

1885.

NEW ZEALAND.

THE GOLDFIELDS OF NEW ZEALAND

(REPORT ON).

Return to an Order of the House of Representatives, dated 3rd day of August, 1869.

Ordered, "That it is desirable that Government should cause to be laid on the table of the House, during each session, a report embodying a general account of the present condition of the goldfields of the colony, their advancement or otherwise, during the preceding year, and their probable prospects; together with particulars showing the average price of provisions during the year on each goldfield, the rate of wages, estimated population, and such other information as would afford a comprehensive idea of the general condition of the mining interests in the colony; and that His Excellency be requested to forward a copy of such report to Her Majesty's Secretary of State for the Colonies."—(*Mr. W. H. Harrison.*)

Secretary for Goldfields' Office,

SIR,—

Wellington, 21st June, 1885.

I have the honour to forward the general and detailed reports and returns of the goldfields of New Zealand, for the twelve months ended the 31st March, 1885.

I have, &c.,

JAMES MCKERROW,

Secretary for Goldfields.

The Hon. W. J. M. Larnach, C.M.G., Minister of Mines.

REPORT.

THE general annual report on the goldfields of New Zealand only deals with the main results for the year, and their relation to the results of former years, as showing the causes operating on the prosperity or declension of the various classes of gold-mining, and the observations which experience dictates as likely to promote and maintain it as one of the great industries of the colony.

The goldfields have been opened on an extensive scale for twenty-four years. The discoveries of Gabriel Read at Tuapeka, Otago, in 1861, may be looked upon as the starting-point of the gold industry on the large scale of being followed by thousands of men. For many years the alluvial deposits there and in other parts of Otago, and from 1865 on the west coast of the Middle Island, yielded up their rich treasures with comparatively little trouble to the hardy diggers. But the surface deposits could not last for ever, and in tracing them up to their sources something more than mere muscular work was required, and the digger had to exercise his ingenuity, and naturally was led on from the digger to the mining stage; and now, as year by year the natural difficulties increase, the miner has to apply more science to his work, and call in the aid of elaborate machinery for winding, draining, or crushing the matrices, and so the industry has become one of great complexity, requiring the association of skill, capital, and labour.

The department has sought from time to time to disseminate information regarding appliances approved in other mining countries, such as the diamond- and rock-drills, hydraulic elevator, &c., and it had long been the desire to send some one thoroughly conversant with all in New Zealand mining, to visit the more extensive mining industries of other countries, so that, with eyes tutored to the practical application of expedients for abridging labour and overcoming practical difficulties, he would be able to see at once what, in their experience and ingenuity, would be of advantage to New Zealand.

In the experience, ability, and skill of Mr. Gordon, the Inspecting Engineer, the department has such an one, and he was accordingly instructed to make inspection last summer of the principal mining districts of Victoria and New South Wales. The result is a very elaborate report (H.-9, 1855), dealing at great length and detail not only with gold-mining, but mining for coal, copper, tin, and silver, and the systems of ventilation, winding, haulage, and other cognate subjects common to all classes of developed mining. That report is now in the Press, and, although it would be impossible to give in a few lines anything like a synopsis of it, it may be said, in a sentence, that the hydraulic sluicing systems of New Zealand are more advanced than those of the colonies referred to, but that in the processes of saving fine gold and in the treatment of pyrites the New Zealand practice (or rather want of practice), and neglect of that method of obtaining gold, is far behind, and the colony has a great deal to learn and imitate, which would conduce to the greater prosperity of the mines affected.

In the matter of winding machinery for such deep mines as are at the Thames the general arrangement and safety-appliances are greatly better in Victoria than in New Zealand.

It is, of course, difficult to convey an intelligent idea of these matters without the aid of diagrams, and therefore they are only alluded to here to state that the report gives full details in the diagrams which form part of it.

Mr. Gordon was much struck by the similarity of a great part of the rock formations in the silver-bearing districts of New South Wales to those of the mica schists of Otago, and he has great hopes in the future of New Zealand as a silver-producing country. But our miners will have to be familiarized with the appearance which silver and other ores present in their native states, combined, as they invariably are, in forms so totally different to the customary forms of the pure metal of commerce.

