6	1,022	11	6
Kikowhakarere-Cabbage Bay	498	2	0	498	2	0
Opitonui Road	581	0	0	581	0	0
Mangles Bridge	4,323	4	8	4,323	4	8
Karangarua Bridge	448	13	6	448	13	6
Repairs Donnelly's Creek Bridge	440	1	3	440	1	3
Waiau Bridge to Old Mill-site	150	0	0	150	0	0
Donnelly's Bridge	136	10	0	136	10	0
Sullivan's Creek Bridge	164	0	0	164	0	0
Rings Road Bridge	325	0	0	325	0	0
Puriri-Neavesville	299	10	0	299	10	0
Railway-stations Roads	500	0	0	500	0	0

LIST of WORKS on GOLDFIELDS, &c.—*continued.*

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
WORKS WHOLLY CONSTRUCTED BY MINES DEPARTMENT—*continued.*	£	s.	d.	£	s.	d.
Matatoke Outfall-drain	100	0	0	100	0	0
Komata Reefs–Paeroa	500	0	0	500	0	0
Grace Darling Road	392	0	0	392	0	0
Komata Creek Road	150	0	0	150	0	0
Waitekauri Creek Bridge	160	0	0	160	0	0
Papamoa–Te Puke	275	0	0	275	0	0
Tauranga–Te Puke	400	0	0	400	0	0
Slate River Road	100	0	0	100	0	0
Motupipi Bridge	100	0	0	100	0	0
Tracks, Wakamarina and Mahakipawa	46	16	6	46	16	6
Aorere Bridge	87	8	6	87	8	6
Granity Creek southwards	950	0	0	950	0	0
Promised Land–Ohinemuri Creek	400	0	0	400	0	0
Fairdown to Beach	100	0	0	100	0	0
Paparoa River Track	100	0	0	100	0	0
Neudorf–Ngatimoti	79	16	8	79	16	8
Capleston–Larry's	415	0	0	415	0	0
Blackball–Paparoa	1,686	10	0	1,686	10	0
Paroa–Teremakau	825	0	0	825	0	0
Coal Creek Bridge	538	0	0	538	0	0
Totara Flat Road	100	0	0	100	0	0
Dowling Creek Bridge	175	0	0	175	0	0
Granite Creek Bridge	100	0	0	100	0	0
Blackball Road (improvements)	100	0	0	100	0	0
Brunnerton–Blackball	200	0	0	200	0	0
Sunny Bight Track (widening)	200	0	0	200	0	0
Adair's Track (widening)	130	0	0	130	0	0
Callery Track and Wire Bridge	400	0	0	400	0	0
Mikonui River approaches	100	0	0	100	0	0
McKay's Creek Bridge	270	12	0	270	12	0
Haast–Blue River Road	100	0	0	100	0	0
Arawata Track	100	0	0	100	0	0
Turnbull and Okuru Rivers Track	100	0	0	100	0	0
Waitahuna–Bruce County boundary	300	0	0	300	0	0
Clyde–Ophir	200	0	0	200	0	0
Nokomai Road	250	0	0	250	0	0
Skipper's–Gallant Tip	100	0	0	100	0	0
Beale's Hill Road deviation	100	0	0	100	0	0
Arrow–Matatapu	95	15	0	95	15	0
Gore–Waikaka	400	0	0	400	0	0
Riversdale–Waikaia	200	0	0	200	0	0
Charlton Road	200	0	0	200	0	0
Orepuki–Shale-works	200	0	0	200	0	0
Havelock–Mahakipawa	191	5	1	191	5	1
Dee Creek Bridge	538	3	10	538	3	10
Belgrove–Westport–Reefton	8,891	18	1	8,891	18	1
Hokitika–Jackson's	2,032	16	1	2,032	16	1
Cook's River Flat (widening)	396	13	6	396	13	6
Galway–Bluff Track	147	15	10	147	15	10
Kokotahi Road	451	2	5	451	2	5
Donoghue's deviation	229	18	6	229	18	6
Orepuki–Preservation Inlet	3,388	9	4	3,388	9	4
Mason's Bay Track	150	9	6	150	9	6
Great South Road	16,559	12	11	16,559	12	11
Granity Creek Bridge	431	12	0	431	12	0
Mount Hercules deviation (Great South Road)	1,119	4	6	1,119	4	6
Contingencies	923	4	4	923	4	4
	270,643	7	6	270,643	7	6
ROADS TO OPEN UP MINES OTHER THAN GOLD.						
Aniseed Valley to Champion Copper-mine	4,963	10	6	4,116	10	6
Richmond Hill to copper-mine	315	16	0	209	4	0
Track, Ohinemuri Coal-seam	267	3	4	133	11	8
Road, Kanieri Coalfield	600	0	0	300	0	0
	6,146	9	10	4,759	6	2
TRACKS TO OPEN UP MINERAL LANDS.						
Glory Harbour to Kopack	50	0	0	50	0	0
Port Pegasus Track	155	7	6	155	7	6
Removing snags and felling timber, Mokau River	40	0	0	40	0	0
Ngakawau Footbridge	80	0	7	80	0	7
	325	8	1	325	8	1
REPAIRING FLOOD-DAMAGES.						
Thames Borough	500	0	0	500	0	0
ARTESIAN-WELL BORING.						
Maniototo Plains	800	0	0	800	0	0

LIST of WORKS on GOLDFIELDS, &c.—*continued*.

Locality and Nature of Works.	Total Cost.			Amount of Contribution paid by Mines Department.		
PROSPECTING DEEP LEVELS.	£	s.	d.	£	s.	d.
Thames-Hauraki Goldfields (Limited), Queen of Beauty shaft	50,500	0	0	25,000	0	0
Thames-Hauraki Goldfields (Limited), Queen of Beauty shaft, inspector's fee ..	500	0	0	500	0	0
	51,000	0	0	25,500	0	0
RESUMPTION OF LAND FOR MINING.						
Resumption of J. Holmes's land at Kumara for a tailings-site	300	0	0	300	0	0
Resumption of O'Neil and McCormack's land at Back Creek..	562	7	0	562	7	0
Purchase Cassrell and Bennett's leaseholds, Paeroa Township	2,250	0	0	2,250	0	0
	3,112	7	0	3,112	7	0

Summary of Works.

	£	s.	d.	£	s.	d.
Roads (subsidised)—						
Bay of Islands County	2,092	0	0	1,351	0	0
Coromandel County	18,886	3	9	11,320	15	10
Te Aroha Town Board	334	0	0	167	0	0
Thames County	13,254	15	11	7,585	19	5
Thames Borough	3,141	19	2	2,022	12	6
Ohinemuri County	9,457	17	9	4,495	14	1
Piako County	21,998	2	3	14,406	6	10
Katikati Road Board	507	19	6	253	18	9
Hutt County	959	16	6	435	17	6
Marlborough County	1,715	4	0	933	18	8
Waimea County	1,459	8	8	729	14	4
Collingwood County	2,431	1	8	1,294	9	10
Buller County	10,788	1	4	5,975	16	8
Inangahua County	17,552	14	8	10,530	17	10
Grey County	19,419	4	0	11,981	13	2
Westland County	10,558	15	6	6,596	6	1
Taieri County	499	15	0	333	3	4
Lake County	2,901	6	1	1,682	14	6
Tuapeka County	14,695	7	8	8,653	7	2
Cromwell Borough	500	0	0	250	0	0
Wallace County	1,309	6	0	662	19	8
Vincent County	1,532	0	0	850	0	0
Maniototo County	518	10	0	332	0	0
Fiord County	300	0	0	200	0	0
Waitaki County	41	12	0	20	16	0
Southland County	2,355	0	0	1,426	7	4
	159,210	1	5	94,493	9	0
Diamond and other drills	5,170	11	4	3,428	11	4
Wharves	435	15	9	285	15	9
Aids to prospecting	75,933	9	2	28,321	8	1
Water-races	33,368	14	0	29,983	1	8
Drainage- and tailings-channels	31,444	5	0	21,278	15	7
Aid towards treatment of ores	3,035	11	1	2,435	11	1
Roads wholly constructed by Mines Department	270,643	7	6	270,643	7	6
Roads to open up mines other than gold	6,146	9	10	4,759	6	2
Tracks to open up mineral lands	325	8	1	325	8	1
Repairing flood-damages	500	0	0	500	0	0
Artesian-well boring, Maniototo Plains	800	0	0	800	0	0
Resumption of land for mining	3,112	7	0	3,112	7	0
Aid towards construction of telephone-lines	60	0	0	50	0	0
Prospecting deep levels	51,000	0	0	25,500	0	0
	641,186	0	2	485,916	11	3

RETURN showing the VALUE of the SALES of WATER, and EXPENDITURE on, and COLLATERAL ADVANTAGES derived from, the Working of the WATER-RACES constructed and maintained by GOVERNMENT during the Year ending 31st March, 1901.

Name of Water-race.	Value of Sales of Water and Channel-fees.	Expenditure on Maintenance.	Profit or Loss.	Cost of Construction.	Total Cost of Construction.	Percentage on Capital invested.	Average Number of Men employed.	Approximate Amount of Gold obtained.	Value of Gold obtained.	Average Weekly Earnings of Men after deducting Value of Sales of Water and Channel-fees.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.			Oz.	£ s. d.	£ s. d.
Waimea	560 0 5	794 6 3	234 5 10*	144,825 10 1		..	30·58	1,717	6,696 6 0	3 17 2
Kumara	2,181 11 0	2,077 16 10	103 14 2	49,741 12 5	216,532 0 8	..	66·25	3,877	15,120 6 0	3 13 8
Kumara Sludge-channel	..	..	..	21,964 18 2		..	..	..	..	..
Nelson Creek	..	..	..	..	90,722 10 8	..	..	..	..	..
Argyle	..	..	..	..	15,151 15 3	..	..	..	..	..
Mikonui	..	..	..	..	25,927 4 6	..	..	..	..	..
Mount Ida	1,553 2 9	1,246 12 0	306 10 9	70,418 9 10	70,918 4 10	..	48·54	2,491	9,590 7 0	3 3 6
Blackstone Hill	91 15 0	14 0 0	77 15 0			..	4·27	120	462 0 0	1 12 9
Callaghan's	181 15 0	153 15 0	28 0 0	6,027 15 6	6,027 15 6	..	7·62	475	1,852 10 0	4 4 0
Totals	4,568 4 2	4,286 10 1	281 14 1	292,978 6 0	425,279 11 5	..	..	8,680	33,721 9 0	..

* Loss on working

WARDEN'S COURT TABLES.

No. 1.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several DISTRICTS of the COLONY of NEW ZEALAND, for the Period from the 1st January to the 31st December, 1900.

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 ..	125 10 0	..	0 10 0	471 8 10	12 4 0	20 15 0	218 0 9	848 8 7
Te Aroha ..	36 10 0	792 4 6	8 0 0	94 16 11	6 2 6	4 14 0	24 15 0	967 2 11
Thames ..	434 10 0	177 17 11	3 5 10	1,233 7 8	26 5 0	49 0 0	81 7 2	2,005 13 7
Ohinemuri ..	350 10 0	463 9 5	2 1 0	1,971 16 5	56 9 0	..	891 14 0	3,735 19 10
Puhipuhi ..	7 0 0	2 0 0	..	..	0 7 0	..	124 3 6	133 10 6
Tauranga ..	4 0 0	..	..	..	..	..	..	4 0 0
Totals ..	958 0 0	1435 11 10	13 16 10	3,771 9 10	101 7 6	74 9 0	1,340 0 5	7,694 15 5
NELSON.								
Collingwood ..	48 0 0	2 0 0	0 2 6	216 17 3	5 15 0	21 6 0	148 8 6	442 9 3
Westport ..	164 0 0	3 18 0	9 18 0	1,232 0 1	6 8 0	57 2 6	381 13 4	1,854 19 11
Charleston ..	76 0 0	..	0 7 6	118 5 7	2 4 0	9 8 0	10 19 6	217 4 7
Ahaura ..	225 0 0	..	16 5 0	1,102 15 1	47 18 0	119 4 6	1,184 17 11	2,696 0 6
Reefton ..	171 10 0	..	1 12 6	801 9 0	0 17 0	48 1 0	466 13 0	1,490 2 6
Wangapeka ..	17 10 0	..	..	8 4 0	0 2 0	..	1 15 0	27 11 0
Lyell	54 10 0	7 14 0	0 7 6	364 4 6	0 10 0	4 17 0	160 11 0	592 14 0
Motueka ..	8 10 0	..	..	..	1 12 0	..	48 17 0	58 19 0
Totals ..	765 0 0	13 12 0	28 13 0	3,843 15 6	65 6 0	259 19 0	2,403 15 3	7,380 0 9
MARLBOROUGH.								
Havelock ..	47 10 0	1 10 0	3 15 0	319 12 6	5 12 0	6 0 0	10 6 0	394 5 6
WESTLAND.								
Hokitika and Kanieri	158 0 0	1 0 0	8 5 0	974 5 4	21 0 0	46 10 0	6 9 0	1,215 9 4
Greymouth ..	300 0 0	..	2 17 6	2,303 4 1	0 1 0	57 3 0	2,347 18 7	5,011 4 2
Ross	51 0 0	..	1 5 0	740 6 8	9 6 0	..	1 15 0	803 12 8
Stafford ..	110 0 0	..	5 10 0	575 10 5	11 16 0	22 18 0	0 5 0	725 19 5
Kumara ..	206 0 0	..	0 5 0	478 1 0	15 8 6	39 1 0	311 19 2	1,050 14 8
Okarito ..	31 10 0	..	0 10 0	471 4 9	5 14 0	..	60 2 6	569 1 3
Totals ..	856 10 0	1 0 0	18 12 6	5,542 12 3	63 5 6	165 12 0	2,728 9 3	9,376 1 6
Ashburton ..	13 0 0	..	..	109 12 0	0 7 0	0 18 0	..	123 17 0
OTAGO.								
Tapanui ..	8 10 0	..	..	24 17 11	..	1 10 0	..	34 17 11
Hindon ..	139 0 0	..	..	70 13 9	..	6 18 0	7 17 0	224 8 9
Naseby ..	112 10 0	49 15 2	29 0 0	653 10 11	24 11 0	40 17 0	118 8 3	1,028 12 4
Roxburgh Alexandra Clyde .. Black's	225 10 0	9 0 0	7 7 6	2,076 19 11	34 1 0	101 14 6	467 13 0	2,922 5 11
Pembroke ..	11 0 0	..	0 5 0	3 15 0	0 8 0	..	..	15 8 0
Cromwell ..	180 0 0	4 0 0	0 1 0	1,359 5 2	32 8 0	57 12 0	91 15 0	1,725 1 2
Queenstown ..	133 10 0	..	3 17 6	434 16 8	13 19 0	33 5 0	451 11 3	1,070 19 5
Arrowtown ..	58 0 0	..	2 15 6	279 0 4	10 10 0	26 3 0	10 2 0	386 10 10
Lawrence ..	177 10 0	0 1 0	..	864 11 5	..	25 14 0	105 11 0	1,173 7 5
Waikaia ..	..	..	0 2 6	312 5 7	7 16 0	19 9 0	111 3 3	450 16 4
Orepuki ..	..	1 15 0	3 10 0	5 18 4	2 12 0	19 11 0	3 10 0	36 16 4
Riverton and Longwood	72 10 0	22 15 5	2 2 6	659 15 8	10 7 0	24 0 0	79 0 0	870 10 7
Maerewhenua ..	..	..	..	..	..	..	..	..
Wyndham ..	17 10 0	..	..	80 17 5	1 13 0	3 14 0	28 12 0	132 6 5
Nenthorn ..	..	..	..	..	..	..	..	..
Middlemarch ..	0 10 0	..	..	48 10 4	0 13 0	..	0 10 0	50 3 4
Gore	7 0 0	0 5 0	..	234 6 3	4 6 0	19 5 0	32 17 0	297 19 3
Totals ..	1,143 0 0	87 11 7	49 1 6	7,109 4 8	143 4 0	379 12 6	1,508 9 9	10,420 4 0
Grand totals ..	3,783 0 0	1,539 5 5	113 18 10	20,696 6 9	379 2 0	886 10 6	7,991 0 8	35,389 4 2

No. 2.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several DISTRICTS, of the COLONY of NEW ZEALAND, for the Period from 1st January to 31st March, 1901.

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 ..	31 10 0	..	0 10 0	170 12 7	2 5 0	4 11 0	16 19 0	226 7 7
Te Aroha ..	8 0 0	127 17 11	6 15 0	22 19 3	2 6 0	6 10 0	1 15 0	176 3 2
Ohinemuri ..	66 0 0	91 7 2	..	994 13 4	8 0 0	..	133 9 2	1,293 9 8
Thames ..	113 10 0	23 11 1	0 10 0	327 5 8	5 4 0	5 4 0	73 10 9	548 15 6
Puhipuhi ..	3 0 0	2 0 0	..	..	0 1 0	..	40 16 9	45 17 9
Tauranga ..	1 10 0	..	..	25 0 0	0 5 0	..	0 10 0	27 5 0
Totals ..	223 10 0	244 16 2	7 15 0	1,540 10 10	18 1 0	16 5 0	267 0 8	2,317 18 8
NELSON.								
Motueka ..	2 10 0	..	..	1 10 4	0 1 0	..	0 3 6	4 4 10
Collingwood ..	9 10 0	..	..	78 15 7	1 3 0	3 2 0	23 1 0	115 11 7
Westport ..	33 0 0	..	1 15 0	468 13 9	0 9 0	9 7 0	99 18 1	613 2 10
Charleston ..	22 0 0	..	..	32 2 0	0 17 0	1 16 0	4 2 0	60 17 0
Ahaura	55 10 0	..	5 17 6	528 15 8	11 6 0	14 5 0	123 15 0	739 9 2
Reefton	30 10 0	..	0 5 0	522 19 5	0 10 0	8 12 0	117 6 8	680 3 1
Wangapeka ..	1 10 0	..	..	..	..	..	..	1 10 0
Lyell	6 10 0	0 2 0	..	193 15 0	0 1 0	1 12 0	32 6 0	234 6 0
Totals ..	161 0 0	0 2 0	7 17 6	1,826 11 9	14 7 0	38 14 0	400 12 3	2,449 4 6
MARLBOROUGH.								
Havelock Picton	5 10 0	1 10 0	0 10 0	143 16 3	1 3 0	1 15 0	4 1 3	158 5 6
WESTLAND.								
Hokitika and Kanieri	29 0 0	2 10 0	2 0 0	318 19 6	3 4 0	5 4 0	3 10 0	364 7 6
Greymouth ..	63 10 0	..	..	742 3 9	..	12 0 0	223 6 7	1,041 0 4
Ross	6 10 0	..	..	124 0 4	1 15 0	..	2 5 0	134 10 4
Stafford	20 0 0	..	..	125 9 10	2 17 0	6 1 0	0 1 0	154 8 10
Okarito	7 0 0	..	0 5 0	25 0 10	0 10 0	..	0 15 0	33 10 10
Kumara ..	65 0 0	..	..	152 17 11	5 16 0	13 6 0	163 4 4	400 4 3
Totals ..	191 0 0	2 10 0	2 5 0	1,488 12 2	14 2 0	36 11 0	393 1 11	2,128 2 1
CANTERBURY.								
Ashburton ..	1 0 0	..	..	..	..	..	..	1 0 0
OTAGO.								
Middlemarch ..	1 0 0	..	..	..	..	..	..	1 0 0
Tapanui ..	..	..	..	10 16 3	..	0 2 0	..	10 18 3
Hindon	20 10 0	..	0 10 0	30 18 11	0 4 0	0 7 0	0 10 0	52 19 11
Naseby	34 0 0	1 5 0	4 10 0	134 7 1	5 4 0	9 5 0	5 1 9	193 12 10
Black's .. Alexandra Clyde .. Roxburgh	34 10 0	7 10 0	1 2 6	822 13 1	7 16 0	12 11 0	76 16 6	962 19 1
Cromwell ..	38 10 0	0 1 0	0 7 6	390 16 9	8 14 0	12 4 0	55 3 0	505 16 3
Queenstown ..	22 10 0	..	..	293 7 7	6 5 0	23 7 0	37 15 0	383 4 7
Arrowtown ..	10 10 0	..	0 5 0	56 11 0	1 13 0	1 7 0	1 13 0	71 19 0
Lawrence ..	39 0 0	..	..	446 5 3	0 1 0	9 1 0	15 9 0	509 16 3
Orepuki ..	0 5 0	..	0 10 0	1 16 6	1 5 0	4 13 0	0 10 0	8 19 6
Riverton and Longwood	9 0 0	..	..	208 15 0	2 16 0	3 3 0	31 7 8	255 1 8
Pembroke ..	1 10 0	..	0 5 0	..	0 1 0	..	..	1 16 0
Maerewhenua ..	..	..	..	..	..	..	..	..
Waikaia ..	..	..	..	70 4 0	0 13 0	2 9 0	19 14 0	93 0 0
Wyndham ..	1 0 0	..	..	42 5 0	0 4 0	0 4 0	4 6 0	47 19 0
Nenthorn ..	..	..	..	..	..	..	..	..
Gore	0 10 0	..	..	146 1 8	0 7 0	1 2 0	0 5 0	148 5 8
Totals ..	212 15 0	8 16 0	7 10 0	2,654 18 1	35 3 0	79 15 0	248 10 11	3,247 8 0
Grand totals ..	794 15 0	257 14 2	25 17 6	7,654 9 1	82 16 0	173 0 0	1,313 7 0	10,301 18 9

No. 3.