A very excellent step towards familiarizing the miners and residents in mining districts with ores was the establishment, a few years ago, of small cabinets or cases of minerals at some of the District Survey Offices.

And in this connection prominent notice must be taken of the lectures and visits of Dr. Black, Professor of Chemistry in the Otago University, to the Gold-fields in Otago and West Coast last summer. He awakened a great interest amongst the more intelligent miners, and left with them the knowledge of a few useful tests and of chemical re-agents, sufficient to start them on the track of inquiry and observation, with an amount of beneficial result which is sure to be felt hereafter, if not in actual discoveries, at all events in a more intelligent application of "principles" to mining. The testimony of miners from many quarters leaves no doubt of the excellent effect of Dr. Black's instructions, and of the spirit of inquiry which was awakened thereby.

There will be found in the Appendix, in the following order: The report of the Inspecting Engineer on the works in progress on the goldfields, together with a tabular statement of works, roads, and tracks constructed and under formation during the last three years; the reports of the Wardens for their respective districts; the reports of the Managers of water-races; and also the usual statistical tables.

YIELD OF GOLD.

As explained in former reports, the only means available of stating the annual yield of gold is from the Customhouse returns of the export. A certain quantity is used up in the colony by the jewellers, but this is known not to exceed a few thousand ounces in any one year, and therefore we may simply abide by the export returns as showing from year to year the yield of the mines.

The total value of the export of gold from the colony up to the 31st March, 1885, was £41,634,507. For the twelve months ended the 31st March, 1885, the return as under is shown to be 239,688oz., of a value of £927,433, or £31,701 less than the preceding year; and it may be noted that the tendency for several years past has been towards diminution. It can hardly be expected to be otherwise so long as the main source of yield is from alluvial deposits. Hitherto this class of mining has contributed about two-thirds of the year's returns; but the decrease

this year, as in others, has been entirely due to a falling-off in it. The surface workings in beds of streams have been pretty well worked out, and the alluvial miner has to follow the leads of gold into deeper levels; and consequently he is retarded in the search by having either to sink for it, or to wash away the superincumbent drift by hydraulic sluicing. There have been a few discoveries of fresh ground during the year, as at Criffel, in Otago, where, on the high slopes of Mount Pisa, at an elevation of about 4,000ft. above sea-level, a considerable area has been proved payably auriferous for sluicing, and may be expected to last, as a summer diggings, for many years to a limited number, similarly to the diggings at Clarke's, near Naseby, and Campbell's, near Teviot; both of which are about 4,000ft. of altitude.

The great range of level in the auriferous deposits, and the extensive area of the colony over which they are spread, while it suggests the thought that there may still be many places rich in treasure undiscovered, it is still unlikely that any very extensive field awaits discovery, unless it may be in the southern portion of the densely bush-clad Westland District or in the recesses of the great Southern Alps. Indeed, it is known that there are auriferous deposits at the headwaters of such rivers as the Dart and Waiho, close up to the glaciers; but hitherto the difficulty of access has prevented any but the most adventurous spirits from venturing into these fastnesses.

In the open country the prospector has tried, it may be said, every valley and stream-course in the colony. However, the alluvial deposits now being worked are proved over a large area of ground, and will last for many years for certain.

It is well known that the beds of the Clutha, Shotover, and several other rivers are rich in auriferous deposits, and many attempts have been made, by turning the river from side to side, by pneumatic cylinders, diving-bell boats, and other expedients, to get at the rich treasure—some of them with success. But in such a river as the Clutha, the largest in the colony, any attempt at turning the vast volume and current is utterly hopeless, although futile attempts have even been made to do that. The most successful plan hitherto adopted with that river has been the hopper-dredge. For several years the motive-power to work the dredge was the current of the river, the punt being moored. But it was found that only certain portions of the river could be worked on this plan. A powerful steam dredge (as was mentioned in the report of 1882) was placed on the Clutha River, between Clyde and Alexandra, by Mr. McQueen, engineer, Dunedin, which is capable of bringing stuff up from a depth of 22ft. At first there was a difficulty in washing out the gold, there being no room in the punt for the usual length of sluice-box, but this difficulty has now been overcome, and the last year's returns were very satisfactory to the promoter of this ingenious process.