COMPARATIVE RETURN of REVENUE derived from the GOLDFIELDS in the several DISTRICTS of NEW ZEALAND during the Years 1899 and 1900, 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 1900	958	1,436	14	3,772	101	74	1,340	16,905	24,600
Year 1899	1,120	540	22	5,770	82	44	2,094	16,465	26,137
Increase	..	896	..	..	19	30	..	440	..
Decrease	162	..	8	1,998	..	..	754	..	1,537
NELSON—									
Year 1900	765	14	28	3,844	65	260	2,404	..	7,380
Year 1899	863	20	27	3,762	89	178	1,438	..	6,377
Increase	..	..	1	82	..	82	966	..	1,003
Decrease	98	6	..	..	24	..	..	..	..
MARLBOROUGH—									
Year 1900	47	1	4	320	6	6	10	..	394
Year 1899	61	3	4	312	11	28	49	..	468
Increase	..	..	..	8	..	..	..	..	..
Decrease	14	2	..	..	5	22	39	..	74
CANTERBURY—									
Year 1900	13	..	..	110	..	1	..	..	124
Year 1899	..	..	..	..	..	..	..	..	..
Increase	13	..	..	110	..	1	..	..	124
Decrease	..	..	..	..	..	..	..	..	..
WESTLAND—									
Year 1900	856	1	19	5,543	63	166	2,728	..	9,376
Year 1899	938	2	35	2,372	40	104	1,610	..	5,101
Increase	..	..	..	3,171	23	62	1,118	..	4,275
Decrease	82	1	16	..	..	..	..	..	..
OTAGO—									
Year 1900	1,143	88	49	7,109	143	380	1,508	..	10,420
Year 1899	1,592	50	82	7,043	152	475	1,889	..	11,283
Increase	..	38	..	66	..	..	..	..	..
Decrease	449	..	33	..	9	95	381	..	863
Total Increase	..	925	..	1,439	4	58	910	440	2,928
Total Decrease	292	..	56	..	..	..	..	..	..

No. 4.

COMPARATIVE RETURN of the TOTAL AMOUNTS of GOLDFIELDS REVENUE (exclusive of Gold Duty) collected in the several Districts during the Years 1899 and 1900 and the Quarters ending 31st March, 1900 and 1901 respectively, showing the INCREASE or DECREASE in respect of each District.

District.	Years 1899 and 1900.				Quarters ending 31st March, 1900, and 31st March, 1901.			
	1899.	1900.	Increase.	Decrease.	1901.	1900.	Increase.	Decrease.
AUCKLAND.	£	£	£	£	£	£	£	£
Coromandel	1,157	848	..	309	226	332	..	106
Te Aroha	730	967	237	..	176	155	21	..
Thames	2,275	2,006	..	269	549	527	22	..
Puhipuhi	136	134	..	2	46	63	..	17
Ohinemuri	5,369	3,736	..	1,633	1,293	1,049	244	..
Tauranga	5	4	..	1	27	1	26	..
NELSON.								
Motueka	21	59	38	..	4	44	..	40
Collingwood	617	442	..	175	116	109	7	..
Westport	1,265	1,855	590	..	613	359	254	..
Charleston	220	217	..	3	61	67	..	6
Ahaura	1,840	2,696	856	..	739	601	138	..
Reefton	1,972	1,490	..	482	680	292	388	..
Wangapeka	56	28	..	28	2	4	..	2
Lyell	385	593	208	..	234	131	103	..
MARLBOROUGH.								
Havelock ..	467	394	..	73	158	104	54	..
Picton ..								
WESTLAND.								
Hokitika ..	681	1,215	534	..	364	278	86	..
Kanieri ..								
Greymouth	3,040	5,011	1,971	..	1,041	1,146	..	105
Ross	239	804	565	..	135	238	..	103
Stafford and Goldsborough	257	726	469	..	154	216	..	62
Okarito	158	569	411	..	34	160	..	126
Kumara	728	1,051	323	..	400	187	213	..
CANTERBURY.								
Ashburton	5	124	119	..	1	..	1	..
OTAGO.								
Hindon	389	224	..	165	53	53	..	..
Naseby	1,360	1,029	..	331	194	263	..	69
Alexandra ..	3,070	2,922	..	148	963	980	..	17
Black's ..								
Clyde ..								
Roxburgh ..								
Cromwell	1,535	1,725	190	..	506	467	39	..
Arrowtown	575	387	..	188	72	120	..	48
Queenstown	863	1,071	208	..	383	456	..	73
Pembroke	22	15	..	7	2	4	..	2
Lawrence	1,485	1,173	..	312	510	367	143	..
Waikaia	615	451	..	164	93	157	..	64
Tapanui	22	35	13	..	11	7	4	..
Orepuki, Preservation, and Longwood	1,052	908	..	144	255	264	..	9
Maerewhenua	..	..	..	69	..	18	..	18
Wyndham	122	132	10	..	48	24	24	..
Middlemarch	24	50	26	..	1	26	..	25
Gore	75	298	223	..	148	84	64	..
Totals	32,901	35,389	6,991	4,503	10,292	9,353	1,831	892
Net decrease ..	..	..	..	..	..	..	..	..
Net increase ..	..	..	2,488	..	..	..	939	..

No. 5.

RETURN of GOLD DUTY credited to LOCAL BODIES for the Year ended 31st December, 1900, and Quarter ended 31st March, 1901.

Local Body.	For the Year ended 31st December, 1900.	For the Quarter ended 31st March, 1901.
COUNTIES—	£ s. d.	£ s. d.
Coromandel	1,592 2 11	78 1 11
Ohinemuri	13,132 3 10	2,896 14 9
Piako	97 11 8	10 16 6
Thames	1,337 14 2	325 6 9
BOROUGH—		
Thames	745 15 1	260 17 1
Totals	16,905 7 8	3,571 17 0

The Treasury, Wellington, 11th July, 1901.

ROBERT J. COLLINS,
Accountant to the Treasury.

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, 1900.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST DECEMBER, 1900.		ENTERED FOR EXPORTATION TO THE 30TH SEPTEMBER, 1900.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST DECEMBER, 1900.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	3,780	15,799				
" Ohinemuri ..		37,563	129,784				
" Coromandel		4,473	18,899				
" Piako ..		540	2,281				
Borough of Thames ..		2,083	8,737				
Great Barrier Island ..		54	191				
		48,493	175,691	2,566,971	9,641,624	2,615,464	9,817,315
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	11	45	86,909	338,517	86,920	338,562
County of Collingwood	Nelson	531	2,021	1,678,465	6,654,200	1,678,996	6,656,221
" Waimea ..		..	..				
County of Buller ..	West Coast	1,391	5,564				
" Inangahua ..		4,038	16,325				
" Grey ..		1,369	5,476				
" Westland ..		1,539	6,157				
Borough of Kumara ..		..	..				
" Hokitika ..		..	..				
" Ross ..		..	..				
		8,337	33,522	4,535,255	18,040,754	4,543,592	18,074,276
County of Ashburton ..	Canterbury ..	12	45	63	252	75	297
County of Taieri ..	Otago	132	536				
" Tuapeka ..		7,860	31,749				
" Vincent ..		15,471	62,448				
" Maniototo ..		675	2,734				
" Waihemo ..		426	1,729				
" Waitaki ..		271	1,104				
" Lake ..		1,229	4,994				
" Wallace ..		2,620	10,546				
" Waikouaiti ..		1	4				
" Bruce ..		798	3,196				
" Clutha ..		..	..				
" Fiord ..		120	482				
" Southland ..		2,000	8,112				
" Steward Island		..	..				
		31,603	127,634	5,651,856	22,390,265	5,683,459	22,517,899
	Unknown ..	..	..	207	824	207	824
Totals		88,987	338,958	14,519,914	57,067,142	14,608,901	57,406,100

No. 7.

COMPARATIVE RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND for the YEARS ended 31st DECEMBER, 1900 and 1899.

PRODUCE OF THE GOLDFIELDS IN THE DISTRICT OF	DURING THE QUARTER ENDED—				TOTALS FOR YEAR 1900.		TOTALS FOR YEAR 1899.	
	31st March, 1900.	30th June, 1900.	30th September, 1900.	31st December, 1900.	Quantity.	Value.	Quantity.	Value.
	Oz.	Oz.	Oz.	Oz.	Oz.	£	Oz.	£
Auckland ..	35,272	40,388	42,189	48,493	166,342	605,398	168,769	624,737
Marlborough ..	344	..	180	11	535	2,147	..	..
Nelson ..	2,170	321	696	531	3,718	14,605	419	1,571
West Coast ..	24,009	16,882	24,695	8,337	73,923	295,733	90,031	360,149
Canterbury ..	6	4	1	12	23	90	28	111
Otago ..	34,122	25,785	37,565	31,603	129,075	521,629	130,226	526,265
Unknown ..	..	..	..	..	..	..	85	340
Totals for 1900	95,923	83,380	105,326	88,987	373,616	1,439,602	..	..
Totals for 1899	92,818	100,313	93,395	103,032	..	..	389,558	1,513,173

* Gold duty abolished in the South Island on the 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

Department of Trade and Customs,
Wellington, 28th January, 1901.

W. T. GLASGOW,
Secretary and Inspector.

Table 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, 1901.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST MARCH, 1901.		ENTERED FOR EXPORTATION TO THE 31ST DECEMBER, 1900.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST MARCH, 1901.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
Great Barrier Island ..	Auckland	2,230	8,385				
County of Thames ..		2,201	9,135				
" Ohinemuri ..		28,713	102,440				
" Coromandel		781	3,274				
" Piako ..		108	457				
Borough of Thames ..		946	3,948				
		34,979	127,639	2,615,464	9,817,315	2,650,443	9,944,954
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	56	205	86,920	338,562	86,976	338,767
County of Collingwood	Nelson	3,483	12,962				
" Waimea ..		95	351				
		3,578	13,313	1,678,996	6,656,221	1,682,574	6,669,534
County of Buller ..	West Coast	3,107	12,454				
" Inangahua ..		17,603	70,748				
" Grey ..		8,382	33,657				
" Westland ..		5,955	23,657				
Borough of Hokitika ..		267	1,067				
" Ross ..		551	2,203				
		35,865	143,786	4,543,592	18,074,276	4,579,457	18,218,062
County of Ashburton ..	Canterbury ..	5	19	75	297	80	316
County of Taieri ..	Otago ..	435	1,765				
" Tuapeka ..		10,816	43,901				
" Vincent ..		13,208	53,202				
" Maniototo ..		5,212	21,389				
" Waihemo ..		750	2,978				
" Waitaki ..		871	3,571				
" Lake ..		1,852	7,495				
" Wallace ..		2,647	10,626				
" Bruce ..		492	1,972				
" Clutha ..		9	36				
" Fiord ..		343	1,375				
" Southland ..		4,165	16,828				
		40,800	165,138	5,683,459	22,517,899	5,724,259	22,683,037
Unknown	..	..	..	207	824	207	824
Totals	..	115,283	450,100	14,608,901	57,406,100	14,724,184	57,856,200

*Gold duty abolished in the South Island on 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

Table No. 9.

COMPARATIVE RETURN for the HALF-YEARS ended 31st MARCH, 1901, and 31st MARCH, 1900.

District of	Quarter ended 31st March, 1901.		Quarter ended 31st March, 1900.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Auckland	34,979	127,639	35,272	129,019
Marlborough	56	205	344	1,382
Nelson	3,578	13,313	2,170	8,680
West Coast	35,865	143,786	24,009	95,791
Canterbury	5	19	6	25
Otago	40,800	165,138	34,122	138,323
Totals	115,283	450,100	95,923	373,220

W. T. GLASGOW,
Secretary and Inspector.

Department of Trade and Customs,
Wellington, 9th May, 1901.

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 March, 1901.

Mining 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 16 0	0 5 6	£3 to £4	No public batteries; no water sold.
	South Hauraki	2 13 0	..	..	..
	Ohinemuri	4 4 0	0 6 0	..	No public batteries; no water sold.
	Te Aroha	£2 12s. 6d. to £2 16s. 8d.	..	..	..
	Puhipuhi	..	..	..	None sold on field.
	Tauranga	..	..	..	No mines crushing.
MARLBOROUGH—Pelorus and Wairau ..		3 17 0	..	..	No cement or quartz worked in district.
NELSON—	Wangapeka	£3 10s. to £3 16s.	..	..	..
	Motueka	3 13 0	..	..	..
	Charleston	3 19 0	0 1 6	£1 6s. 8d. to £2 5s.	40 in.
	Inangahua	£3 18s. to £4 4s.	..	..	..
	Collingwood	3 13 6	..	..	..
	Takaka	3 14 6	..	..	..
	Westport	3 18 9	..	..	..
	Murchison .. Lyell	3 18 0	0 10 0	..	.. ..
WESTLAND—	Hokitika, Kanieri, and Waimea ..	3 18 0	..	2 10 0	40 in.
	Totara and Ross	3 18 0	..	..	..
	Stafford	3 18 0	..	1 10 0	..
	Greymouth	3 18 0	0 12 0	0 10 0	..
	Kumara	3 18 0	..	1 10 0	20 in. by 2 in. opening.
	Ahaura	3 18 0	0 12 6	0 10 0	Sluice, 20in. by 2in.
	Okarito	3 18 0	..	..	..
OTAGO—	Hindon	3 17 6	..	..	..
	Tuapeka	3 17 6	..	3 0 0	..
	Longwood	3 10 6	..	..	..
	Preservation and Waiau ..	£3 16s. 6d. to £3 18s. 6d.	..	..	..
	Orepuki and Roundhill ..	3 18 6	..	..	..
	Arrow (Wakatipu Goldfield) and Queenstown	3 17 6	12s. 6d. to 15s.	..	..
	Mount Ida .. Macrae's, Hyde .. Hamilton, Serpentine	£3 17s. to £3 17s. 6d.	..	..	£1 10s. to 15/1/01, since then £1, Government race, 40 in. by 1 in.
	Maerewhenua	3 17 0	..	1 0 0	20 in. by 2 in., 4 in pressure.
	Cromwell	3 17 0	0 8 0	0 4 0	..
	Waikaia	£3 12s. 6d. to £3 17s.	..	1 15 0	..
	Tapanui	3 15 0	..	..	..
	Wyndham	£3 16s. to £3 18s.	..	..	..
	Roxburgh .. Clyde and Alexandra Black's	3 17 6	..	..	Water used by owners.
	Gore	4 0 0	..	..	..

No. 11.

RETURN showing the AVERAGE PRICES of PROVISIONS and LIVE-STOCK for the Year ending 31st March, 1901.

Mining 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.			
South Hauraki	90/	27/	1½	/9	/6	/6	1/10	10/6	4/	6	12/	9	15/	40/	5	4	6	3	3½	1	3	2/6	6/	15/–20/
Ohinemuri	96/	23/	1½	1/2	/10	/7	1/10	10/6	4/6	6	..	7	10/	20/	5	4	6	3	3½	1	3	1/10	8/	16/6
North Hauraki	90/	27/	1½	/10–1/	/6½	/6	1/10	10/6	4/3	6	12/	3–50	10/	16/	5	4½	6	4	3	1	3	1/6–2/3	6/6	16/6–20/
Tauranga	84/	27/	1½	1/	/8	/7	1/8	9/	2/6	4	..	6	13/	8/	4	4	6	3	3	1	3	2/	6/	25/
Te Aroha	144/	30/	1½	/10	/8	/6	2/	15/	3/6	6	20/	16	10/	20/	3	3	4	3	3	1½	3	2/	6/	9/
Puhipuhi	86/6	21/	3	/10	/7	/6	2/	10/	3/	4	7/6	10	10/	20/	4–6	3–5	6	3	3	1	2½	2/	5/6	20/
MARLBOROUGH—																								
Queen Charlotte Sound Pelorus .. Wairau ..	80/	23/	3½	1/	/10	/7	2/	12/	5/	6	18/	12	8/	30/	6	4	7	4	3	1½	3½	2/	6/	22/
NELSON—																								
Wangapeka	..	..	6	/9	/7	/8	2/	10/–14/	..	4–5	..	12–25	12/6-15/	20/–40/	3–4	2½–3	4	4	3	1½	3	2/6–3/	6/–7/	..
Collingwood	93/	25/	2	/8	/6	/8	1/10	8/	3/6	4	..	10–25	7/	15/	4	3	5	4	3½	1	3	2/4	6/	16/
Takaka	90/	26/	2	/7	/6	/7	1/9	8/	3/3	3–6	..	10–50	12/–15/	35/ cwt.	3	2½	4	3	3	1	3	1/–1/9	6/	7/
Inangahua	110/	26/	2¼	1/1	/10	/7	1/9	12/6	4/6	5	9/	10–25	9/	25/	4	4	4	4	3	1	3	2/	6/	17/
Lyell .. Murchison ..	105/	26/	2¼	1/1	/8	/8	2/	13/6	7/	6/5/0	..	..	11/	35/	5	5	6	6	4	1½	3½	2/	6/	20/
Westport	90/	27/	1½	1/2	1/	/6	2/	12/	6/	7	15/	20	16/	40/	6	5	6	5	3	1	3½	2/3	7/6	26/
Charleston	120/	26/	6	1/	/11	/7	2/	9/	4/	6	..	17/10/0	16/	30/	4½	4½	5	5	4	1	3	2/	5/9	16/
Ahaura	96/	25/	1½	1/3	1/	/9	1/6	15/	5/	5–7	20/–30/	7–25	10/–14/	30/–80/	4	4½	6	6	4	2	3½	2/	6/6	18/
WESTLAND—																								
Stafford .. Waimea ..	100/	30/	1½	1/	1/	/8	1/9	10/	5/	6	5/	17	12/	40/	4	4	6	4	3	1½	3	2/	6/	24/
Hokitika and Kanieri ..	80/	25/	1¾	1/	/10	/6	1/3	15/	4/	7–10	..	6–20	10/	60/–90/	5	5	6	4	2½	1	2¾	2/	5/6	16/
Ross	110/	24/6	1½	1/	1/	/8	1/6–2/	14/	6/	6–7	5/	10–20	12/–16/	40/–60/	7	6	8	4	4	2	3	2/–2/6	6/	20/–30/
Okarito	90/	39/	3	1/3	1/6	/9	2/3	18/	5/3	5–7	..	9–30	17/	..	6	5	8	..	4	2	3½	2/–3/	7/	19/–25/
Kumara	85/	23/6	2	1/3	1/	/8	1/6	15/	5/	5–10	10/	8–30	12/	40/–100/	5	5	7	6	3	2	4	2/–3/	6/–8	22/
Greymouth	90/	25/	1½	1/	/10	/6	1/9	8/6	3/	7	..	10–40	11/6	25/–65/	4–6	3–5	6	4	3	1¼	2½	2/	5/	16/6
OTAGO—																								
Hindon	..	..	1¼–1½	1/	/10	/7	1/9	10/	..	3–6	..	5–30	2/–12/	..	3	3	3	4	3½	1	3½	2/	6/	..
Tuapeka	90/	26/	1½	/10	/10	/6	1/10	8/	2/	5	..	10–30	14/	20/–40/	5	3	6	3	3	1	3½	2/	5/	18/
Tapanui	90/	24/	1¼	1/	/9	/6	2/	9/	3/	7	..	10–30	14/	10/–60/	6	4	6	3	4	1	3½	2/	6/	18/
Cromwell	100/	27/	2½	1/3	1/	/8	1/9	9/6	2/6	3/10/0	..	12	20/	50/	4½	5	6½	6	4	2	4½	2/3	5/6	18/
Clyde .. Alexandra .. Roxburgh .. Black's ..	120/	28/	1¾	1/	1/	/9	1/9	12/	5/	50/–120/	..	7–40	5/–20/	40/	5	4	7	5	2	1½	3	2/	5/–7/	22/
Queenstown	110/	28/	2	1/3	1/	/9	2/	11/	2/3	5–10	..	10–30	3/–15/	20/–80/	6	5	6	6	3	2	3–4	2/–3/	6/	16/–30/
Wyndham	100/	28/	1½	1/	/8	/6	1/9	8/6	2/6	5	10/	10–45	12/	50/	4–6	2½–3	5	4	3	1	3	1/8–2/6	5/	22/6
Arrow (Wakatipu Goldfield)	120/	30/	2	1/	1/	/9	2/	11/	2/3	5–10	..	10–30	3/–15/	20/–80/	6	5	6	6	3	2	3–4	2/–3/	6/	16/–30/
Mount Ida .. Nenthorn ..	100/–130/	30/–40/	1½–1¾	1/–1/3	/10-1/3	/6–/8	1/6-2/6	8/–10/	3/–3/6	6-6/10/0	10/	10–40	10/–14/	59/–60/	5–6	4–6	6	4	3	1½	2½–4	1/3–2/	5/–6/	21/–24/
Waikaia	90/	28/	1½	1/	/10	/7½	2/	12/	2/6	6	..	10–35	10/–16/	40/	6	4	6	4	4	2	4	3/	6/	20/
Orepuki and Longwood ..	90/	33/	2	/10	/10	/6	2/	9/	3/	6–9	20/	6–18	5/–12/	20/–40/	4	3	6	3	2½	1	3	1/6–2/6	5/6	27/
Maerewhenua	..	..	1¾	/9	/9	/8	2/	14/	3/9	2/10/0	..	15	6/–8/	30/	4	3	3½	3	3	1½	3	2/	6/	..
Gore	100/	28/	1¼	/8	/6	/6	1/10	8/	2/	6	..	25	12/	40/	3	3	3¾	3½	2	1	3½	2/4	5/6	18/

No. 12

TABLE showing the AVERAGE RATE of WAGES per WEEK for the Year ending 31st March, 1901.

Mining 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.	£ . d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
North Hauraki	£500 to £1000	£1 to £2	£3 to £5	£3 to £3 10	2 14 0	2 8 0	2 8 0	3 0 0	2 5 0	2 2 0	5/ to 30/	..	1 16 0	5/ to 10/
South Hauraki							2 10 0	2 16 0	2 8 0	2 2 0	1 0 0	..	1 16 0	7/ to 12/
Te Aroha	10 0 0	..	3 0 0	..	..	..	3 0 0	3 0 0	2 8 0	2 2 0	1 10 0	..	1 0 0	5/ to 12/6
Ohinemuri	£150 to £1200	£1 to £2	£4 to £8	£4 to £6	3 0 0	2 8 0	2 8 0	2 8 0	2 8 0	1 16 0	0 15 0	..	1 0 0	7/6 to 12/
Tauranga	..	..	..	..	..	..								
MARLBOROUGH—														
Wairau ..	..	2 0 0	3 10 0	2 14 0	2 8 0	..	2 14 0	2 14 0	2 8 0	2 2 0	..	..	1 16 0	10/
Pelorus ..														
NELSON—														
Collingwood	5 0 0	2 0 0	5 0 0	3 10 0	2 10 0	2 8 0	2 14 0	2 14 0	2 8 0	2 2 0	0 15 0	..	1 10 0	15/
Takaka	4 0 0	..	..	..	2 10 0	..	2 5 0	2 14 0	2 8 0	2 2 0	10/ and found	..	1 0 0	7/
Inangahua	..	£1 to £2	£4 to £10	4 0 0	4 0 0	3 0 0	£3 10 to £4	3 10 0	3 0 0	2 11 0	1 10 0	..	1 5 0	5/ to 15/
Charleston	..	..	5 0 0	5 0 0	3 12 0	3 0 0	3 10 0	3 10 0	3 0 0	2 8 0	15/ and found	..	£1 and found	10/ and found
Westport	..	0 10 0	4 0 0	..	3 0 0	2 8 0	3 0 0	3 12 0	2 14 0	2 8 0	1 0 0	..	..	15/ and found
Lyell	..	5 0 0	5 0 0	3 15 0	3 10 0	2 15 0	3 10 0	3 5 0	3 0 0	2 5 0	1 5 0	0 15 0	..	10/
Ahaura	£6 to £8	2 0 0	4 0 0	4 0 0	3 0 0	2 10 0	3 10 0	3 12 0	2 10 0	1 10 0	0 15 0	..	1 10 0	7/ to 15/
Murchison	..	..	..	3 15 0	3 10 0	2 15 0	3 5 0	3 0 0	2 15 0	2 5 0	1 0 0	0 15 0	..	10/
WESTLAND—														
Waimea and Stafford ..	6 0 0	..	5 0 0	3 10 0	3 0 0	2 10 0	3 0 0	3 0 0	2 10 0	2 0 0	0 10 0	2 0 0	..	12/
Hokitika and Kanieri ..	4 10 0	1 15 0	£4 to £5	4 0 0	3 10 0	2 10 0	3 0 0	3 12 0	3 0 0	2 10 0	1 0 0	£1 10 to £2	1 0 0	8/ to 15/
Ross	..	1 5 0	5 0 0	..	..	..	4 0 0	3 12 0	3 0 0	2 10 0	1 10 0	..	..	8/
Kumara	6 0 0	2 0 0	4 0 0	3 10 0	3 0 0	..	£3 to £3 10	£3 to £4	3 0 0	2 8 0	1 0 0	..	..	7/ to 15/
Greymouth	..	1 0 0	£4 to £6	£3 to £5	3 0 0	2 10 0	£3 to £3 10	10/ to 14/ a day	£2 10 to £3	7/ to 9/ a day	8/ to 15/	20/–30/ found	£1 to £2 found	5/ to 12/6
Okarito	..	..	..	4 10 0	..	..	3 12 0	3 12 0	..	2 14 0	..	..	25/ and found	12/
OTAGO—														
Hindon	..	1 8 10	6 0 0	3 0 0	2 14 0	1 16 0	..	..	2 8 0	£1 10 to £2	..	1 1 0	..	..
Tuapeka	4 0 0	2 0 0	3 10 0	£4 to £5	2 10 0	2 2 0	2 14 0	3 0 0	2 2 0	2 0 0	0 10 0	1 0 0	1 0 0	10/ to 12/
Tapanui	5 0 0	..	6 0 0	5 0 0	2 2 0	..	8 0	3 0 0	2 8 0	2 8 0	1 0 0	1 10 0	1 2 6	10/ to 15/
Cromwell	6 0 0	..	4 10 0	4 0 0	3 0 0	2 10 0	3 10 0	3 10 0	3 0 0	2 8 0	1 5 0	1 0 0	25/ and found	8/ to 15/
Clyde ..														
Alexandra ..	4 10 0	1 10 0	4 0 0	4 0 0	3 0 0	..	4 0 0	4 0 0	£2 8 to £3	2 8 0	0 16 0	1 5 0	£1 and found	7/6 to 15/
Black's ..														
Roxburgh ..														
Waikaia	..	1 0 0	4 0 0	..	3 0 0	..	3 0 0	3 0 0	2 8 0	2 2 0	10/ to 15/	£1 to £1 5	£1 to £1 5	10/ to 15/
Orepuki and Longwood	5 0 0	£40 per ann.	£2 10 to £5 10	3 10 0	2 10 0	2 5 0	2 10 0	3 0 0	2 2 0	1 16 0	0 15 0	1 10 0	2 5 0	10/ to 15/
Arrow	5 0 0	1 0 0	4 10 0	3 10 0	3 0 0	2 10 0	3 0 0	3 0 0	3 0 0	2 8 0	10/ to £1 10	£1 to £1 10	£1 to £1 5	8/ to 16/6
Queenstown	5 0 0	1 0 0	4 10 0	3 10 0	3 0 0	2 10 0	4 0 0	3 0 0	3 0 0	£1 1 to £2 8	10/ to £1 5	£1 to £1 5	£1 to £1 5	7/6 to 15/
Mount Ida	..	£25 per ann.	£3 10 to £5	4 0 0	..	2 14 0	£2 14 to £3	£2 14 to £3	2 10 0	2 2 0	10/ to 15/	£1 to £1 5	£1 and found	10/
Gore	4 0 0	..	2 0 0	2 8 0	3 0 0	2 8 0	2 14 0	2 14 0	£2 2 to £2 8	1 16 0	0 12 0	..	15/ to £1	6/ to 10/
Wyndham	..	..	..	..	2 10 0	2 10 0	2 0 0	3 0 0	8/ a day	7/ a day	0 15 0	..	1 15 0	8/ to 20/

No. 13.

NUMBER of MACHINES employed in ALLUVIAL and QUARTZ-MINING, and the VALUE thereof, for the Year ending 31st March, 1901.

Mining 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—																								
Ohinemuri ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	57	3,180	14	634	18	1	..	..	..	318,894
North Hauraki ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	..	15	190	..	..	..	..	..	30,000
South Hauraki ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27	1,750	..	514	15	..	1	..	..	195,300
Te Aroha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	9	10	3	..	..	..	..	5,000
Totals ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	104	4,990	38	1,348	36	1	1	..	..	549,184
MARLBOROUGH—																								
Wakamarina ..																								
Cullen's Creek ..	..	..	..	..	..	48	4	..	3	3	..	..	..	..	2	30	1	10	1	..	..	..	..	8,000
Waikakaho ..																								
Other places ..																								
Totals ..	..	..	..	..	..	48	4	..	3	3	..	..	..	..	2	30	1	10	1	..	..	..	..	8,000
NELSON—																								
Wangapeka ..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	35
Collingwood ..	..	..	..	..	..	50	..	8	..	..	..	..	..	..	1	2	2	23	..	..	..	..	..	58,050
Takaka	..	..	..	..	..	23	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	100
Inangahua ..	2	24	..	..	..	..	..	..	..	2	..	..	..	..	27	758	22	440	22	2	3	..	65	216,362
Charleston ..	..	..	..	..	..	95	6	71	..	..	..	..	24	..	..	..	..	..	..	..	..	..	..	800
Lyell	..	..	..	..	..	80	..	5	..	3	..	..	..	1	..	..	2	30	..	..	..	..	..	25,000
Murchison ..	..	..	..	..	..	540	1	6	1	2	..	..	..	1	..	..	..	..	..	..	..	..	..	18,000
Westport	..	..	..	..	..	50	4	25	..	..	..	..	22	..	..	..	4	35	4	..	..	..	..	12,000
Ahaura	..	..	..	..	..	100	..	100	..	3	3	1	..	4	1	18	4	22	..	..	1	..	..	40,000
Totals ..	2	24	..	..	..	938	11	218	1	10	3	1	46	6	29	778	34	550	26	2	4	..	65	370,347
WESTLAND—																								
Stafford	..	..	..	3	6	8,000	6	300	4	..	6	..	..	..	..	..	..	..	..	..	..	..	..	40,000
Ross	2	24	..	..	2	60	1	20	..	2	..	..	..	..	..	..	1	6	1	..	..	..	..	26,000
Hokitika and Kanieri	..	..	..	..	2	100	2	120	1	1	..	..	5	..	..	..	..	..	..	..	..	..	..	3,000
Greymouth ..	..	..	..	..	..	1,510	..	530	30	..	80	..	..	..	..	..	2	6	..	..	..	..	..	13,830
Kumara	2	30	..	..	..	150	2	90	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	17,000
Totals ..	4	54	..	3	10	9,820	11	1,060	35	5	86	..	5	..	..	..	3	12	1	..	..	..	..	99,830
OTAGO—																								
Tapanui	..	..	..	..	..	25	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1,630
Hindon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	16	5	31	..	..	..	..	..	2,475
Tuapeka	..	..	..	..	..	560	..	25	..	23	..	..	..	..	2	16	3	35	2	..	..	..	..	80,000
Cromwell	4	49	..	..	..	..	..	5	..	23	1	..	..	..	2	23	7	34	1	..	..	..	..	123,500
Clyde and Alexandra																								
Roxburgh ..	2	12	..	..	2	1,600	3	22	4	36	..	1	..	2	..	..	2	15	1	..	1	..	..	321,270
Black's																								
Orepuki, Waiau, and Preservation	8	110	..	..	..	275	..	8	..	..	..	..	..	..	3	32	4	20	2	..	..	..	..	12,300
Waikaia (Switzer's)	..	..	..	..	..	300	..	10	..	3	..	..	..	1	..	..	..	..	..	..	..	..	..	25,000
Arrow	1	6	..	..	..	250	..	50	5	10	..	..	..	..	1	4	4	40	3	..	..	..	..	25,000
Queenstown ..	..	..	..	..	..	400	..	50	2	2	..	..	..	..	1	8	5	75	..	..	..	..	..	45,000
Naseby																								
Kyeburn and Clarke's																								
Hamilton's and Sowburn																								
Hyde and Fullerton's																								
Macrae's, Strath-Taieri, and Shag Valley	..	..	25	..	109	3	38	2	2	..	..	..	..	..	2	22	7	45	6	1	1	..	..	30,000
Serpentine ..																								
St. Bathan's, Ida Valley, &c.																								
Gore	..	..	..	..	..	..	..	..	..	19	..	..	..	..	..	..	..	..	..	..	..	..	..	40,000
Wyndham ..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1,500
Totals ..	15	177	25	..	111	3,413	41	172	13	118	1	1	..	3	13	121	37	295	15	1	2	..	..	707,675

SUMMARY.

Auckland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	104	4,990	38	1,348	36	1	1	..	..	549,184
Marlborough ..	..	..	..	..	..	48	4	..	3	3	..	..	..	..	2	30	1	10	1	..	..	..	..	8,000
Nelson	2	24	..	..	..	938	11	218	1	10	3	1	46	6	29	778	34	550	26	2	4	..	65	370,347
Westland	4	54	..	3	10	9,820	11	1,060	35	5	86	..	5	..	..	..	3	12	1	..	..	..	..	99,830
Otago	15	177	25	..	111	3,413	41	172	13	118	1	1	..	3	13	121	37	295	15	1	2	..	..	707,675
Totals ..	21	255	25	3	121	14,219	67	1,450	52	136	90	2	51	9	148	5,919	113	2,215	79	4	7	..	65	1,735,036

No. 14.

TABLE showing approximately the NUMBER, DESCRIPTION, and VALUE of the WATER-RACES, TAIL-RACES, DAMS, RESERVOIRS, and GROUND-SLUICES in Operation during the Year ending 31st March, 1901.

Mining 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—				£		£		£		£		£	£
Hauraki North ..	6	5	40	4,000	..	..	..	..	..	..	..	..	4,000
Hauraki South ..	19	25	160	58,000	7	360	70	770	2	5,000	..	..	64,130
Te Aroha ..	1	..	10	3,500	..	..	..	..	..	..	..	..	3,500
Ohinemuri ..	14	8¾	99	14,550	1	1,000	7	3,000	..	..	..	..	18,550
Totals ..	40	38¾	309	80,050	8	1,360	77	3,770	2	5,000	..	..	90,180
MARLBOROUGH—													
North Bank of Wairau and Pelorus	50	44	150	5,530	12	350	6	145	4	100	..	..	6,125
											..	..	
Totals ..	50	44	150	5,530	12	350	6	145	4	100	..	..	6,125
NELSON—													
Wangapeka, Baton, and Sherry	4	9½	110	10,250	12	..	11	..	..	..	..	..	10,250
Collingwood ..	98	120¼	948	127,056	65	7,825	72	10,904	..	..	..	..	145,785
Inangahua ..	487	393	3,573	160,964	541	32,345	613	23,178	..	..	..	..	216,487
Charleston ..	108	130¼	484	32,074	132	10,507	330	9,007	..	..	86	380	51,968
Westport ..	233	157	1,178	21,798	187	26,537	398	16,085	..	..	..	..	64,420
Lyell	76	82	173	3,765	18	710	20	2,050	..	..	..	..	6,525
Murchison ..	170	133	702	8,520	60	1,975	48	3,120	..	..	..	..	13,615
Ahaura	781	93¼	3,173	191,851	818	86,070	725	20,391	..	..	..	..	298,312
Motueka ..	6	9¾	24	1,170	2	120	3	80	..	..	..	..	1,370
Takaka	6	2½	20	250	6	100	7	60	..	..	6	..	410
Totals ..	1,969	1,130½	10,385	557,698	1,841	166,189	2,227	84,875	..	..	92	380	809,142
WESTLAND—													
Hokitika & Kanieri	300	200	600	150,000	120	3,000	300	3,000	..	..	..	..	156,000
Ross	143	115	515	59,905	160	1,500	76	2,050	..	..	6	700	64,155
Kumara ..	186	105½	420	25,930	186	2,100	66	4,600	11	7,000	30	600	40,230
Greymouth ..	418	371	1,601	117,637	787	18,524	998	14,079	..	..	..	..	150,240
Okarito	7	9	31	2,817	..	..	..	..	..	..	..	..	2,817
Stafford.. ..	200	300	300	20,000	300	8,000	400	6,000	20	2,000	100	1,000	37,000
Totals ..	1,254	1,100½	3,467	376,289	1,553	33,124	1,840	29,729	31	9,000	136	2,300	450,442
OTAGO—													
Hindon	73	115	710	35,420	21	380	12	1,505	..	..	20	125	37,430
Tuapeka ..	325	910	1,835	17,700	435	9,500	313	7,200	..	..	..	..	34,400
Tapanui ..	5	8½	10	130	3	30	2	30	..	..	..	..	190
Clyde, Alexandra, Black's, and Roxburgh	623	1,590	2,690	101,000	382	20,500	162	19,000	2	6,000	..	..	146,500
Arrow	95	180	204	13,667	129	4,725	25	1,400	25	..	..	..	19,792
Cromwell ..	529	1,399	2,078	94,508	298	14,540	229	11,790	..	..	..	..	120,838
Waikaia ..	235	450	900	40,000	240	2,200	127	2,000	..	..	20	800	45,000
Orepuki, Longwood, and Preservation	107	165½	565	20,769	45	3,570	36	705	..	..	..	..	25,044
Queenstown ..	136	218	135	54,210	159	6,950	43	1,835	30	..	..	..	62,995
Naseby													
Kyeburn & Clarke's													
Hamilton's and Sowburn													
Hyde & Fullerton's													
Macrae's, Strath-Taieri, and Shag Valley	523	1,126½	2,263	35,814	623	16,434	286	13,552	..	..	..	..	65,800
Serpentine ..													
St. Bathan's and Ida Valley													
Wyndham ..	15	17	92	4,830	..	..	..	..	..	..	..	..	4,830
Gore	2	5	6	10	..	..	1	..	..	..	..	..	10
Totals ..	2,668	6,184½	11,488	418,058	2,335	78,829	1,236	59,017	57	6,000	40	925	562,829

SUMMARY.