The proportion of the year's returns is contributed by the three great divisions of the mining districts in very much the same ratio as before—namely, West Coast, one-half; Otago, one-third; and Auckland, one-sixth.

YIELD of GOLD during the Year ending 31st March, 1884, and 31st March, 1885.

Quarter ending			Quantity.	Value.	Quarter ending			Quantity.	Value.
1883.			Oz.	£	1884.			Oz.	£
June...	...	...	52,401	210,205	June	...	...	54,696	219,269
September	...	...	59,113	236,422	September	...	...	52,362	208,495
December	...	...	65,893	262,928	December	...	...	60,607	244,454
1884.					1885.				
March	...	...	62,281	249,579	March	...	...	63,917	255,215
Totals ...			239,688	959,134	Totals ...			231,582	927,433

MINING POPULATION AND ITS EARNINGS.

The return of miners (Table No. 9) gives a total of 12,034, and, as the number twelve months ago was 12,206, the mean for the year is 12,120, giving an average wage of £76 10s. 5d. per man, or £4 14s. 5d. more per man than last year. This

is certainly not a high wage in the colonies; but in Great Britain, where there is a vast body of workers, many of them artisans earning high wages, the average annual wage, according to Professor Leoni Levi, is £41 14s. for the past few years, and that is higher than any former average in the Home Country. It must, however, be remembered that the gold miners' earnings include cost of machinery, tools, and water for sluicing, and are accordingly considerably reduced thereby.

As bearing out the remarks on the decrease of the yield of gold from alluvial workings, the decrease in the number of alluvial miners during the year was 269, while the increase in the number of quartz miners was 97, the respective totals of each class being 2,059 quartz miners, 9,975 alluvial miners (3,443 of the latter being Chinese, of whom it may be remarked the number, with slight fluctuations, has been nearly stationary for several years).

QUARTZ WORKINGS.

TABLE showing the Comparison of the YIELD of QUARTZ WORKINGS in the Years ending 31st March, 1884, and 31st March, 1885.

Name of District.	1883-84.		1884-85.	
	Quartz crushed.	Gold.	Quartz crushed.	Gold.
	Tons.	Oz.	Tons.	Oz.
Coromandel	1,042	4,018	456	3,201
Thames	36,228	54,865	31,496	37,705
Te Aroha	4,316	4,547	11,042	9,898
Reefton	23,433	16,547	34,549	23,994
Lyell	2,980	1,455	5,025	3,318
Mikihinui ... ..	...	...	715	1,107
Hindon ... ..	...	...	650	163
Collingwood ... ..	...	...	230	154
Queenstown (Skipper's and head of Lake)	5,500	4,623	5,073	4,826
Arrow ... ..	...	...	3,236	3,267
Cromwell	848	850	400	316
	74,347	86,905	92,872	87,949
Lawrence—				
Quartz ... ..	...	700	...	350
Cement ... ..	...	6,150	...	3,650
	74,347	93,755	92,872	91,949

The quantity of quartz crushed for the year shows a large increase on that of the previous year, but the amount of gold obtained does not bear a corresponding increase, although the total yield is slightly in excess of the previous year.

The Thames, which is the most important quartz-mining district in the colony, shows a very considerable falling-off in this year's returns, but the adjacent district of Te Aroha shows a very marked increase, and may be taken as an earnest of the future of that field, which is only as yet in the initial stage of development. During the year a great deal of preliminary work has been in hand in the erection of plant and other preparations for doing a greater amount of future paying work. The dividends paid by five mines in the Thames District were £16,852 10s.; Coromandel, one mine, £450; and Te Aroha, two mines, £3,500. In the Reefton District, the next most important quartz-mining district in the colony, there is a very decided increase in the yield of gold, due mainly to the extensive introduction of crushing and other machinery, referred to in last year's report. Another gratifying circumstance in connection with this field is the fact that about £35,000 was paid in dividends from five mines, and there is good reason for hoping that this is the prelude to still better results in future years, as, in addition to a vast amount of dead work already accomplished in the opening of the mines, the department has, by means of subsidies and in co-operation with the County Council, opened out the Big River District by tracks, for the purpose of enabling machinery to be taken into some very promising known reefs in that

district. The low-level tunnel entering at Black's Point, and trending towards Waitahu River, is now in 1,700ft., and has got into better country than was met in the first section of the work. This work was meant, in its initiation, to be driven through the mountain ridge for two and a quarter miles, but whether this is ever consummated will depend on circumstances. Its object is to test the numerous quartz-lodes by cutting them through at the deep levels, presuming they go down so far; also to afford drainage of the mines above; and further to lessen the cost of working them, by allowing the quartz to be sent down by shoots to the tunnel, instead of the more expensive mode, now in vogue, of each mine raising its stuff to the mountain surface. It is also proposed, if these anticipations are verified by results, to have one or more large batteries at Black's Point, where all the quartz would be crushed. There is a similar tunnel being driven in from Boatman's to test the deep levels of the reefs there. Both of these great works are subsidized by the Government, the Black's Point to the extent of one-half the cost, and the Boatman's to a less extent.

The results of the Otago quartz mines in the Lake District at Macetown, Skipper's, and the Invincible Mine, Rees River, head of Lake Wakatipu, all show a very marked increase in yield over last year's returns. This, as in the Reefton District, can be ascribed to the fruits of a great deal of past dead work beginning to appear, and to the greater facilities in procuring timber and machinery, owing to the very great improvements in the roads executed during the last two or three years. The Macetown Road, between Arrowtown and that place, has actually cheapened the cost of each main timber prop by no less a sum than 3s., and ordinary sawn timber by 12s. the hundred. Encouraged by this result, the department has been using every endeavour to improve the road to Skipper's, which at present is and indeed always has been, at one point—the zigzag—a very great obstacle to the transport of machinery, which has either to be packed on horses, or, when that is impracticable, as in the case of the larger and heavier pieces, dragged along on sledges and let down the steeps of the zigzag by ropes or other laborious expedients at great cost and labour. After many delays, which need not be here detailed, a survey and engineering section has at length been made of a road to be cut out of the rocky bluffs and formed along steep sidings for about two miles, so as to avoid the dreadful zigzag. Tenders are now called for the work, the cost of which will necessarily be very considerable; but the advantage of having a road of good mountain grade not worse than 1 in 10, and that only for a short distance, in place of 1 in 3 at the zigzag, will be a vast boon to the miners and settlers. And it is well worthy the expenditure, for there are many well-known reefs awaiting development, but, under the excessive cost of transit of machinery and other goods, they cannot unless very rich be worked to pay.

Attention was called in the previous annual report to the Invincible Mine, Rees Valley. The past year's experience has more than verified the hopeful anticipations regarding that mine. There is a very large body of stone, and the yield per ton has risen from 8dwt. to 15dwt., the year's yield of gold being 2,276oz., and £2,915 was paid in dividends. The success of this mine is held to be very encouraging in respect to the future extension of quartz-mining in that part of Otago, because Skipper's is on one side of the range and the Invincible on the other, and, in the gorges in the great dividing range between, there are many reefs exposed which either have never yet been prospected, or, if so, only very superficially.

OUTLAY ON GOLDFIELDS.

During the twelve months ending the 31st March, 1885, works to develop the goldfields were sanctioned to the value of £34,797. This, with the authorities for expenditure of the two previous years, gives a total of £127,549, of which two-thirds are for roads and tracks, and one-third for water-supply, prospecting, and sludge and drainage channels. The outlay on roads is much the more satisfactory expenditure, as it not only opens out the country for mining but also for its

future settlement, and may be looked upon as a necessary and permanent work, which would have to be done in any case, while the outlay on the water-races is necessary only for the one temporary purpose of washing-out the gold deposits. That done, the works are no longer of any use, however costly they may have been to construct.