Auckland	40	38¾	309	80,050	8	1,360	77	3,770	2	5,000	..	..	90,180
Marlborough ..	50	44	150	5,530	12	350	6	145	4	100	..	..	6,125
Nelson	1,969	1,130½	10,385	557,698	1,841	166,189	2,227	84,875	..	..	92	380	809,142
Westland	1,254	1,100½	3,467	376,289	1,553	33,124	1,840	29,729	31	9,000	136	2,300	450,442
Otago	2,668	6,184½	11,488	418,058	2,335	78,829	1,236	59,017	57	6,000	40	925	562,829
Totals	5,981	8,498¼	25,799	1,437,625	5,749	279,852	5,386	177,536	94	20,100	268	3,605	1,918,718

No. 15.

RETURN of CASES in the WARDENS' COURTS, and COSTS AWARDED, for the Year ending 31st March, 1901.

Mining 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.	
North Hauraki	40	74 11 0	65 0 0	51 18 6	..
South Hauraki	96	805 2 2	607 12 2	142 14 6	11
Te Aroha	3	1 1 0	1 1 0	7 12 8	..
Ohinemuri	62	473 18 1	380 14 1	18 15 0	..
MARLBOROUGH	24	167 1 4	72 1 4	7 9 0	..
NELSON—					
Collingwood	2	79 9 0	44 19 0	15 16 0	..
Inangahua	47	303 16 8	103 16 8	15 3 0	29
Lyell and Murchison	8	..	..	35 7 0	..
Westport	14	30 0 0	..	4 5 4	..
Charleston	3	..	..	8 16 0	..
Motueka	..	..	..	..	..
Takaka	1	17 0 0	..	3 16 0	..
WESTLAND—					
Kumara	6	..	..	2 16 0	..
Greymouth	20	300 0 0	258 10 0	22 14 0	..
Hokitika and Kanieri	5	6 0 0	6 0 0	2 3 1	1
Stafford	5	8 0 0	8 0 0	5 18 0	..
Ross	..	..	..	..	..
Ahaura	43	255 12 4	167 1 8	87 17 3	..
OTAGO—					
Tapanui	1	44 0 0	41 4 3	9 14 0	..
Hindon	6	250 0 0	7 0 0	3 3 0	1
Tuapeka	10	1,128 11 10	126 14 0	73 8 8	..
Cromwell	70	183 7 6	91 11 2	29 3 9	..
Roxburgh					
Black's	35	4,029 0 3	858 11 11	95 19 6	2
Clyde and Alexandra ..					
Waikaia	8	..	..	37 2 8	..
Orepuki, Longwood, and Riverton ..	13	195 10 9	111 16 3	34 6 0	4
Arrow (Wakatipu Goldfield) ..	4	1,029 1 6	29 1 6	71 6 8	2
Queenstown	7	73 10 0	73 10 0	38 4 0	3
Mount Ida	3	100 0 0	20 0 0	2 0 0	..
Wyndham	2	60 0 0	..	..	..
Gore	10	69 10 2	..	12 1 10	5
Totals	548	9,684 3 7	3,074 5 0	839 11 5	58

No. 16.

RETURN of the NUMBER of MINING LEASES or LICENSES in Force on the 31st March, 1901, the EXTENT of GROUND LEASED or held under LICENSE, and RENTAL per ANNUM.

Mining Leases.

Mining District.	No.	Gross Acreage.			Rental per Annum.		
		A.	R.	P.	£	s.	d.
AUCKLAND—							
Hauraki North	122	4,967	0	0	710	0	0
Hauraki South	159	8,903	3	29	1,275	16	6
Te Aroha	10	384	0	36	1/- to 10/-		
Puhipuhi	..	..			..		
Ohinemuri	164	11,479	2	18	2,447	7	8
Tauranga	20	1,709	1	11	5/- to 10/-		
MARLBOROUGH—							
Wairau and Pelorus	3	812	2	32	40	12	9
NELSON—							
Collingwood	..	..			..		
Inangahua	87	4,733	3	8	1,035	12	6
Charleston	33	1,078	2	14	122	0	1
Ahaura	206	10,609	2	38	1,304	6	0
Lyell	39	1,510	0	0	231	5	0
Murchison	36	1,320	0	0	212	0	0
WESTLAND—							
Hokitika and Kanieri	131	5,459	0	0	761	0	0
Kumara	81	1,947	3	15	347	12	6
Greymouth	109	4,716	0	0	1,002	17	6
Ross	47	2,705	0	0	588	17	6
OTAGO—							
Cromwell	16	790	0	0	350	10	0
Hindon	11	348	0	0	89	16	9
Black's	199	9,257	0	0	2,108	1	6
Clyde and Alexandra							
Roxburgh							
Naseby	109	2,609	0	8	642	2	6
Arrow (Wakatipu Goldfield) ..	622	5,213	3	19	626	10	6
Queenstown	583	5,866	0	0	1,020	6	2
Orepuki and Longwood	38	2,365	0	0	118	5	0
Wyndham	17	774	0	0	207	0	0
Totals	2,842	89,559	2	28	15,242	0	5

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894.

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 Shares forfeited.	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.
											Quantity.	Value.		
AUCKLAND DISTRICT.														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Kuranui Gold-mining Co. (Ltd.)	12/9/95	15,000	3,434	...	59,300	..	49 7 6	700	55	5	..	560	4,146	..
Progress-Castle Rock Gold-mining Co. (No Liability)	19/9/95	11,179	4,469	..	28,614	..	..	45,911	53	3	317	848	5,849	..
Tararu Creek Gold-mining Co. (Ltd.)	1/9/95	95,000	60,000	..	190,000	0 10 0	..	4,780	33	80	20,228	40,405	76,128	..
New Hauraki North Gold-mining Co. (Ltd.) ..	6/12/98	14,000	..	10,000	70,000	..	8 6 8	10,000	28	..	..	..	1,189	..
Egerton Gold-mining Co. (No Liability) ..	10/8/97	3,750	188	..	75,000	..	..	..	8	..	..	..	141	..
Golden Sand Gold-mining Co. (No Liability) ..	5/4/97	8,000	..	..	80,000	..	22 18 4	58,700	10	8	..	1,175	5,588	..
New Golden Point Gold-mining Co. (No Liability)	21/4/97	10,000	..	..	10,000	..	21 1 0	27,444	58	1	..	3	1,455	..
New Whau Gold-mining Co. (No Liability) ..	30/3/95	18,750	5,679	1,464	125,000	0 1 3	474 18 11	47,406	150	6	125	329	6,549	..
Alpha Gold-mining Co. (No Liability)	30/3/95	15,000	8,197	7,063	100,000	0 3 0	..	14,317	130	6	863	792	12,420	..
Hauraki No. 2 Gold-mining Co. (No Liability) ..	10/7/95	12,000	6,639	..	80,000	0 2 0	84 16 7	68,531	22	2	4	10	6,724	..
Coromandel Freehold Proprietary Gold-mining Co. (No Liability)	11/11/95	18,750	10,313	..	150,000	0 0 0½	..	20,658	172	..	..	..	11,236	..
Waihi Consols Gold-mining Co. (No Liability) ..	18/10/95	16,200	8,749	50	162,000	0 0 9½	..	131,605	107	7	..	..	8,690	..
Golden Belt Gold-mining Co. (No Liability) ..	6/10/99	10,050	1,911	4,125	80,400	0 1 3	..	37,950	63	..	..	..	2,439	..
Kapowai Gold-mining Co. (No Liability) ..	19/6/00	5,000	1,020	250	100,000	0 0 3	167 10 0	..	77	5	..	..	651	..
Welcome Find Gold-mining Co. (Ltd.)	18/4/95	17,500	10,576	1,000	70,000	0 3 10	..	40,685	..	..	825	2,350	13,101	..
Star of Waihi Gold mining Co. (No Liability) ..	16/10/96	6,000	900	..	80,000	0 0 2·7	..	..	119	..	..	..	884	..
Queen of the North Gold-mining Co. (No Liability)	2/12/97	2,000	795	..	60,000	0 0 3⅓	..	20,300	36	2	137	389	1,186	..
Hauraki Freeholds (Ltd.)	25/1/99	10,000	..	..	200,000	..	..	..	190	12	..	..	..	..
Harbour View Gold-mining Co. (No Liability) ..	27/6/95	16,000	1,333	..	160,000	0 0 2	..	..	352	2	219	608	2,441	..
Barrier Reefs Gold-mining Co. (Ltd.)	11/12/99	108,000	..	108,000	108,000	1 0 0	..	..	145	120	..	8,457	24,379	..
Imperial Gold-mining Co. (No Liability) ..	22/2/95	10,000	6,729	528	100,000	0 1 5	119 7 4	70,838	148	4	54	112	7,593	..
May Queen Extended Gold-mining Co. (No Liability)	3/9/95	15,000	4,176	..	100,000	0 1 0⅘	..	14,350	101	9	..	235	4,534	..
Victoria Gold-mining Co. (No Liability) ..	2/9/90	25,600	15,372	1,600	128,000	0 3 0	..	2,000	172	5	..	12,094	24,922	..
Iron Cap Gold-mining Co. (No Liability) ..	16/12/98	11,000	600	3,750	110,000	0 1 9	..	28,600	56	6	..	157	1,245	..
Bullion Gold-mining Co. (Ltd.)	5/5/99	2,200	663	..	44,000	0 0 4	70 16 8	..	40	1	..	2,322	887	..
Waihi Consolidated (Ltd.)	23/3/00	25,000	835	15,000	100,000	0 3 2½	415 7 4	..	111	4	..	..	795	..
Puru Consolidated Gold-mining Co. (Ltd.) ..	17/7/97	24,563	8,116	7,915	65,500	0 5 2	889 19 9	..	134	5	..	561	9,641	..
Welcome Jack Gold-mining Co. (Ltd.)	9/3/00	5,000	165	500	100,000	1/ and 1d.	210 6 3	..	58	4	..	255	1,299	..
Rising Sun Gold-mining Co. (No Liability) ..	16/10/95	18,000	2,976	1,900	43,471	0 0 11⅘	179 4 2	76,529	51	2	..	..	3,042	..
Eclipse (Ltd.)	18/11/98	7,500	6,750	750	150,000	0 1 0	..	..	7	20	1,605	4,560	11,765	..
Tairua Broken Hills Gold-mining Co. (Ltd.) ..	12/7/99	12,403	10,586	..	124,032	0 1 8½	266 8 3	..	80	20	1,341	1,457	14,060	..
Juno Gold-mining Co. (No Liability)	3/3/96	8,890	1,654	..	71,119	0 0 3⅝	..	..	31	2	470	1,082	2,734	..
New Four-in-hand Gold-mining Co. (Ltd.) ..	30/6/98	22,500	2,751	19,748	90,000	0 5 0	..	..	152	20	3,515	10,186	9,742	2,250
Aotea Gold- and Silver-mining Co. (No Liability)	6/10/96	4,000	1,486	..	26,850	0 0 3½	..	53,150	22	..	..	..	1,544	..
Waihi South Gold-mining Co. (Ltd.)	3/9/95	19,800	10,650	7,350	132,000	0 2 8½	150 0 0	..	162	12	..	..	11,470	..
New Alburnia Gold-mining Co. (Ltd.)	16/4/96	51,531	50,888	118,469	170,000	1 0 0	643 5 0	..	244	..	2,596	6,878	24,786	..
Thames Talisman Gold-mining Co. (Ltd.) ..	28/6/00	3,000	642	..	58,000	..	175 0 0	..	18	6	..	..	641	..
Maratoto Battery Co. (Ltd.)	4/2/99	2,000	2,000	..	40,000	..	..	..	13	..	..	..	2,818	..
Waiorahi Gold-mining Co. (Ltd.)	1/8/71	18,000	15,000	..	6,000	2 10 0	..	..	46	18	63,646	177,405	143,988	37,775
Waihi Extended Gold-mining Co. (Ltd.) ..	12/8/95	149,967	5,575	..	149,967	1/6½ & 6½d.	486 13 4	103	383	15	..	..	5,747	..
Bunker's Hill Gold-mining Co. (Ltd.)	21/6/96	17,572	9,536	6,000	77,145	4/9 & 2/6	369 19 3	200	375	10	1,077	3,235	15,591	..
Chelmsford Gold mining Co. (Ltd.)	28/9/99	8,000	1,957	1,000	80,000	2/ & 8d.	376 9 9	..	71	16	11	14	3,019	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*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 Shares forfeited.	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.
											Quantity.	Value.		
AUCKLAND DISTRICT—*continued.*														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Young New Zealand Gold-mining Co. (No Liability)	31/10/95	9,750	..	..	65,000	0 1 2½	41 0 10	32,550	33	3	..	106	4,240	..
Waihi Beach United Gold-mining Co. (No Liability)	12/10/98	828	828	..	127,500	0 0 6	21 1 5	..	124	5	..	..		..
Maratoto Gold-mining Co. (Ltd.)	17/11/00	5,000	1,250	..	100,000	0 0 3	..	..	89	2	..	..	..	..
Broken Hill Gold-mining Co. (Ltd.)	16/1/95	13,500	1,979	..	90,000	0 0 6¾	65 5 1	..	198	2	..	..	2,984	..
Waitekauri King Gold mining Co. (No Liability)	26/2/96	11,545	3,456	..	117,450	0 0 9½	..	100,794	28	..	..	17	3,447	..
New Zealand Jubilee Gold-mine (Ltd.) ..	14/5/97	100,000	..	..	..	..	..	..	..	6	855	1,948	12,300	..
Totals	..	914,328	290,823	316,462	4,454,348	..	5,309 3 5	908,101	4,755	450	97,033	276,602	499,586	40,025
NELSON DISTRICT (INCLUDING WEST COAST).														
Keep-it-Dark Quartz-mining Co. (Ltd.) ..	2/3/74	20,000	6,208	10,000	20,000	0 16 2½	..	..	49	45	74,664	289,143	316,641	118,417
Stafford-Waimea Gold-dredging Co. (Ltd.) ..	14/3/00	7,000	903	2,000	9,000	1 0 0	1,897 10 0	..	63	..	..	..	712	..
Golconda Gold-dredging Co. (Ltd.)	28/2/00	6,000	2,373	2,000	8,000	1 0 0	1,426 15 0	..	114	..	..	..	365	..
Duke of Wellington Gold-dredging Co. (Ltd.) ..	27/3/00	6,500	2,355	..	6,500	0 10 0	913 0 0	25	145	..	..	..	1,577	..
Aldinga Gold-dredging Co. (Ltd.)	23/5/00	6,750	2,493	2,250	9,000	0 9 6	812 17 6	..	180	..	..	..	1,103	..
Minerva Gold-mining Co. (Ltd.)	24/2/90	12,000	6,602	400	17,285	0 6 7	93 9 11	6,715	19	..	821	..	10,910	..
Aylmer Lead (Gold-dredging Co.)	16/12/99	6,000	1,758	1,500	7,500	0 10 0	1,242 4 0	..	86	..	..	..	530	..
Major Robin Gold dredging Co. (Ltd.) ..	25/4/00	6,750	1,351	..	6,750	0 6 0	1,012 0 0	..	135	..	..	..	492	..
Lee's Ferry Gold-dredging Co. (Ltd.) ..	9/3/00	6,000	338	2,000	5,375	0 2 0	200 0 0	..	33	..	..	..	111	..
Wicklow Gold-dredging Co. (Ltd.)	9/3/00	6,000	372	2,000	5,850	0 2 0	213 0 0	..	41	..	..	..	345	..
Garibaldi Gold-dredging Co. (Ltd.)	15/1/00	6,000	3,472	..	6,000	0 14 0	748 10 0	..	113	..	..	..	2,509	..
Moonlight Gold-dredging Co. (Ltd.)	7/5/00	7,750	2,260	..	7,750	0 9 6	1,421 0 0	..	118	..	..	..	848	..
Clifton Gold-dredging Co. (Ltd.)	9/6/00	5,500	479	1,600	7,100	Various	73 15 0	..	92	..	..	..	249	..
Lord Nelson Gold-dredging Co. (Ltd.)	15/6/00	6,750	644	..	5,780	0 3 0	223 5 0	..	94	..	..	..	330	..
Yellowstone Gold-dredging Co. (Ltd.)	11/4/00	5,500	663	1,500	7,000	Various	299 7 6	..	112	..	..	..	324	..
Golden Grey Gold-dredging Co. (Ltd.)	9/3/00	6,000	355	2,000	5,350	0 2 0	180 0 0	..	35	..	..	..	352	..
Ross Daydawn Gold-dredging Co. (Ltd.) ..	27/3/00	7,000	2,712	2,000	9,000	0 14 0	2,188 0 0	..	80	..	..	..	2,237	..
Three-mile (Greenstone Creek) Dredging Co. (Ltd.)	15/9/99	6,500	6,093	1,500	8,000	1 0 0	408 0 0	..	90	..	..	..	4,271	..
Ngahere Gold-dredging Co. (Ltd.)	23/5/00	7,000	385	2,000	6,575	0 2 0	272 10 0	..	64	..	..	..	376	..
Golden Banner Gold-dredging Co. (Ltd.) ..	9/10/99	5,500	3,673	1,600	7,100	Various	1,277 10 0	..	138	..	..	..	2,951	..
Wangapeka Gold-dredging Co. (Ltd.)	19/9/00	14,975	1,362	..	14,975	0 2 0	178 15 0	..	208	..	..	..	577	..
Kohikohi Gold-dredging Co. (Ltd.)	27/5/00	12,000	3,896	2,500	12,000	0 9 0	378 11 0	..	109	..	..	..	1,767	..
Blake Auckland Leads Gold-dredging Co. (Ltd.)	11/7/00	6,100	958	2,500	6,100	0 6 0	872 9 0	..	81	..	..	..	469	..
Gow's Creek Gold-mining Co. (Ltd.)	7/12/00	1,800	380	..	1,800	0 4 6	25 0 0	..	7	25	..	..	257	..
Grey Arnold No. 1 Gold-dredging Co. (Ltd.) ..	12/7/00	7,000	427	2,000	9,000	0 1 3	10 12 6	..	76	..	..	..	17	..
Slate River Sluicing Co. (Ltd.)	26/7/00	8,687	5,957	1,200	9,887	Various	432 12 6	..	75	27	..	..	961	..
Virgin Flat Gold-mining Co. (Ltd.)	19/12/98	13,995	11,899	10,000	23,995	Various	190 12 6	100	60	31	..	..	11,339	..
Ford's Creek Gold-dredging Co. (Ltd.) ..	15/9/99	5,000	4,997	1,500	6,500	1 0 0	3 0 0	125	97	8	..	..	4,997	..
No Town Creek Gold-dredging Co. (Ltd.) ..	9/3/00	8,500	3,604	3,500	11,150	0 12 0	1,496 10 0	..	118	..	..	..	2,286	..
Nelson Creek Gold-dredging Co. (Lfd.) ..	1/7/99	6,000	5,998	2,500	8,500	1 0 0	..	..	100	7	..	..	5,459	..
Dobson No. 2 Gold-dredging Co. (Ltd.) ..	16/8/99	5,500	5,480	2,000	7,500	1 0 0	20 10 0	..	116	7	7	27	5,761	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*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 Shares forfeited.	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
											Quantity.	Value.		
NELSON DISTRICT (INCLUDING WEST COAST)—*continued*.														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Ponsonby Gold-dredging Co. (Ltd.)	9/4/00	6,000	361	2,000	6,000	0 2 0	298 15 0	..	49	..	..	..	307	..
Crown Diamonds Gold-dredging Co. (Ltd.) ..	3/5/00	6,500	443	2,000	6,500	0 2 0	227 10 0	..	62	..	..	..	328	..
Ara Gold-sluicing Co. (Ltd.)	16/10/00	3,000	534	1,000	2,375	0 10 0	653 2 6	..	25	..	..	..	312	..
No Town No. 2 Gold-dredging Co. (Ltd.) ..	8/5/00	7,400	1,483	2,600	10,000	0 12 0	2,957 10 0	..	69	..	..	..	1,005	..
Marsden No. 3 Gold-dredging Co. (Ltd.) ..	28/3/00	6,000	5,400	..	8,000	0 18 0	1,711 0 0	..	118	..	..	..	2,704	..
Hau Hau Creek Dredging Co. (Ltd)	19/2/00	7,000	2,871	3,500	7,000	0 19 0	453 15 0	..	46	..	..	..	1,461	..
Teramakau Gold-dredging Co. (Ltd.)	24/10/99	7,369	4,224	2,000	37,475	0 4 6	2,334 8 6	..	173	..	..	..	2,857	..
Commissioners Flat Gold-mining Co. (Ltd.) ..	3/4/00	13,500	2,999	3,000	13,500	0 8 0	1,763 15 0	..	93	..	..	..	630	..
Reeves Proprietary Gold-dredging Co. (Ltd.) ..	19/10/99	13,000	8,700	2,500	11,200	1 0 0	..	225	225	7	42	166	8,534	..
Marsden No. 1 Gold-dredging Co. (Ltd.) ..	27/10/99	6,000	3,421	1,500	6,000	1 0 0	742 0 0	..	91	..	..	..	..	..
Waiwhero Sluicing and Dredging Co. (Ltd.) ..	9/2/00	31,000	1,334	4,325	31,000	0 11 0	..	..	80	..	..	..	9,528	..
Great Lead Gold-dredging Co. (Ltd.)	11/9/99	5,500	4,740	..	5,500	Various	760 0 0	..	102	..	..	..	3,905	..
North Beach Gold-dredging Co. (Ltd)	27/2/00	6,200	3,125	..	6,200	0 14 0	1,215 0 0	..	91	..	..	..	1,443	..
Mikonui River Cold-dredging Co. (Ltd.) ..	4/4/00	8,250	1,936	..	10,500	0 8 0	1,363 15 0	..	147	..	..	..	472	..
Great Woodstock Gold-dredging Co. (Ltd.) ..	16/3/00	8,300	3,394	..	10,500	0 14 0	2,416 5 0	..	110	..	..	..	633	..
Mosquito Gold-dredging Co. (Ltd.)	24/4/00	10,000	2,978	..	10,000	0 12 0	1,702 8 6	..	105	..	..	..	1,132	..
Jubilee Gold-mining Co. (Ltd.)	16/11/99	3,600	2,380	1,200	3,600	1 0 0	20 0 0	..	19	1	113	401	3,642	..
Murchison Gold-dredging Co. (Ltd.)	29/7/00	6,900	664	2,500	6,900	0 2 6	198 10 0	..	38	..	..	..	585	..
Craig's Freehold Gold-dredging Co. (Ltd.) ..	20/8/00	13,000	826	8,000	21,000	0 2 0	473 18 0	..	98	12	18	73	811	..
Grey Monarch Gold-dredging Co. (Ltd.) ..	19/6/00	7,000	770	2,500	7,000	0 3 0	280 1 0	..	90	..	..	..	340	..
Grey River Extended Gold-dredging Co. (Ltd.) ..	17/5/00	7,500	791	2,500	7,500	0 3 0	333 15 0	..	84	..	..	..	365	..
Wareatea Gold-dredging Co. (Ltd.)	1/10/00	6,000	1,377	..	6,000	0 8 0	1,022 14 0	..	118	1	..	..	796	..
Grey River No. 2 Gold-dredging Co. (Ltd.) ..	9/5/00	10,000	375	2,500	10,000	0 1 0	..	..	95	..	..	..	190	..
Maori Gully Gold-dredging Co. (Ltd.)	12/4/00	9,000	1,250	2,200	9,000	0 6 0	790 5 0	..	108	..	..	..	437	..
Grey River Dredging Co. (Ltd.)	10/3/99	8,500	6,500	2,000	8,500	1 0 0	..	..	170	8	632	2,418	7,859	..
Taffy Gold-mining Co. (Ltd.)	27/1/99	7,000	1,035	..	28,000	0 0 9	15 0 0	750	38	8	379	1,527	3,141	..
Crœsus (Paparoa) Gold-mining Co. (Ltd.) ..	18/5/97	35,938	10,750	23,750	57,500	12/ and 2/	..	..	173	20	2,361	9,621	21,055	719
Britannia Gold-mining Co. (Ltd.)	3/3/99	6,750	1,388	..	..	0 6 7¾	43 15 10	8,500	15	..	81	319	1,629	..
Addison's Long Tunnel Gold-mining Co. (Ltd.) ..	24/9/99	841	463	..	..	0 11 0	..	26	24	..	792	3,128	3,406	177
Totara Flat Gold-dredging Co. (Ltd.)	26/4/00	8,940	2,480	1,800	8,940	0 9 0	733 10 0	..	59	..	..	..	907	..
Four River Plain Gold-dredging Co. (Ltd.) ..	4/5/99	15,000	7,930	2,800	15,000	0 13 0	..	..	92	..	12	47	9,058	..
Rocklands Beach Gold-dredging Co. (Ltd.) ..	1/9/99	8,512	6,499	1,800	8,512	1 0 0	213 2 6	..	94	..	..	..	6,504	..
Ruby Creek Gold-dredging Co, (Ltd.)	19/12/99	2,600	2,498	2,500	8,100	0 9 6	161 15 0	..	86	..	..	..	1,862	..
Kohinoor Gold-dredging Co. (Ltd.)	15/2/00	12,500	4,818	2,500	12,500	0 12 0	1,182 0 0	..	147	..	..	..	720	..
Mahinapua Gold-dredging Co. (Ltd.)	31/10/99	6,750	4,690	2,000	6,750	1 0 0	60 0 0	..	37	8	3	13	6,172	..
Parapara Hydraulic Sluicing and Mining Co. (Ltd.)	18/6/92	49,800	26,360	19,200	302	Various	150 0 0	..	50	20	4,391	16,754	38,922	..
Mont d'Or Gold-mining and Water-race Co. (Ltd.)	25/7/82	12,000	10,800	..	12,000	0 18 0	..	..	27	20	25,006	96,758	73,010	36,000
Marsden Lead Gold-dredging Co. (Ltd.) ..	5/5/00	6,000	525	..	6,000	0 4 0	675 0 0	..	13	..	..	..	431	..
Premier (Buller) Gold-dredging Co. (Ltd.) ..	9/3/00	6,585	2,132	1,500	6,585	Various	1,451 5 0	..	147	..	..	..	1,903	..
Thomson's Bullock Creek Gold-dredging Co. (Ltd.)	14/5/00	8,000	..	..	8,000	Various	139 2 0	..	133	..	..	..	869	..
Mokoia Gold-dredging Co. (Ltd.)	21/4/99	7,216	5,651	1,250	7,216	£1 and 5/	..	..	170	8	36	135	6,122	..
Consolidated Goldfields of New Zealand (Ltd.) ..	22/1/96	225,000	225,000	..	225,000	1 0 0	..	..	..	200	4,009	16,191	200,849	45,000
Humphrey's Hydraulic Sluicing Co. (Ltd). ..	2/7/98	145,000	..	145,000	145,000	..	..	..	87	95	278	1,085	19,226	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*continued*.

NELSON DISTRICT (INCLUDING WEST COAST)—*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 Shares forfeited.	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.
											Quantity.	Value.		
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Welcome Gold-mining Co. (Ltd.)	2/7/98	100,000	..	100,000	100,000	..	..	..	54	20	..	..	6,707	..
Progress Mines of New Zealand (Ltd.)	8/12/96	275,000	75,000	200,000	275,000	1 0 0	..	..	13	300	54,027	222,215	220,679	68,750
Maori King Gold-dredging Co. (Ltd.)	30/3/00	5,500	518	..	7,000	0 6 0	1,132 5 0	..	106	1	..	..	332	..
Grey River Consolidated Dredging Co. (Ltd.)	22/9/99	7,500	5,359	..	15,000	0 8 0	641 7 6	..	200	..	..	..	4,380	..
Leviathan Gold-dredging Co. (Ltd.)	3/10/99	9,000	3,000	3,000	9,000	1 0 0	..	..	195	9	50	194	10,146	..
Fox's Creek Dredging Co. (Ltd.)	19/5/00	6,885	408	..	6,885	0 2 0	280 10 0	..	88	..	..	..	368	..
Hokitika Extended Dredging Co. (Ltd.)	7/4/00	9,000	2,316	2,500	9,000	0 10 0	2,183 15 0	..	135	..	..	..	582	..
Ahaura River Gold-dredging Co. (Ltd.)	9/9/99	6,400	4,947	1,600	32,000	0 4 6	813 2 6	..	42	..	..	..	43	..
Bond's Creek Hydraulic Sluicing Co. (Ltd.)	21/7/00	860	47	..	860	0 2 0	39 5 0	..	42	..	..	..	43	..
Pile-up Gold-dredging Co. (Ltd.)	20/8/00	5,200	761	1,800	7,000	0 5 0	539 1 0	..	108	..	..	..	381	..
Prince of Wales Dredging Co. (Ltd.)	17/10/99	10,000	5,911	4,000	14,000	0 12 6	339 11 0	..	87	2	..	..	5,237	..
Foley's Extended Gold-dredging Co. (Ltd.)	19/10/00	5,000	302	..	5,000	0 4 0	698 10 0	..	42	..	..	..	301	..
Bignell's No Town Gold-dredging Co. (Ltd.)	10/4/00	8,000	1,264	3,000	11,000	0 8 0	1,936 0 0	..	176	..	..	..	1,187	..
Daylight Gold-dredging Co. (Ltd.)	15/5/00	6,000	1,081	2,000	8,000	0 14 0	3,119 2 6	..	113	..	..	..	1,488	..
Greenstone Creek Gold-dredging Co. (Ltd.)	10/10/99	7,000	6,623	2,000	8,800	1 0 0	177 8 0	..	148	..	..	..	4,684	..
Pactolus Gold-dredging Co. (Ltd.)	30/8/99	8,125	6,762	1,250	12,500	0 13 0	113 5 0	..	149	2	..	..	5,091	..
Buller Dredges (Ltd.)	2/10/97	6,000	3,000	..	12,000	0 5 0	..	..	35	11	2,481	9,667	14,637	300
Callaghan's Creek Gold-dredging Co. (Ltd.)	25/5/00	7,500	2,023	1,875	12,500	0 4 6	227 10 0	..	66	..	..	..	1,069	..
Buller Junction Gold-dredging Co. (Ltd.)	8/6/99	8,125	7,088	1,250	12,500	0 14 3	568 3 6	..	52	2	..	..	6,101	..
Kirwan's Reward Gold-mining Co. (Ltd.)	8/3/98	56,000	3,092	..	56,000	0 1 1¼	..	..	59	29	1,873	7,466	7,138	2,800
Reefton United Gold-dredging Co. (Ltd.)	19/5/00	9,750	1,437	1,500	15,000	0 2 6	63 2 6	1,325	146	..	..	..	383	..
Omdurman Gold-dreding Co. (Ltd.)	8/1/00	6,330	2,202	1,500	6,330	0 12 0	696 6 0	..	84	..	..	..	415	..
Golden United Dredging Co. (Ltd.)	7/4/00	6,500	1,785	..	6,500	0 9 6	978 0 0	..	112	..	..	..	613	..
Johnston's United Mining Co. (Ltd.)	27/6/81	18,585	14,060	..	20,000	19/8½ and 19/2½	..	..	45	1	10,439	..	50,379	1,916
Sullivan's Lead Gold-dredging Co. (Ltd.)	8/5/00	10,000	2,333	..	10,000	0 9 6	1,917 10 0	..	158	1	..	..	1,560	..
Princess of Wales Gold-dreding Co. (Ltd.)	..	7,650	548	..	7,650	0 2 0	217 10 0	..	83	..	..	..	91	..
Blackwater River Gold-dredging Co. (Ltd.)	27/4/00	7,000	1,240	3,000	10,000	Various	1,210 7 6	..	103	..	..	..	561	..
Brandy Jack's Dredging Co. (Ltd.)	3/3/00	9,000	2,256	..	9,000	Various	1,344 0 0	..	110	..	..	..	1,460	..
Foley's Creek Gold-dreding Co. (Ltd.)	18/6/00	8,300	5,513	..	8,300	Various	1,127 10 0	..	97	..	..	..	7,367	..
Wakamarina Golden Point Dredging Co. (Ltd.)	10/10/99	5,250	3,419	1,200	5,250	0 18 0	226 10 0	..	57	..	..	..	2,829	..
Maori Queen Gold-dredging Co. (Ltd.)	10/8/00	9,750	5,963	2,600	9,750	0 15 0	210 0 0	..	105	..	..	..	5,510	..
Big River Gold-mining Co. (Ltd.)	11/4/91	12,000	1,977	..	24,000	0 1 9	423 1 3	..	64	9	23,590	94,816	55,660	46,200
Old Diggings Gold-dredging Co. (Ltd.)	19/10/99	9,000	1,145	1,125	12,000	0 4 0	805 5 0	..	69	..	..	..	255	..
Golden Lead Mining Company (Ltd.)	30/10/90	12,000	9,756	..	24,000	0 9 6	114 3 11	..	29	2	2,171	8,729	18,373	..
Snowy Creek United Gold-mining Co. (Ltd.)	17/12/98	12,000	1,644	3,600	48,000	0 3 2	188 12 2	18,100	59	1	47	174	1,971	..
Consolidated Dredging Co. (Ltd.)	18/1/99	6,000	5,311	600	12,000	0 10 0	89 7 6	..	42	1	533	2,084	7,342	..
Lord Edward Gold-mining Co. (Ltd.)	13/11/83	12,000	4,050	12,000	24,000	0 3 4½	0 8 9	£4,936	28	..	34	134	4,097	..
Greenstone Junction Gold-dredging Co. (Ltd.)	22/9/99	7,500	7,114	1,500	12,000	0 15 0	385 15 0	..	132	..	..	..	6,450	..
Stillwater Creek Gold-dreding Co. (Ltd.)	2/4/00	4,661	695	..	4,661	0 6 0	703 0 0	..	93	..	..	..	538	..
Greenstone Gold-dredging Co. (Ltd.)	9/12/99	6,535	3,048	2,000	6,535	0 12 0	1,526 10 0	..	111	..	..	..	1,271	..
Claughesy's Freehold Gold-dredging Co. (Ltd.)	26/4/00	7,100	1,371	..	7,100	0 6 0	760 14 0	..	116	..	..	..	1,419	..
Republic Sluicing Co. (Ltd.)	20/9/98	13,750	..	11,000	22,000	..	..	..	10	11	723	2,856	3,558	..
Red Jack's Gold-dredging Co. (Ltd.)	26/4/00	5,840	2,982	1,700	9,000	1 0 0	2,859 0 0	750	138	..	..	..	2,030	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*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 Shares forfeited.	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.
											Quantity.	Value.		
NELSON DISTRICT (INCLUDING WEST COAST)—*cintinued*.														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
West Coast Mining Syndicate (Ltd.)	1/10/00	1,650	238	..	1,650	0 5 0	175 0 0	..	24	..	..	..	78	..
Caledonia Gold-dredging Co. (Ltd.)	30/3/00	8,200	4,068	1,800	8,200	0 12 6	1,057 2 6	50	140	..	..	..	2,864	..
Alpine Extended Gold-mining Co. (Ltd.) ..	25/8/97	25,000	2,579	..	50,000	0 1 3	545 17 3	..	172	3	7,914	30,623	36,256	..
Kapai Gold-dredging Co. (Ltd.)	22/9/00	5,163	479	..	5,163	Various	295 14 0	..	170	..	..	..	429	..
Welcome Gold-dredging Co. (Ltd.)	3/5/00	9,900	2,743	2,750	9,900	0 13 0	1,908 6 0	..	111	..	..	..	2,067	..
Roaring Meg Sluicing and Hydraulic Power Co. (Ltd.)	25/10/97	10,000	5,000	5,000	100,000	0 2 0	..	..	29	2	45	179	3,419	..
Westland Water-supply Electric Power and Gold-dredging Co. (Ltd.)	8/10/00	3,705	537	12,000	3,705	0 4 0	574 16 0	..	29	1	..	..	151	..
Auckland Back Lead Gold-dredging Co. (Ltd.) ..	31/7/00	6,500	438	2,500	6,500	0 2 0	212 10 0	..	36	..	..	..	348	..
Woodstock Gold-dredging Co. (Ltd.)	22/2/00	12,000	3,305	3,000	12,000	0 10 0	1,200 10 0	..	117	..	..	..	796	..
Ross Flat Dredging Co. (Ltd.)	9/2/00	12,500	1,788	2,500	12,500	0 6 0	1,212 10 0	..	129	..	..	..	578	..
Perrett's Junction Lead Gold-dredging Co. (Ltd.)	9/5/00	18,000	2,469	..	18,000	0 4 0	1,059 0 0	..	200	..	..	..	2,023	..
Orwell Creek Gold-dredging Co. (Ltd.) ..	29/9/99	8,500	5,859	3,500	8,500	0 18 6	2,003 18 0	..	192	..	..	..	4,525	..
Trafalgar Gold-dredging Co. (Ltd.)	16/2/00	6,750	2,667	..	6,750	0 11 0	1,045 5 0	..	116	..	..	..	2,036	..
Watterson's Consols Gold-dredging Co. (Ltd.) ..	22/2/00	6,500	2,696	2,000	6,500	0 12 0	1,203 15 0	..	125	..	..	..	1,459	..
Erickson's Reward Gold-dredging Co. (Ltd.) ..	24/10/99	6,000	4,541	2,000	6,000	0 18 6	1,009 0 0	..	147	..	..	..	4,104	..
Westland Gold-dredging Co. (Ltd.)	27/4/00	8,000	2,958	..	8,000	0 12 0	1,842 10 0	..	165	..	..	..	854	..
Victory Gold-dredging Co. (Ltd.)	14/5/00	7,050	2,609	..	7,050	0 9 6	739 15 0	..	165	..	..	..	1,154	..
Fairdown Gold-dredging Co. ((Ltd.)	19/11/00	5,725	413	..	5,725	0 2 0	160 0 0	..	100	..	..	..	145	..
Greenstone Sluicing Co. (Ltd.)	12/8/89	4,700	2,703	2,300	4,700	0 11 6	..	..	29	..	4,036	15,868	18,958	1,925
Waipuna Creek Gold-dredging Co. (Ltd.) ..	22/5/00	6,000	414	..	8,000	..	186 10 0	..	58	..	..	..	394	..
El Dorado Gold-dredging Co. (Ltd.)	10/4/00	5,500	506	1,800	5,500	0 6 0	1,144 7 6	..	113	1	..	..	327	..
Rocklands King Gold-dredging Co. (Ltd.) ..	28/8/00	11,000	100	3,000	11,000	0 0 3	..	..	19	..	..	..	72	..
Tucker Flat Gold-dredging Co. (Ltd.)	9/3/00	6,000	472	1,500	5,700	0 4 0	688 0 0	..	38	..	..	..	442	..
Pactolus No. 3 Gold-dredging Co. (Ltd) ..	0/3/00	7,500	533	2,500	10,000	0 2 0	217 10 0	..	119	..	..	..	545	..
Pactolus No. 2 Gold-dredging Co. (Ltd.) ..	0/3/00	6,400	613	1,600	8,000	0 2 0	27 10 0	..	103	..	..	..	573	..
New River Gold-dredging Co. (Ltd.)	0/12/99	4,500	3,716	2,500	14,000	0 10 0	783 14 0	..	130	..	..	..	3,669	..
Perry's Reward Gold-dredging Co. (Ltd.) ..	17/5/00	9,000	3,000	2,500	9,000	0 10 0	1,048 10 0	475	119	7	..	..	4,531	..
Lower Nelson Creek Gold-dredging Co. (Ltd.) ..	0/4/00	7,500	..	..	7,500	..	750 0 0	..	9	..	..	..	49	..
Buller United Gold-mining and Dredging Co. (Ltd.)	13/12/99	2,500	2,500	..	2,500	1 0 0	..	..	215	..	..	..	172	..
Great Greenstone Gold-dredging Co. (Ltd.) ..	10/5/00	11,500	899	2,500	11,500	0 3 0	451 5 0	..	138	..	..	..	622	..
Cameron's New River Gold-dredging Co. (Ltd.) ..	0/6/00	6,000	265	..	6,000	0 1 6	185 0 0	..	42	..	..	..	240	..
Kahurangi Gold-dredging Co. (Ltd.)	0/10/00	6,000	24	..	6,000	0 2 0	576 5 0	..	25	..	..	..	26	..
Twelve-mile Gold-dredging Co. (Ltd.)	0/7/00	6,000	33	..	6,000	0 2 0	567 10 0	..	58	..	..	..	78	..
Cockeye Creek Gold-dredging Co. (Ltd.) ..	0/5/00	6,000	23	..	6,000	0 2 0	577 10 0	..	75	..	..	..	25	..
Red Jack's Creek Gold-dredging Co. (Ltd.) ..	0/4/00	9,000	..	..	9,000	..	900 0 0	..	22	..	..	..	65	..
Waimangaroa River Gold-dredging Co. (Ltd.) ..	18/6/00	1,125	742	2,000	9,500	1 0 0	383 0 0	..	132	..	..	..	917	..
Mapourika River Gold-dredging Co. (Ltd.) ..	1/5/00	992	733	1,700	8,315	1 0 0	259 10 0	..	154	1	..	..	672	..
Shellback Gold-dredging Co. (Ltd.)	11/5/00	7,500	377	2,500	10,000	2/ and 1/	372 13 0	..	85	..	..	..	376	..
Waipuna Gold-dredging Co. (Ltd.)	30/8/99	5,400	5,147	600	6,000	15/ and £1	..	20	138	8	95	369	6,292	..
Saltwater Creek Gold-dredging Co. (Ltd.) ..	23/2/00	9,000	963	2,000	9,000	4/ and £1	436 15 0	..	150	..	..	..	651	..
A1 Gold-dredging Co. (Ltd.)	13/11/99	8,500	5,936	1,800	8,500	1 0 0	763 17 0	..	130	..	..	..	5,870	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*continued.*