A reference to the tabular statement of costs and receipts of water-races in Mr. Gordon's report, in the Appendix, will show that the results in the yield of gold from the great West Coast and Otago water-races have in no way been commensurate with their cost to the colony. Thus, for instance, the Nelson Creek Water-race, which cost £89,834 has enabled an average of fifty-nine miners since its completion, in the beginning of 1878, to procure gold to the value of £91,735. In other words, if these miners had given their services to the colony free, and handed over all the gold they obtained, it would have only just paid the principal sum in 1885. Did the race command an extensive area of auriferous ground, it might still recoup in part the outlay, but unfortunately the ground is so far worked out that it will not pay much longer to keep up the race to work it. A survey is now being made, with the object of ascertaining the cost of extending this race to the watershed of the Ahaura River, in the vicinity of Riverview.

The Mount Ida Race, in Otago, first opened in June, 1877, has cost £65,066, and the gold obtained by means of its water-supply has been £54,770 since the Trust took charge on the 1st January, 1879. Since that date the loss on working has been £2,396. The ground for which this race was constructed has become poor, and with a view of increasing the utility of the race it has been extended to Spec Gully, at a cost of about £3,000; but as yet no sufficient trial has been made of that ground to say whether this will lead to paying results.

The history and experience of the water-supply to the goldfields of New Zealand have shown that, commercially considered, the outlay has not been directly productive, and that the principal sunk can never be recovered, nor even interest on it during the use of the works; and it is very questionable if the collateral advantages of finding employment for a few years to a limited population will compensate the colony for the outlay.

On the experience gained in New Zealand it may be laid down as an axiom that any water-supply costing more than about £10,000 is almost sure to prove a commercial failure; for, as a rule, the broken and rugged nature of the country does not permit of any one race commanding a large extent of auriferous country.

DEPARTMENTAL.

There has been a great deal of transfer of districts amongst the Wardens on the goldfields during the past year. These transfers have been solely directed by the Justice Department, without any reference to the Mines Department. The effect has been to lessen the value of the district reports, because five of the seven principal Wardens have been shifted, and consequently were entirely new to their districts.

The amalgamation of the head office of Mines with that of Crown Lands, with Mr. H. J. H. Elliott as Under-Secretary for both, has worked well, the business of the two departments having a close affinity in many respects.

I have, as in former years, to acknowledge the kindness of the Secretary to the Treasury, Mr. Gavin, and the Secretary of the Customs, Mr. Seed, in supplying returns of revenue and of gold exported.

J. MCKERROW.

APPENDIX.

REPORT ON GOLD FIELDS, ETC., VISITED, AND WORKS IN PROGRESS ON GOLD FIELDS.

Mr. H. A. GORDON, Inspecting Engineer, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Mines Department, Wellington, 30th May, 1885.

I have the honor to submit annual report on works undertaken wholly by the Government, or by subsidy to County Councils, for the development of the mines in the colony, and likewise on works connected with mining on the fields I visited during the year ending the 31st March, 1885.

SUBSIDIZED ROADS AND TRACKS.

The subsidized roads and tracks in course of construction during the year have been as follows :—

COROMANDEL.—*Track, Golden Belt to Tiki.*—This track will give facilities for the ground to be worked between the Matawai Creek and Tiki, and the quartz conveyed to the crushing batteries, at either of those places. The cost of this work has been £239.

Road, Tokatea Saddle to Battery.—This road is constructed about 8 feet wide, with as easy grades as the nature of the ground would admit, which enables the quartz to be brought from the mines at Tokatea saddle to the Tokatea Company's crushing battery. The total cost of this work has been £370.

Road, Matawai Battery to Vaughan's Claim.—The work here consisted in widening and reducing the grades in portions of the original track, constructed to Vaughan's and Vizard's claims, so as to enable drays to be used to convey the quartz from the mines to the crushing battery at Matawai Creek. This road is completed, and has cost £357.

Track, Mercury Bay to Waitai.—The work consisted in improving the original bush track, which was in a very bad state of repair, and almost impassable. This track is used by the residents of Mercury Bay to get to Coromandel. The cost has been £100.

Track, Waikoromiko.—This work consisted in improving and extending the track from Tokatea Saddle to Waikoromiko, to enable the miners to get their quartz brought from their mines to the crushing batteries in the district, and bring supplies on the ground. The cost of this work has been £150.

Road, Ring's Bridge to Kapanga Mine.—A portion of this road was washed away by a flood that took place in the month of July, 1883, which silted up the bed of the creek, causing the water to flow over the road in several places. This necessitated the deviation of the creek, to prevent a like occurrence again taking place. The cost of repairs and creek deviation has been £150.

Road, Emily Battery to Rocky Creek.—This work is now in course of construction, but the amount that is available will not be sufficient to complete it. The original estimate was £291; but as this work was not so pressing as some of the other roads in the district, £165 of the estimated amount was apportioned to complete the road from Matawai Battery to Vaughan's Claim. Subsidies for several additional road and tracks in this district have been authorized, and some of them are in progress.

THAMES.—*Road, Otanui Mines to Crushing Battery at Maungawheriwheri Creek.*—The formation of this road is completed, and it is partially metalled; but the soft spongy nature of the ground renders the metalling very expensive. The cost of this work has been £710.

Track, Katikati Road to Waitekauri.—This work consisted in improving the original dray-road, by reducing the grades and replacing culverts. The cost of this work has been £250.

Track, Karangahake.—This track is a continuation of the road that was constructed from the Ohinemuri River to the Karangahake mines; and is for the purpose of enabling the miners to have easy access to this part of the district. The country in this locality is very rough and broken, and likewise densely timbered; and, as it is believed to contain a large amount of auriferous quartz, which could never be worked until a road or track is constructed, it will tend to open up the country between Karangahake and Te Aroha, and enable the miners an opportunity of prospecting—£784 have been expended on this work, and a subsidy of two-thirds the cost of construction, up to £1,333 have been authorised.

Road, Kaueranga Valley to Otanui.—This road was originally partially formed, but never metalled. At the time this work was authorised the quartz mines at Otanui looked very promising, but from defects in the crushing plant, have not yet been properly tested. It was to enable machinery to be easily brought on the ground, that the road was undertaken. The cost of the work has been £357, but it is not yet completed.

Bridge over the Ohinemuri River, Karangahake.—This work is in course of construction. It was originally intended to construct a bridge for passengers; but, subsequently, it was deemed advisable to make it suitable for horse traffic, and a portion of the subsidy authorised for the Karangahake track was appropriated to do this. The estimated cost of the bridge with approaches is £416.

TUAPEKA.—*Road from Waipori Township to Bush.*—This is a road to open up the Waipori bush, which is about twelve miles distant from the Waipori township. It is the only bush in the neighborhood where mining timber can be obtained. The portion of the road on which the money has been spent is from the top of the hill directly above where the bush is situated, and follows down the siding into the bush. The cost of this work has been £200.

SOUTHLAND.—*Road, Waikaka to Leitham.*—The construction of this road has been completed at a cost of £150.

TAIERI.—*Road, Mullocky Gully to Silver Peak.*—This road is now in course of construction, and when completed will be of great service to the settlers; and may be the means of opening up fresh auriferous ground—£300 have been expended on this work, and it is estimated to cost £600 when completed.

WESTLAND.—*Road, Duffer's Creek to Christchurch Road.*—This road is for the purpose of giving facilities to the miners that are employed in the different creeks and gullies to obtain supplies, and it likewise affords greater facilities for effecting repairs to the Waimea Water-race. The cost of this work has been £720.

Track, Back Creek to Eel Creek.—This track will enable the miners to work the terraces running parallel with the Hokitika River, and likewise afford them better facilities for working the creeks and gullies higher up the river. The cost of this track has been £250.

Track, Boucher's Creek to Gentle Annie Terrace.—This track, when completed, will enable supplies to be taken up to the miners who are working on the top of a high terrace, at a cheaper rate. The old track was very steep and almost impassable. This work has cost £120; an additional subsidy has been authorised for its extension. Distance, one mile.

Track, Ross Borough Boundary to Mount Greenland.—This track is for the purpose of enabling the miners who are working on Mount Greenland about 2000 feet above the level of Ross Flat to get supplies brought on to their claims which cannot be done at the present time by horses. This work is estimated to cost, when completed, about £1,400. Distance about five miles.