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											Quantity.	Value.		
NELSON DISTRICT (INCLUDING WEST COAST)—*continued.*														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Kumara Long Tunnel Gold-mining Co. (Ltd.) ..	16/5/82	8,000	7,433	..	16,000	0 9 3½	..	3,440	23	7	5,696	22,213	27,572	8,550
Kohinoor Extended Gold-dredging Co. (Ltd.) ..	10/4/00	10,000	1,000	2,500	12,500	0 2 0	..	..	46	..	..	..	570	..
Hokitika River Gold-dredging Co. (Ltd.) ..	31/8/99	13,000	5,837	3,000	13,000	14/ and £1	1,151 19 0	..	233	..	..	..	3,725	..
Waiho Gold-dredging Co. (Ltd.)	26/6/99	4,555	254	2,000	4,555	£1 and 3/	129 10 0	..	68	..	..	..	238	..
Totals	..	2,171,894	779,547	766,025	2,579,986	..	106,638 0 7	45,562	44,675	991	231,435	871,261	1,458,876	332,679
OTAGO DISTRICT.														
Blue Spur and Gabriel's Gully Consolidated Gold Co. (Ltd.)	1/2/88	91,266	37,622	60,000	91,266	1 0 0	..	..	..	35	35,337	138,622	142,918	27,286
Golden Cave Reefing Co. (No Liability) ..	1/2/99	9,800	302	7,000	9,800	0 17 6	5 12 6	125	17	..	3	..	293	..
Evans Flat Dredging Co. (Ltd.)	14/8/97	2,800	2,400	400	2,800	1 0 0	..	..	54	7	1,723	6,636	7,781	2,450
Scottish Chief Dredging Co. (Ltd.)	16/2/00	8,000	1,911	..	8,000	0 16 0	3,528 15 0	..	139	..	..	..	2,997	..
Tuapeka Dredging Co. (Ltd.)	31/7/97	2,800	2,500	300	2,800	1 0 0	..	..	43	7	1,523	5,863	7,334	1,610
Reliance Gold-dredging Co. (Ltd.)	30/10/99	3,600	2,543	150	3,600	1 0 0	457 10 0	..	52	..	..	..	2,172	..
Ruby Gold-dredging Co. (Ltd.)	20/2/00	6,500	1,689	2,000	8,500	1 0 0	3,511 5 0	..	126	..	..	..	1,456	..
Lawrence Gold-dredging Co. (Ltd.)	11/10/99	450	450	1,050	1,500	1 0 0	..	..	21	7	726	2,795	2,532	600
Success Gold-dredging Co. (Ltd.)	16/7/97	2,400	2,400	..	2,400	1 0 0	..	..	19	7	3,363	12,947	10,021	5,280
Golden Standard Dredging Co. (Ltd.)	9/10/99	6,500	4,385	1,500	8,000	1 0 0	2,115 5 0	..	108	1	..	..	4,711	..
Sailor's Gully (Waitahuna) Gold-mining Co. (Ltd.)	3/6/96	2,000	100	1,800	2,000	0 10 0	..	..	9	5	1,074	3,863	3,677	450
Ngapara No. 3 Gold-dredging Co. (Ltd.) ..	13/9/99	5,000	4,975	2,000	7,000	1 0 0	25 0 0	..	71	7	85	327	737	..
Chicago Gold-dredging Co. (Ltd.)	1/11/99	6,250	6,206	2,500	5,000	2 10 0	43 15 0	..	53	7	1,050	4,056	2,939	750
Clyde Dredging Co. (Ltd.)	17/5/95	3,850	3,850	150	4,000	1 0 0	..	..	78	8	7,953	30,650	13,952	15,400
Matau Dredging Co. (Ltd.)	16/10/97	6,200	6,200	..	7,000	1 0 0	..	..	130	8	4,514	17,359	11,537	9,975
Royal Sovereign Dredging Co. (Ltd.)	23/1/00	1,650	1,106	..	6,600	0 5 0	543 15 0	..	151	1	..	..	718	..
Golden Crescent Sluicing Co. (Ltd.)	26/11/98	3,500	..	..	3,500	1 0 0	..	..	25	8	522	2,008	5,932	..
Gabriel Gold-dredging Co. (Ltd.)	12/6/00	3,350	1,451	2,150	4,495	0 15 0	349 6 0	100	57	6	..	..	1,848	..
Zealandia Syndicate (Ltd.)	21/10/99	4,000	4,000	3,000	7,000	1 0 0	..	..	58	2	..	..	3,343	..
Ourawera Gold-mining Co. (Ltd.)	23/5/95	3,000	2,800	200	3,000	1 0 0	..	..	20	..	3,348	13,232	13,200	3,415
Unity Gold-dredging Co. (Ltd.)	8/8/00	4,200	4,200	..	10,500	1 0 0	..	..	25	8	386	1,487	1,233	..
Big Flat Dredging Co. (Ltd.)	21/12/99	5,300	3,735	1,700	7,000	0 18 0	1,315 4 0	..	92	..	..	..	2,633	..
Island Creek Gold-dredging Co. (Ltd.)	20/3/00	3,000	2,468	1,000	4,000	Various	232 10 0	..	69	..	..	..	2,322	..
Golden Reward Gold-dredging Co. (Ltd.) ..	20/3/99	6,000	2,862	1,500	7,500	Various	1,038 0 10	..	127	..	..	..	2,437	..
Junction Waikaka Gold-dredging Co. (Ltd.) ..	10/10/00	5,100	853	..	5,100	Various	677 10 0	..	42	..	..	..	574	..
Premier Waikaka Gold-dredging Co. (Ltd.) ..	15/9/99	4,200	4,160	1,300	5,500	Various	40 0 0	..	85	8	..	..	5,096	..
Paterson's Freehold Gold-mining Co. (Ltd.) ..	15/7/99	8,000	4,315	4,000	12,000	Various	85 7 0	..	27	9	346	1,369	5,097	600
Lower Enfield Gold-dredging Co. (Ltd.) ..	15/3/00	6,000	2,295	1,500	7,500	0 10 0	705 0 0	..	106	..	..	..	2,017	..
Deep Stream Amalgamated Hydraulic Sluicing Co. (Ltd.)	4/2/97	8,500	8,500	3,500	12,000	1 0 0	..	..	61	16	2,957	11,442	20,554	4,150
Glenrock Consolidated (Ltd.)	1/7/95	45,000	45,000	..	450,000	0 10 0	4,687 3 6	3,105	1,400	24	10,006	39,620	43,908	..
Golden Gravel Gold-dredging Co. (Ltd.) ..	29/7/99	6,000	4,517	1,500	7,500	Various	583 4 6	..	155	..	..	..	3,016	..
Leaning Rock Gold-dredging Co. (Ltd.) ..	7/10/99	7,000	4,743	1,500	8,500	Various	1,557 10 0	..	110	..	..	..	3,420	..
Golden Channel Gold-dredging Co. (Ltd.) ..	28/2/00	6,000	351	..	5,955	0 2 0	244 9 0	..	100	..	..	..	..	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*continued*.

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										Quantity.	Value.		
OTAGO DISTRICT—*continued*.													
		£	£	£		£ s. d. £ s. d.				Oz.	£	£	£
Waikaka Forks Gold-dredging Co. (Ltd.) ..	18/4/99	6,000	5,142	800	6,000	1 0 0 58 0 0	..	120	7	116	448	5,429	..
Magnetic Gold-dredging Co. (Ltd.)	12/7/97	7,000	5,000	2,000	7,000	1 0 0 ..	..	161	9	4,378	16,791	21,436	7,350
Junction Electric Gold-dredging Co. (Ltd.) ..	2/9/99	26,000	10	25,990	26,000	1 0 0 ..	..	261	16	4,534	17,499	6,523	9,750
Cardrona Valley Gold-dredging Co. (Ltd.) ..	8/7/99	6,272	5,016	1,000	6,272	1 0 0 255 12 6	..	110	..	..	..	4,920	..
Hartley and Riley Beach Dredging Co. (Ltd.) ..	14/7/97	6,500	6,300	200	6,500	1 0 0 ..	..	362	9	17,389	67,348	14,681	56,063
Naseby Dredging and Hydraulic Sluicing Co. (Ltd.)	16/10/97	5,000	2,288	2,000	5,000	0 15 3 ..	..	23	10	1,815	7,024	10,417	750
Majestic Gold-dredging Co. (Ltd.)	31/7/99	5,700	5,700	800	6,500	1 0 0 ..	..	98	1	..	..	5,713	..
Champion Gold-mining Co. (Ltd.)	30/12/98	10,000	3,303	..	10,000	10/ and 8/ 456 11 0	..	57	7	517	1,989	5,413	..
Meg and Annie Gold-dredging Co. (Ltd.) ..	9/5/99	6,000	6,000	1,500	7,500	1 0 0 ..	..	151	8	..	3,629	7,936	1,875
Merrimac Gold-dredging Co. (Ltd.)	18/8/99	6,400	6,400	1,600	8,000	1 0 0 ..	..	133	..	..	78	7,143	..
Empire Gold-dredging Co. (Ltd.)	13/7/97	5,000	5,000	..	5,000	1 0 0 ..	..	43	14	4,537	15,694	15,661	4,885
Monte Christo Dredging Co. (Ltd.)	7/6/99	6,900	6,631	1,100	7,939	1 0 0 208 7 0	..	164	..	..	..	5,583	..
Kawarau Bridge Gold-dredging Co. (Ltd.) ..	22/8/99	6,595	5,653	2,000	17,189	0 10 0 941 14 6	..	198	..	..	..	5,224	..
Kawarau Consolidated Gold-dredging Co. (Ltd.)	20/9/99	5,600	3,926	1,900	7,500	0 18 0 1,674 0 0	..	122	..	..	..	3,498	..
Roxburgh Amalgamated Mining and Sluicing Co. (Ltd.)	2/3/99	29,153	12,737	15,000	29,152	0 18 0 ..	825	150	22	16,235	63,013	59,014	18,683
Roxburgh Jubilee Dredging Co. (Ltd.)	22/11/99	8,500	4,967	3,500	12,000	0 13 0 983 1 0	..	196	..	..	..	3,301	..
Arrow Flat Hydraulic Gold-mining Co. (Ltd.) ..	27/5/97	9,548	4,856	4,500	9,458	1 0 0 103 19 6	100	174	12	26	98	9,469	..
Eureka Gold-dredging Co. (Ltd.)	19/9/99	4,500	1,500	3,000	4,500	1 0 0 30 10 0	..	54	7	24	82	1,717	..
Gold Creek Dredging Co. (Ltd.)	3/3/98	4,500	2,494	2,000	4,500	1 0 0 5 15 0	..	71	7	749	2,874	5,539	..
Sunrise Gold-mining Co. (No Liability) ..	14/10/97	2,273	2,273	5,000	19,035	0 5 0 2 10 0	945	50	..	..	..	2,338	..
Milestone Gold-dredging Co. (Ltd.)	7/10/99	5,500	3,429	980	5,500	0 18 0 75 5 0	..	74	5	..	..	4,865	..
Belmont Gold-dredging Co. (Ltd.)	8/6/98	10,000	3,338	2,390	10,000	16/ and 10/ 650 6 6	..	257	..	..	..	5,838	..
Jutland Flat (Waipori) Gold-mining Co. (Ltd.) ..	2/7/90	15,000	4,000	3,750	15,000	8/ and 15/ ..	..	67	11	9,139	35,649	24,976	9,375
Upper Waipori Alluvial Gold-dredging Co. (Ltd.)	3/9/89	4,000	5,950	5,000	4,800	0 8 6 ..	..	77	9	10,892	41,904	36,939	6,360
Inchdale Gold-dredging Co. (Ltd.)	8/2/00	5,500	2,400	1,500	7,000	0 18 0 2,550 0 0	..	102	..	..	..	1,905	..
Alexandra Bonanza Gold-dredging and Sluicing Co. (Ltd.)	5/9/99	27,000	4,916	3,000	21,393	10/ and 4/ 2,362 19 0	..	150	..	..	..	3,385	..
Lady Charlton Gold-dredging Co. (Ltd.) ..	12/2/00	11,000	6,160	2,000	13,000	0 13 0 2,090 5 0	475	290	..	..	..	5,310	..
Golden Mile Dredging Co. (Ltd.)	14/11/99	5,800	4,044	1,700	7,500	1 0 0 1,756 0 0	..	137	..	..	..	517	..
Gold King Dredging Co. (Ltd.)	22/1/00	8,000	4,540	2,500	10,500	0 16 0 1,859 11 0	..	194	1	..	..	3,376	..
Manuka Gold-dredging Co. (Ltd.)	23/11/00	8	8	3,992	..	1 0 0 ..	..	8	1	..	..	2	..
Morning Star Gold-dredging Co. (Ltd.) ..	1/8/99	2,000	1,988	3,500	5,500	1 0 0 12 10 0	..	86	7	689	2,654	4,450	..
Grey Duck Dredging Co. (Ltd.)	26/9/99	5,500	846	..	5,500	0 5 0 529 5 0	..	93	..	..	..	561	..
Electric Extended Gold-dredging Co. (Ltd.) ..	25/5/99	10,000	6,842	2,200	10,000	0 18 0 958 0 0	..	192	7	30	117	7,665	..
New Alexandra Gold-dredging Co. (Ltd.) ..	10/12/98	8,500	7,000	1,500	8,500	1 0 0 ..	..	159	8	354	1,353	9,759	..
Vincent Gold-dredging Co. (Ltd.)	13/9/97	5,500	4,800	700	5,500	1 0 0 ..	..	163	8	3,180	12,248	12,033	4,811
Richards' Beach Gold-dredging Co. (Ltd.) ..	19/5/99	11,000	8,895	2,000	11,000	1 0 0 105 5 0	..	253	8	75	288	9,344	..
Tuapeka Gorge Hydraulic Co. (Ltd.)	17/10/00	201	111	1,000	1,201	Various 11 5 0	..	23	4	4	14	152	..
Rise and Shine Gold-dredging Co. (Ltd.) ..	24/2/00	10,000	2,759	2,000	12,000	0 10 0 2,241 10 0	..	167	..	..	..	2,305	..
White Star Gold-dredging Co. (Ltd.)	16/10/99	5,000	4,860	1,500	6,500	1 0 0 140 0 0	..	94	..	..	..	1,486	..
Tacon's Cardrona Gold-dredging Co. (Ltd.) ..	27/9/99	4,750	4,332	1,250	6,000	1 0 0 417 13 0	..	112	..	..	..	2,633	..
Cardrona Lead Gold-dredging Co. (Ltd.) ..	29/3/00	5,000	448	1,500	5,000	0 2 0 52 8 0	..	69	..	..	..	444	..
Kelly and Casey Beach Dredging Co. (Ltd.) ..	15/9/99	7,300	6,763	2,200	9,500	1/ and 18/ 731 18 0	..	149	..	..	..	5,630	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*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 Shares forfeited.	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.
											Quantity.	Value.		
OTAGO DISTRICT—*continued.*														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Sheddon's Waikaka Freehold Gold-dredging Co. (Ltd.)	26/4/00	4,318	820	1,500	6,500	0 11 0	302 14 0	..	15	3	..	..	785	..
Alpha Gold-mining Co. (No Liability)	1/9/97	24,000	7,154	12,000	24,000	0 13 0	21 13 4	4,050	79	9	399	1,053	8,497	..
Pride of Tuapeka Gold-dredging Co. (Ltd.) ..	3/5/00	3,500	1,130	1,500	5,000	0 13 0	1,145 0 0	50	77	1	..	..	1,085	..
Blue Bell Gold-dredging Co. (Ltd.)	17/3/00	7,800	1,108	1,200	9,000	0 8 0	2,012 10 0	..	155	..	..	..	862	..
Royal Maori Gold-dredging Co. (Ltd.)	20/10/99	6,000	4,440	2,000	8,000	0 18 0	960 0 0	..	118	..	..	..	3,213	..
Gold Chair Gold-dredging Co. (Ltd.)	20/3/00	6,800	1,004	2,200	9,000	0 8 0	1,716 5 0	..	141	..	..	..	460	..
Horowai Dredging Co. (Ltd.)	2/2/00	6,500	758	1,500	6,460	0 4 0	534 5 0	50	105	..	..	..	454	..
Central Mataura Gold-dredging Co. (Ltd.) ..	30/6/00	20,000	4,002	..	20,000	Various	1,198 2 6	..	210	16	114	439	7,674	..
Golden Vein Gold-dredging Co. (Ltd.)	13/10/99	5,900	4,431	1,600	7,500	Various	878 15 0	..	132	..	..	..	3,603	..
Golden River Gold-dredging Co. (Ltd.)	7/8/99	6,400	5,886	1,600	32,000	Various	514 8 0	..	254	..	..	..	5,959	..
Davis Bend Dredging Co. (Ltd.)	1/5/00	8,500	1,249	..	8,500	Various	551 5 0	..	125	..	..	..	434	..
Cardrona No. 1 Gold-dredging Co. (Ltd.) ..	27/5/99	4,300	3,682	1,200	5,500	Various	617 15 0	..	86	..	..	..	3,088	..
Waimumu Extended Dredging Co. (Ltd.) ..	25/4/99	2,000	2,000	4,500	6,500	1 0 0	..	..	52	7	493	1,896	4,162	..
Voltaic Prospecting and Dredging Co. (Ltd.) ..	26/10/99	2,500	1,000	2,500	5,000	0 8 0	..	..	57	..	..	..	1,061	..
Fraser Flat Gold-dredging Co. (Ltd.)	10/3/99	10,000	9,078	3,000	13,000	Various	922 10 0	..	165	..	..	..	9,063	..
Dunstan Lead Gold-dredging Co. (Ltd.) ..	31/5/99	14,500	12,022	3,000	17,500	Various	727 15 0	..	201	..	..	..	9,632	..
Dunback Dredging Co. (Ltd.)	3/11/99	3,750	2,570	..	3,750	Various	1,180 10 0	..	95	..	..	..	2,319	..
Second Magnetic Gold-dredging Co. (Ltd.) ..	14/6/99	6,500	6,500	2,500	9,000	1 0 0	..	..	151	7	23	89	7,054	..
Number Two Matau Gold-dredging Co. (Ltd.) ..	25/7/99	10,000	995	..	12,000	0 2 0	5 0 0	..	132	..	..	..	903	..
Metallic Gold-dredging Co. (Ltd.)	19/6/99	6,000	5,996	1,500	7,500	1 0 0	4 10 0	..	181	..	..	..	6,301	..
Blue Duck Gold-dredging Co. (Ltd.)	18/7/99	5,500	5,344	1,500	7,000	Various	156 10 0	..	128	..	..	..	5,887	..
Bannockburn Creek Dredging Co. (Ltd.) ..	18/7/99	8,000	7,464	2,000	10,000	Various	535 16 0	..	142	..	..	..	7,135	..
Alexandra Lead Gold-dredging Co. (Ltd.) ..	26/7/99	11,000	10,650	3,000	14,000	Various	350 10 0	..	192	..	..	..	6,042	..
Smith's Creek and Bannockburn Deep Lead Dredging Co. (Ltd.)	21/7/99	10,000	7,672	2,000	12,000	Various	328 0 0	..	172	..	..	..	7,529	..
Sailor's Bend Dredging Co. (Ltd.)	1/9/99	6,500	6,476	1,500	8,000	1 0 0	24 10 0	..	174	..	..	..	6,349	..
Shepherd's Creek Gold-dredging Co. (Ltd.) ..	11/8/99	3,500	3,473	1,500	5,000	1 0 0	27 10 0	..	76	..	..	..	3,478	..
Gold Queen Dredging Co. (Ltd.)	3/2/99	7,000	6,956	2,000	9,000	1 0 0	44 10 0	30	275	8	372	1,429	8,135	..
Day Dawn Gold-dredging Co. (Ltd.)	25/4/00	5,000	358	1,600	6,600	0 4 0	643 0 0	..	92	..	..	..	355	..
Otama Gold-dredging Co. (Ltd.)	18/1/00	5,000	3,780	2,000	7,000	0 18 0	777 17 6	..	116	7	..	..	3,838	..
Willoughby Cardrona Dredging Co. (Ltd.) ..	28/3/00	5,000	980	..	6,500	0 8 0	1,020 10 0	..	100	..	..	..	930	..
First Chance Gold-dredging Co. (Ltd.)	20/7/99	7,500	7,053	4,500	10,500	1 0 0	447 8 0	..	202	..	4	17	6,531	..
Alpine Consols Dredging Co. (Ltd.)	19/5/99	7,500	5,500	2,000	7,500	1 0 0	..	..	162	8	..	..	6,481	..
Central Electric Gold-dredging Co. (Ltd.) ..	8/5/99	6,000	6,000	1,000	7,000	1 0 0	..	..	236	8	63	235	7,544	..
New Zealand Dredging and Exploration Co. (No Liability)	28/6/00	2,500	1,750	..	25,000	1 8 7	237 10 0	..	60	..	..	..	1,722	..
Oceanic Steam Gold-dredging Co. (Ltd.) ..	5/3/00	5,000	1,906	2,000	7,000	Various	844 5 6	..	92	..	..	..	1,820	..
Celtic Gold-dredging Co. (Ltd.)	21/11/99	3,000	2,567	1,000	4,000	1 0 0	433 0 0	..	27	1	..	..	1,950	..
Prince Albert Gold-dredging Co. (Ltd.) ..	22/1/00	6,000	2,992	2,000	8,000	Various	1,232 17 6	..	139	..	..	..	1,651	..
Eclipse Gold-dredging Co. (Ltd.)	4/8/99	6,000	6,000	1,500	7,500	1 0 0	..	..	128	..	..	..	5,206	..
Harris Beach Gold-dredging Co. (Ltd.) ..	19/9/99	5,500	1,391	1,500	7,000	0 6 0	260 0 0	..	131	..	..	..	459	..
Woolshed Gold-dredging Co. (Ltd.)	21/6/00	4,400	..	4,400	4,400	1 0 0	..	..	11		81	1,112	1,212	440
Digger's Pride Gold-dredging Co. (Ltd.) ..	13/2/00	7,320	1,487	..	7,320	0 5 0	281 15 0	..	172	..	2	8	794	..

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*continued.*

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											Quantity.	Value.		
OTAGO DISTRICT—*continued.*														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Electric Gold-dredging Co. (Ltd.)	2/9/99	26,000	10	25,990	26,000	1 0 0	..	..	300	9	6,725	26,546	5,389	20,800
Moonlight Sluicing Co. (Ltd.)..	14/5/94	2,000	1,356	450	2,000	0 17 6	..	..	26	3	958	3,693	4,670	1,100
Main Lead Hercules Gold-dredging Co. (Ltd.) ..	3/1/00	7,700	3,031	1,800	9,500	0 12 0	1,589 10 0	..	151	..	..	..	2,843	..
Long Valley Gold-dredging Co. (Ltd.)	31/8/99	7,000	5,913	2,000	9,000	0 18 0	487 0 0	..	118	..	..	..	5,204	..
Molyneux Kohinoor Dredging Co. (Ltd.) ..	27/1/00	7,000	656	..	7,000	0 2 0	43 15 0	..	160	..	..	..	484	..
Gibbs' Beach Gold-dredging Co. (Ltd.).. ..	28/9/99	6,400	5,837	2,100	8,500	1 0 0	563 10 0	..	130	..	..	..	5,408	..
Charlton Creek Gold-dredging Co. (Ltd.) ..	5/5/99	4,000	4,000	1,000	5,000	1 0 0	..	..	91	9	1,096	4,247	7,989	1,375
Union Jack Gold-dredging Co. (Ltd.)	8/2/00	6,700	732	..	6,700	0 5 0	942 11 0	..	107	1	..	..	617	..
Lioness Gold-dredging Co. (Ltd.)	22/1/00	6,600	999	..	6,600	0 5 0	650 10 6	..	123	1	..	..	665	..
Prince Imperial Gold-dredging Co. (Ltd.) ..	17/1/00	6,700	980	..	6,700	0 5 0	694 18 0	..	115	1	..	..	687	..
Vulcan Gold-dredging Co. (Ltd.)	19/2/00	6,800	1,699	..	6,800	0 10 0	1,701 1 6	..	132	1	..	..	543	..
Otago Syndicate (Ltd.)	12/8/96	20,000	20,000	..	20,000	1 0 0	..	..	43	..	..	..	10,503	..
Winding Creek Gold-mining Co. (Ltd.).. ..	5/2/98	14,167	8,000	6,167	14,167	1 0 0	..	..	20	12	1,148	4,498	15,335	..
Morven Ferry Gold-dredging Co. (Ltd.) ..	11/1/00	7,000	2,741	..	9,000	0 18 0	3,108 15 0	..	109	..	..	..	2,739	..
Upper Magnetic Gold-dredging Co. (Ltd.) ..	31/8/99	6,400	6,400	1,600	8,000	1 0 0	..	50	191	..	..	..	6,761	..
Vincent Extended Gold-dredging Co. (Ltd.) ..	30/6/99	7,325	7,325	1,500	8,825	1 0 0	..	..	207	8	..	..	8,394	..
Gibbston Gold-dredging Co. (Ltd.)	19/9/99	6,400	3,888	1,600	6,400	0 16 0	1,232 10 0	..	129	..	..	..	2,276	..
Golden Glen Dredging Co. (Ltd.)	23/2/00	10,000	3,115	2,000	12,000	0 13 0	3,384 19 0	..	165	..	..	..	2,969	..
Alpine No. 2 Gold-dredging Co. (Ltd.)	1/5/99	4,800	4,800	700	5,500	1 0 0	..	..	111	6	..	..	6,221	..
Halfway House Dredging Co. (Ltd.)	29/5/99	5,500	5,420	2,000	7,500	1 0 0	80 10 0	..	182	..	..	..	5,486	..
Great Central Dredging Co. (Ltd.)	24/8/99	6,000	5,441	2,000	8,000	1 0 0	559 10 0	..	126	..	..	..	4,683	..
Paul's Beach Gold-dredging Co. (Ltd.).. ..	29/11/99	6,000	2,573	..	7,500	0 14 0	1,627 10 0	..	115	6	52	196	2,490	..
Upper Clutha Gold-dredging Co. (Ltd.) ..	6/10/99	4,725	1,662	1,600	4,725	0 12 0	1,192 5 0	..	89	..	..	..	1,720	..
Fraser Basin Hydraulic Elevating Co. (Ltd.) ..	30/6/99	1,613	1,088	488	2,100	0 15 0	..	..	35	9	..	..	1,485	..
Horse Shoe Bend Gold-dredging Co. (Ltd.) ..	24/1/00	6,000	1,831	2,000	8,000	0 14 0	2,383 18 0	..	143	..	..	..	1,589	..
Central Magnetic Dredging Co. (Ltd.).. ..	28/6/00	5,000	580	..	5,000	0 2 6	45 0 0	..	84	..	..	..	517	..
British Lion Gold-dredging Co. (Ltd.)	25/1/00	6,000	1,807	1,500	7,500	0 12 6	1,942 12 6	..	122	..	..	..	1,790	..
Gunton's Beach Gold-dredging Co. (Ltd.) ..	1/3/00	7,000	1,977	2,000	9,000	0 8 0	825 15 0	..	129	..	..	..	899	..
Garvey Burn Dredging Co. (Ltd.)	12/4/00	4,600	2,515	1,400	6,000	0 18 0	1,625 4 11	..	49	..	..	..	2,442	..
Dome Creek Gold-dredging Co. (Ltd.)	12/9/99	4,000	3,926	1,250	5,250	Various	73 15 0	..	62	7	..	..	3,765	..
Pioneer Eureka Gold-dredging Co. (Ltd.) ..	10/4/00	2,000	1,400	6,000	8,000	0 17 0	280 0 0	..	22	5	..	..	1,350	..
Riley's Beach Gold-dredging Co. (Ltd.) ..	4/3/99	4,500	1,000	3,500	4,500	1 0 0	..	..	32	7	..	1,791	115	1,723
Alpine Gold-dredging Co. (Ltd.)	27/7/99	6,000	3,500	2,500	6,000	1 0 0	..	..	14	..	..	2,322	1,607	600
Moke Creek Dredging Co. (Ltd.)	23/2/00	6,000	1,380	2,000	8,000	0 10 0	1,637 5 0	..	125	..	..	..	1,180	..
Moonlight No. 2 Sluicing Co. (Ltd.)	1/6/98	8,960	7,976	2,500	11,460	Various	984 0 0	..	108	26	..	..	8,686	..
Fourteen-mile Beach Gold-dredging Co. (Ltd.) ..	25/10/98	14,940	12,340	2,600	14,940	1 0 0	..	..	200	14	..	..	12,427	..
Premier No. 1 Gold-dredging Co. (Ltd.) ..	7/11/99	4,500	3,122	..	4,500	0 16 0	501 0 0	..	87	..	..	..	3,016	..
Naumai Gold-dredging Co. (Ltd.)	8/4/99	8,000	7,123	2,000	10,000	1 0 0	577 4 0	..	90	1	..	..	7,828	..
Golden Chain Dredging Co. (Ltd.)	26/9/99	8,000	4,155	2,000	8,000	0 16 0	2,245 0 0	..	144	..	..	..	1,497	..
Endeavour Gold-dredging Co. (Ltd.)	29/8/99	8,000	7,556	2,000	10,000	1 0 0	444 0 0	..	189	..	..	..	5,416	..
Roxburgh Lead Gold-dredging Co. (Ltd.) ..	15/2/00	9,000	1,348	2,000	9,000	0 6 0	..	..	141	..	..	..	597	..
Excelsior Gold-dredging Co. (Ltd.)	23/9/99	7,000	5,670	2,000	9,000	1 0 0	1,330 10 0	..	119	..	..	..	4,297	..
Phœnix Water-race Co. (Registered)	12/10/67	1,500	1,500	..	1,000	1 10 0	..	..	17	..	..	..	..	6,650
Maori Gold-dredging Co. (Ltd.)	26/9/99	5,000	4,375	300	5,300	0 17 6	21 5 0	..	11	8	669	2,577	4,133	..

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											Quantity.	Value.		
OTAGO DISTRICT—*continued.*														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Charlton Valley Gold-dredging Co. (Ltd.) ..	6/4/00	5,000	1,807	1,000	6,000	0 12 0	1,192 15 0	..	103	..	..	..	1,390	..
Kia Ora Gold-dredging Co. (Ltd.)	21/9/99	5,900	4,810	1,600	7,500	1 0 0	1,089 13 0	..	134	..	..	..	4,362	..
Central Charlton Dredging Co. (Ltd.)	8/12/99	5,300	5,224	1,700	7,000	1 0 0	76 0 0	..	138	7	32	128	5,244	..
Upper Fraser Gold-dredging Co. (Ltd.) ..	6/2/00	9,400	753	1,600	11,000	0 2 0	187 10 0	..	82	..	..	..	734	..
Shotover Gold-dredging Co. (Ltd.)	11/9/99	5,400	3,066	1,600	7,000	0 13 0	443 15 0	..	127	1	144	539	3,724	..
Golden Falls Dredging Co. (Ltd.)	11/9/99	6,400	6,349	1,000	7,400	1 0 0	50 19 0	..	117	..	..	..	6,352	..
Happy Valley Gold-dredging Co. (Ltd.) ..	24/2/00	5,050	2,849	2,450	7,500	0 19 0	1,949 0 0	..	91	..	..	..	2,830	..
Great Beach Gold-dredging Co.	17/1/00	6,500	1,248	2,000	6,500	0 6 0	701 15 0	..	125	..	..	..	639	..
Criffel Lead Dredging Co. (Ltd.)	12/2/00	5,300	886	..	5,300	0 5 0	439 7 6	..	123	..	..	..	462	..
Arthur's Point Gold-dredging Co. (Ltd.) ..	3/11/99	6,675	5,839	1,800	6,675	1 0 0	836 7 0	..	142	..	..	..	7,004	..
Sixteen-mile Beach (Molyneux) Dredging Co. (Ltd.)	9/10/99	6,500	5,962	2,000	6,500	1 0 0	538 0 0	..	149	..	..	..	5,872	..
Gold Deposit Dredging Co. (Ltd.)	14/12/99	6,800	3,972	1,800	6,800	0 18 6	2,317 15 0	..	162	..	..	..	3,819	..
Dart River Gold-dredging and Prospecting Co. (Ltd.)	19/10/99	20,000	4,014	..	20,000	0 5 0	986 4 0	..	206	..	..	..	3,521	..
Lion Gold-mining Co. (Ltd.)	15/12/97	15,652	12,774	3,500	15,652	£1 and 6/	3 0 0	..	80	16	..	..	11,868	..
Nokomai Victory Gold mining Co. (Ltd.) ..	2/11/99	2,000	834	5,000	2,000	15/ and 5/	166 0 0	..	6	3	..	..	387	..
Broad Creek Gold-dredging Co. (Ltd.)	2/3/00	5,400	1,917	1,600	7,000	0 10 6	917 15 0	..	114	..	..	..	1,438	..
Scotia Gold-dredging Co. (Ltd.)	23/2/00	5,950	699	1,550	7,500	Various	342 10 0	..	177	..	..	..	670	..
Waitahuna Cinnabar Co. (Ltd.)	3/8/00	1,500	356	..	1,500	0 6 0	94 2 6	..	53	..	..	..	347	..
Mystery Flat Gold-dredging Co. (Ltd.) ..	16/7/00	5,400	863	..	5,400	0 5 0	486 15 0	..	105	..	..	..	332	..
Robertson's Gold-dredging Co. (Cardrona) (Ltd.)	9/3/00	4,905	1,273	..	4,905	0 11 6	2,820 7 6	..	107	..	..	..	1,268	..
Grogan's Point Gold-dredging Co. (Cardrona) (Ltd.)	2/4/00	5,000	261	..	5,000	0 3 0	489 0 0	..	71	..	..	..	251	..
Manorburn Gold-dredging Co. (Ltd.)	28/1/96	3,000	3,000	..	3,000	1 0 0	..	..	7	7	3,492	13,637	14,852	2,250
Enterprise Hydraulic Sluicing Co. (Ltd.) ..	7/2/98	2,000	..	1,700	2,000	0 17 0	..	..	12	3	321	1,222	1,065	200
Ladysmith Gold-dredging Co. (Ltd.)	19/4/00	12,000	2,810	3,000	11,500	0 8 0	1,790 5 0	..	153	5	39	148	2,802	..
Ettrick Gold Steam-dredging Co. (Ltd.) ..	29/8/90	9,000	4,404	2,000	10,500	Various	1,483 1 0	..	133	..	4,667	17,963	18,803	3,150
Golden Run Dredging Co. (Ltd.)	29/6/91	9,000	8,865	1,600	10,988	1 0 0	122 12 6	685	135	14	6,760	26,026	31,994	5,194
Golden Treasure Dredging Co. (Ltd.)	11/7/93	1,500	1,384	1,500	3,000	1 0 0	..	124	45	6	7,526	28,974	17,935	12,942
Golden Gate Dredging Co. (Ltd.)	13/3/95	2,500	2,500	..	2,500	1 0 0	..	..	54	6	6,547	25,206	16,232	11,125
Switzers Gold-dredging Co. (Ltd.)	24/2/00	2,175	840	1,500	3,675	0 14 0	791 5 0	..	52	..	..	..	811	..
Globe Gold-dredging Co. (Ltd.)	3/2/00	2,750	2,107	700	3,450	1 0 0	643 10 0	..	47	7	..	..	2,018	..
Arrow Falls Gold-mining Co. (Ltd.)	4/4/98	30,000	1,750	27,750	30,000	20/and 19/	..	..	33	..	160	619	2,627	..
Two Creeks Gold-dredging Co. (Ltd.)	16/6/00	4,165	242	2,400	4,165	0 4 0	111 10 0	..	43	..	..	..	80	..
Extended Fourteen-mile Beach Gold-dredging Co. (Ltd.)	16/5/00	8,500	597	..	8,500	Various	253 2 0	..	73	1	..	..	366	..
Golden Molyneux Gold-dredging Co. (Ltd.) ..	19/1/00	6,500	1,600	2,000	8,500	0 5 6	675 10 0	..	145	1	..	..	490	..
Britannia Gold-dredging Co. (Ltd.)	16/3/00	8,000	1,368	..	8,000	0 8 0	2,431 17 6	..	205	..	..	..	562	..
Last Chance Hydraulic Sluicing, Elevating, and Dredging Co. (Ltd.)	27/7/99	12,000	4,355	3,300	12,000	0 14 0	1,735 10 0	..	139	9	335	1,370	1,362	..
Remarkables Gold-dredging Co. (Ltd.)	27/9/99	3,900	3,477	800	3,900	1 0 0	423 10 0	..	61	..	..	..	3,621	..
Alexandra Eureka Gold-dredging Co. (Ltd.) ..	14/11/99	12,000	..	12,000	12,000	1 0 0	..	..	11	8	1,623	6,260	3,398	2,700
Waimumu Gold-dredging Co. (Ltd.)	20/11/97	6,000	6,000	1,000	7,000	1 0 0	..	..	80	9	1,529	5,961	11,082	1,050

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*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 Shares forfeited.	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
											Quantity.	Value.		
OTAGO DISTRICT—*continued.*														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Manuherikia Gold-dredging Co. (Ltd.) ..	1/8/99	12,000	5,962	6,000	12,000	1 0 0	37 14 0	..	159	9	941	3,546	10,363	..
Galvanic Gold-dredging Co. (Ltd.)	22/6/99	6,000	5,933	1,500	7,500	1 0 0	67 10 0	..	152	..	..	..	5,755	..
Golden Link Dredging Co. (Ltd.)	10/7/99	5,800	5,575	1,200	7,000	1 0 0	225 0 0	..	131	..	..	..	5,299	..
Dunedin Gold-dredging Co. (Ltd.)	1/9/81	8,700	7,861	..	8,700	0 19 7	657 15 9	..	125	..	16,966	65,308	50,616	15,270
Moa Flat Dredging Co. (Ltd.)	26/4/99	8,244	7,979	2,000	10,244	1 0 0	155 15 0	..	172	..	..	..	6,919	..
Boundary Creek Gold-dredging Co. (Ltd.) ..	7/9/99	6,000	4,955	2,000	8,000	1 0 0	1,045 10 0	..	173	..	..	..	4,917	..
Golden Horseshoe Dredging Co. (Ltd.).. ..	16/1/00	8,000	3,936	..	8,000	0 15 0	2,064 0 0	..	132	..	..	..	1,899	..
Inchholme Gold-dredging Co. (Ltd.)	7/3/00	5,200	4,681	1,300	5,200	1 0 0	519 0 0	..	75	7	61	229	4,407	..
MacCharlton Gold-dredging Co. (Ltd.) ..	3/12/00	6,000	318	..	6,000	Various	282 10 0	..	47	..	..	..	225	..
Enfield Gold-dredging Co. (Ltd.)	31/10/99	5,000	4,712	2,000	7,000	1 0 0	287 16 0	..	60	10	..	..	4,719	..
United Morven Gold-dredging Co. (Ltd.) ..	18/1/00	6,145	1,728	2,000	6,145	0 12 0	1,959 3 6	..	113	..	..	..	1,274	..
Pride of Waikaka Gold-dredging Co. (Ltd.) ..	25/6/00	4,650	713	..	4,650	Various	1,146 15 0	..	72	..	..	..	485	..
Royal Waimumu Gold-dredging Co. (Ltd.) ..	6/10/00	5,500	610	..	5,500	Various	490 0 0	..	60	..	..	..	225	..
Cairntrodlie Gold-dredging Co. (Ltd.)	27/3/00	4,000	650	..	4,000	Various	150 0 0	..	66	..	..	..	217	..
Waikaka Gold-dredging Co. (Ltd.)	9/5/00	4,900	1,686	..	6,500	Various	1,253 15 0	..	63	..	..	..	563	..
Waimumu Queen Dredging Co. (Ltd.).. ..	21/6/99	5,200	4,344	1,800	7,000	Various	76 5 0	..	51	9	..	1,648	5,460	..
Waikaka Queen Gold-dredging Co. (Ltd.) ..	6/7/99	4,510	3,092	1,050	4,510	Various	78 0 0	..	119	3	..	..	4,394	..
Golden Site Extended Gold-mining Co. (Ltd.) ..	11/2/97	57,828	8,717	43,750	57,828	0 18 5	31 13 4	28,029	99	..	406	1,578	10,251	..
Morning Star Gold-mining Co. (No Liability) ..	26/1/95	30,503	6,563	12,000	30,503	..	49 9 0	170	140	13	12,526	50,909	45,330	11,463
Shotover Quartz-mining Co. (No Liability) ..	9/3/98	6,000	3,678	1,500	24,000	0 4 4½	72 7 3	..	33	8	..	..	3,642	..
Maerewhenua Gold-dredging Co. (Ltd.) ..	27/11/99	5,450	4,303	..	5,450	1 0 0	1,147 10 0	..	112	5	..	..	5,476	..
Gentle Annie Gold-dredging Co. (Ltd.) ..	4/10/99	6,900	5,873	1,600	8,500	0 17 0	192 7 6	..	171	..	..	..	4,671	..
Grand Junction Gold-dredging Co. (Ltd.) ..	18/1/00	6,900	3,346	1,600	8,500	0 9 6	167 6 0	..	134	..	..	..	1,858	..
Victoria-Waimumu Gold-dredging Co. (Ltd.) ..	7/9/00	4,065	529	..	4,065	Various	487 13 0	..	53	..	..	..	223	..
Golden Elbow Dredging Co. (Ltd.)	8/11/99	6,500	3,393	2,000	8,500	0 16 0	1,157 10 0	..	138	..	..	..	1,812	..
Nokomai Hydraulic Sluicing Co. (Ltd.) ..	26/3/98	21,000	4,000	17,000	2,100	10 0 0	..	..	25	36	4,159	15,930	12,808	6,710
Spec Gully Gold-dredging Co. (Ltd.)	28/6/99	3,000	3,000	1,000	4,000	1 0 0	..	..	63	..	64	248	3,052	..
Gothic Gold-dredging Co. (Ltd.)	6/3/00	10,290	1,813	..	10,290	Various	1,273 15 0	..	131	..	..	..	1,909	..
Old Dunstan Gold-dredging Co. (Ltd.).. ..	17/10/99	6,500	3,056	2,000	8,500	..	844 0 0	..	134	..	..	..	2,156	..
Nevis Gold-dredging Co. (Ltd.)	2/8/00	4,500	4,409	..	4,500	1 0 0	91 10 0	..	70	6	1,164	4,482	8,688	..
Cromwell Gold-dredging Co. (Ltd.)	10/10/98	5,300	5,300	1,700	5,300	1 0 0	..	..	158	8	1,542	5,952	8,599	2,621
Bonanza Gold-dredging Co. (Ltd.)	20/2/00	6,350	782	..	6,350	0 3 6	328 16 6	..	127	..	..	..	405	..
Arrow Junction Gold-dredging Co. (Ltd.) ..	7/10/99	6,500	6,472	2,000	6,500	1 0 0	27 16 0	..	139	..	..	..	6,022	..
Otago Gold-dredging Co. (Ltd.)	20/5/95	4,000	2,000	2,000	4,000	1 0 0	..	..	48	7	4,300	16,754	12,014	5,500
Dunstan Pioneer Investment Gold-dredging Co. (Ltd.)	24/6/99	5,760	1,658	..	5,760	8/ and 2/	473 19 0	..	139	..	..	..	614	..
Bald Hill Flat Freehold Dredging Co. (Ltd.) ..	20/7/99	8,930	6,914	..	8,930	0 19 0	1,569 3 4	..	164	..	..	..	6,750	..
Gleniti Gold-dredging Co. (Ltd.)	28/10/99	2,300	2,091	2,200	4,500	1 0 0	209 5 0	..	36	8	49	188	1,797	..
Big Beach Hydraulic Sluicing Co. (Ltd.) ..	3/10/99	1,000	375	..	1,350	0 10 0	99 10 0	..	22	6	42	162	885	..
Lafranchi's Freehold Gold-dredging Co. (Ltd.) ..	15/3/00	8,000	1,813	4,000	8,000	0 6 0	587 0 0	..	155	..	..	..	1,603	..
Triumph Gold-dredging Co. (Ltd.)	3/4/00	6,000	1,050	..	6,000	0 3 6	286 12 6	..	121	..	..	..	163	..
Teviot Gold-dredging Co. (Ltd.)	4/1/00	8,000	5,159	2,000	10,000	1 0 0	2,841 5 0	..	177	..	..	..	4,982	..
Manorburn Lead Dredging Co. (Ltd.)	24/2/00	9,000	1,354	1,600	9,000	0 8 0	1,606 0 0	..	118	..	..	..	428	..
Post-office Creek (Waipori) Gold-mining Co. (Ltd.)	10/6/98	2,500	2,300	200	2,500	1 0 0	..	..	33	4	..	893	3,060	..
Bendigo Gold-dredging Co. (Ltd.)	9/10/99	11,000	5,145	2,500	11,000	0 16 0	1,665 0 0	..	201	..	..	..	486	..
Olrig Dredging Co. (Ltd.)	13/3/99	7,000	5,330	1,500	7,000	1 0 0	170 3 4	..	118	7	209	805	1,313	..
River Molyneux Gold-dredging Co. (Ltd.) ..	14/10/99	11,000	5,042	2,000	11,000	0 16 0	2,161 0 0	..	182	..	..	..	620	..
Rolling Stone Gold-dredging Co. (Ltd.) ..	13/6/99	3,271	3,054	1,000	3,271	Various	217 10 0	..	23	7	63	226	4,845	..
Lady Roxburgh Gold-dredging Co. (Ltd.) ..	3/3/00	9,000	2,067	2,000	11,000	Various	2,883 0 0	..	185	..	..	..	556	..
Lady Cordrona Dredging Co. (Ltd.)	19/2/00	5,000	2,448	2,000	7,000	Various	1,802 0 0	..	91	..	..	..	2,250	..
Pleasant Valley Gold-mining Co. (Ltd.) ..	4/3/95	700	630	300	1,000	0 18 0	..	..	30	6	1,634	6,292	4,805	1,514

STATEMENT of AFFAIRS of MINING COMPANIES, as published in accordance with the Mining Companies Acts, 1891 and 1894—*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 Shares forfeited.	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.
											Quantity.	Value.		
OTAGO DISTRICT— *continued*.														
		£	£	£		£ s. d.	£ s. d.				Oz.	£	£	£
Molyneux Hydraulic Dredging Co. (Ltd.) ..	25/5/00	5,896	5,896	..	5,896	1 0 0	..	..	97	7	762	2,941	3,662	..
Perseverance Gold-dredging Co. (Ltd.) ..	19/4/99	14,000	8,616	6,000	14,000	Various	623 15 0	..	104	8	2,297	8,854	11,967	4,200
Enterprise Water Race Co. (Regd.)	7/2/67	4,800	4,800	..	16	£300	..	..	7	3	6,968	26,502	26,913	13,581
Round Hill Mining Co. (Ltd.)..	30/7/92	28,225	6,753	21,472	5,649	5 0 0	..	..	180	30	12,605	49,789	68,660	..
Point d'or Gold-dredging Co. (Ltd.)	26/3/00	11,200	1,388	2,200	11,200	0 8 0	2,212 10 0	..	153	..	..	..	697	..
Island Block Gold dredging and Sluicing Co. (Ltd.)	26/2/00	25,000	6,377	12,000	25,000	0 12 0	1,435 0 0	..	74	13	38	149	843	..
Bakery Flat Sluicing Co. (Ltd.)	10/9/96	2,500	1,763	300	2,500	0 16 6	..	..	28	14	1,468	5,590	6,359	688
Skipper's Sluicing Co. (Ltd.)	30/7/97	3,952	3,952	..	3,952	1 0 0	..	..	24	5	337	1,274	5,362	..
Inch Valley Gold-dredging Co. (Ltd.)	15/9/98	2,600	2,600	2,400	5,000	1 0 0	..	..	71	7	1,205	4,639	7,104	1,250
Chatto Creek Dredging Co. (Ltd.)	12/8/97	5,000	4,400	600	5,000	1 0 0	..	..	91	9	1,378	5,373	10,761	..
Golden Point Dredging Company (Ltd.) ..	31/8/97	5,400	5,400	600	6,000	1 0 0	..	..	124	..	1,458	5,650	12,480	..
Earnscleugh No. 3 Dredging and Electric Power Co. (Ltd.)	10/3/99	19,585	14,320	3,500	19,585	0 16 0	1,347 16 0	..	142	..	..	..	15,903	..
Coal Creek Flat Dredging Co. (Ltd.)	18/9/99	7,000	4,774	2,000	9,000	0 17 0	1,175 12 6	..	182	..	..	..	5,051	..
Enterprise Gold-dredging Co. (No Liability) ..	24/8/91	3,500	3,500	..	3,500	1 0 0	..	..	154	14	6,758	26,021	19,858	6,900
Malone's Beach Dredging Co. (Ltd.)	3/4/00	9,000	1,305	2,000	11,000	0 8 0	2,294 14 0	..	121	1	..	..	538	..
Golden Bed Dredging Co. (Ltd.)	5/5/99	8,000	8,000	2,000	10,000	1 0 0	..	75	196	8	..	..	987	..
Golden Beach Hydraulic Elevating and Dredging Co. (Ltd.)	20/8/97	6,000	5,998	7,000	12,996	1 0 0	2 10 0	125	133	12	4,790	18,322	8,962	6,175
Miller's Flat Electric Dredging Co. (Ltd.) ..	20/12/98	3,250	3,250	1,750	5,000	1 0 0	..	..	63	8	7	25	2,580	..
Nugget Gold-dredging Co. (Ltd.)	11/3/99	4,775	3,843	1,500	6,275	20/and 7/6	135 0 0	..	82	1	43	166	1,533	..
Great Western Gold-dredging Co. (Ltd.) ..	16/2/99	3,475	3,104	1,200	4,675	1 0 0	371 5 0	..	89	1	..	..	941	..
Bucklerburn Gold-dredging Co. (Ltd.)	7/3/00	4,170	367	..	4,170	0 4 0	467 0 0	..	53	1	..	..	239	..
Butterfly Gold-dredging Co. (Ltd.)	1/3/00	3,457	220	1,500	4,957	20/ and 2/	125 9 0	..	56	1	..	..	206	..
Waikaka United Gold-dredging Co. (Ltd.) ..	11/2/98	4,700	4,275	6,500	11,200	1 0 0	425 0 0	..	17	8	..	1,256	4,770	..
Sandy Point Gold-dredging Co. (Ltd.)	31/10/99	7,000	7,000	700	7,700	1 0 0	..	..	14	8	..	1,416	15,434	..
Waitahuna Gully Gold-dredging Co. (Ltd.) ..	16/2/00	3,900	2,790	600	4,500	0 18 0	946 14 0	..	67	..	..	..	2,939	..
Canadian Flat Hydraulic Sluicing and Electrical-power Transmission Co. (Ltd.)	5/7/00	4,375	649	2,000	6,375	0 8 0	1,100 15 0	..	75	10	..	..	606	..
Rowallan Gold-mining Co. (Ltd.)	25/8/99	5,000	587	4,000	5,000	2/6 & 2/4	37 17 6	..	9	..	17	62	796	..
South Island Prospecting Co.	16/6/00	2,500	1,034	2,500	5,000	0 10 0	215 12 6	..	42	3	..	..	1,086	..
The Smith Gold-mining Co. (Ltd.)	19/10/98	1,700	1,200	300	2,000	1 0 0	..	..	17	4	311	1,229	2,625	..
Cromwell Proprietary Gold-mining Co. (Ltd.) ..	22/12/97	100,000	..	..	..	..	..	..	..	..	4,815	18,402	..	..
Cairnmuir Gold-dredging Co. (Ltd.)	5/8/99	6,650	6,311	1,350	8,000	..	339 0 0	..	176	..	..	..	6,098	..
Sealers Creek Gold-dredging Co. (Ltd.) ..	20/9/98	3,222	779	1,165	3,222	0 18 0	133 14 3	..	60	..	..	..	1,821	..
Waimumu Central Dredging Co. (Ltd.) ..	16/5/99	4,500	4,495	..	7,000	1 0 0	5 0 0	..	84	9	642	2,445	5,151	1,400
Mount Buster Mining Co. (Ltd.)	20/4/96	6,480	..	4,320	216	20 0 0	..	..	13	5	1,360	5,236	2,048	3,456
Waipori Consolidated Gold-dredges (No Liability)	22/3/99	2,275	2,275	225	2,500	1 0 0	..	..	7	7	622	2,339	4,759	..
Golden Ripple Gold-dredging Co. (Ltd.) ..	28/2/00	8,200	1,304	..	10,000	0 5 0	745 12 6	..	175	..	..	..	1,122	..
Undaunted Gold-mining Company (Ltd.) ..	1/3/98	15,000	15,000	..	1,500	10 0 0	..	..	..	..	..	..	..	3,750
Record Reign Gold-dredging Company (Ltd.) ..	20/12/98	2,160	1,950	2,040	4,200	0 10 3	207 0 0	..	11	7	..	1,388	4,427	..
Waiora Gold-dredging Co. (Ltd.)	7/2/00	6,350	2,998	1,650	8,000	20/and 16/	2,082 5 0	..	163	..	..	..	2,018	..
Waipori King Gold-dredging Co. (Ltd.) ..	10/7/00	5,000	310	..	5,000	Various	189 15 0	..	104	..	..	..	260	..
Prince Arthur Gold-dredging Co. (Ltd.) ..	13/2/00	6,000	351	..	8,000	Various	849 10 0	..	103	..	..	..	358	..
Royal Charlton Gold-dredging Co. (Ltd.) ..	31/10/00	5,400	379	..	5,400	Various	161 5 0	..	63	..	..	..	..	..
Totals	..	2,345,251	1189474	738,469	2,975,740	..	180,927 1 4	39,313	33,371	1,135	298,778	1,174,695	1,794,296	360,720
Grand Totals	..	5,431,473	2259844	1,820,956	10,010,074	..	292,874 5 4	992,976	82,801	2,576	627,246	2,322,558	3,752,758	733,424

STATEMENT of AFFAIRS of MINING COMPANIES, as defined by Section 2 of "The Mining Companies Acts Amendment Act, 1897," and published in accordance with "The Mining Companies Acts Amendment Act, 1897."

Name of Company.	Date of Registration of Office in Colony.	Subscribed Capital.	Amount of Capital actually paid up in Colony.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares on Colonial Register.	Amount paid up per share: Colonial Register.	Arrears of Calls: Colonial Register.	Number of Shares forfeited: Colonial Register.	Number of Shareholders on Colonial Register.	Number of Men employed in Colony.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid in Colony.
											Quantity.	Value.		
AUCKLAND DISTRICT.														
		£	£	£	£	£ s. d.	£ s. d.				Oz.	£	£	£
Waitekauri Gold-mining Co. (Ltd.)	6/5/95	228,076	4,390	..	13,598	1 0 0	..	..	90	265	264,068	263,261	329,735	4,741
New Zealand Crown Mines Co. (Ltd.)	27/6/96	200,000	..	100,000	30,066	1 0 0	..	..	107	240	102,684	242,698	260,235	1,936
Royal Oak of Hauraki (Ltd.)	28/3/95	249,791	..	50,000	2,275	1 5 0	..	..	3	40	17,135	43,695	63,469	..
Karaka (Ltd.)	–/5/97	..	..	..	..	1 0 0	..	..	..	..	..	173	7,196	..
Mahara Royal (Ltd.)	–/3/97	..	..	..	26,624	1 0 0	..	..	155	7	..	11,574	26,198	..
Thames Hauraki Goldfields (Ltd.)	6/6/96	275,000	..	..	..	1 0 0	..	..	..	13	..	81	130,177	..
Ohinemuri Syndicate (Ltd.)	4/3/96	51,918	2,253	20,000	20,201	1 0 0	..	..	282	5	..	..	25,555	..
Union-Waihi Gold-mining Co. (Ltd.)	20/11/95	149,081	1,796	100,000	1,457	0 15 0	..	..	33	200	..	..	74,587	..
Waihi Grand Junction Gold Co. (Ltd.)	19/4/98	150,000	2,260	112,500	4,697	1 0 0	..	..	18	68	..	..	42,580	..
New Hauraki Gold Properties (Ltd.)	26/7/95	98,567	..	30,000	..	..	..	..	..	6	145	421	18,377	..
Blagrove's Freehold Gold-mining Co. (Ltd.)	–/5/95	50,121	..	12,500	..	..	..	..	..	20	64	191	31,095	..
Kapanga Gold-mining Co. (Ltd.)	3/10/93	247,430	..	..	..	..	..	..	..	27	12,165	34,971	80,387	..
Kuranui-Caledonian Gold-mining Co. (Ltd.)	13/8/96	40,385	..	..	39,300	..	..	..	163	45	7,240	19,676	32,196	..
Woodstock Gold-mining Co. (Ltd.)	4/11/99	150,000	5,320	100,000	22,302	0 18 0	93 1 0	..	77	75	..	2,726	19,187	..
Totals	..	1,890,369	16,019	525,000	160,520	..	93 1 0	..	928	1,011	403,501	619,467	1,140,974	6,677
OTAGO DISTRICT.														
Achilles Goldmines (Ltd.)	25/7/00	85,748	..	..	..	..	..	..	..	60	265	1,030	11,945	..
	..	85,748	..	..	..	..	..	..	..	60	265	1,030	11,945	..
Grand Totals	..	1,976,117	16,019	525,000	160,520	..	93 1 0	..	928	1,071	403,766	620,497	1,126,919	6,677

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