MANIOTOTO.—*Road, Ida Valley to Serpentine Diggings.*—This work consisted in improving the road from Ida Valley to Serpentine Diggings. A number of miners have been at work in this locality for a number of years, and recently some rich quartz reefs have been opened. The cost of these improvements has been £136.

GREY.—*Track, Langdon's to Moonlight.*—This is a continuation of the road up the north side of the Grey River from opposite Langdon's Ferry to Moonlight Creek. There are a number of miners employed in the ranges and in the gullies and creeks on the north side of the Grey River, who formerly had no passable track to get their supplies brought to their claims; and even now some of them have to carry their provisions for a considerable distance on their backs. This track can be extended at a future time up the Grey River to join the road coming from the Little Grey Valley to Mirfin's station on the Otututu River; and thus make the line communication up this side of the river complete. The cost of this work has been £1,600. Distance, about nine miles.

Track, Cameron's to Cape Terrace.—This will be a very servicable track, as it is the most direct line from Greymouth to Westbrook, and it goes through auriferous ground for the whole of the distance; £342 have been expended on its construction, and, when completed, it will cost about £700. Distance, three miles fifty-eight chains.

Track, Mackley's Station, Waipuna, to Clarke's River.—This track is in course of construction, and when completed will give far greater facilities to the miners to prospect further inland, and likewise enable those who are working on the Clarke and Grey Rivers a better means of getting up their supplies. This work is estimated to cost about £1,200. Distance, five miles sixty chains.

Track, Barrytown to Brighton.—This is the continuation of the road from Greymouth to Barrytown, and forms portion of the main coast line of road from Greymouth to Westport. There are a number of miners working on the terraces, gullies, and creeks between Barrytown and Deadman's Creek. The present extension will afford them a more convenient means of obtaining their supplies, and will tend in a great measure to open up this portion of the district. This road, when completed, is estimated to cost about £2,240. Distance, seven miles.

INANGAHUA.—*Track, Reefton to Big River.*—This is a continuation of the road from Merrijigs to join the portion of the road that was constructed in 1883 from Big River towards Reefton. There are a number of quartz reefs in this locality, some of which has been proved to be payable, if machinery could be brought on the ground; the completion of this road will enable this to be done, and may be the means of opening up a large quartz-reefing district. This track is estimated to cost £1,792. Distance, five miles.

BULLER.—*Track, Seatonville to Larrikins.*—This is a foot-track that was constructed through the gorge of the Mokihinui River, between Seatonville and Specimen Creek, to avoid going over a very steep range about 2,200 feet high. The cost of the work has been £438. Distance, three miles.

Track, Waimangaroa to Denniston.—This is a track from the foot of the hill near the Waimangaroa School to the Westport Coal Company's works at Denniston. Previous to this track being constructed, the only way of getting to Denniston was by travelling on the Westport Coal Company's inclined tramway, which resulted in several fatal accidents taking place. This track has cost £787. Distance, three miles forty-one chains.

Track, North Terrace to Oparara.—This is a track from the North Terrace, Karamea, to the Oparara Diggings, and it will be of great service to the miners and many of the settlers in this district, who, after finishing the work for the season on their farms, go to these diggings. The present track in wet weather is almost impassable for foot traffic; but, when the one that is now in course of construction is completed, the miners will be able to get their supplies brought by horses. This track is estimated to cost £500. Distance, two-and-a-half miles.

Road to connect Alluvial Diggings with Charleston Road.—This is a road to give the miners that are working on the Pakiki, between Westport and Addison Flat, a means of getting their supplies brought from the Charleston-Westport Road to their claims. The cost of this work, when completed, will be about £400. Distance, one mile.

Track, Four-Miles to Grey River.—This is merely an extension of the four-mile track, Charleston, towards the Grey Valley. This extension is estimated to cost £300.

Road to connect Alluvial Diggings north of Deadman's.—The construction of this road was necessitated by the sea making inroads on the beach, and breaking into a swamp, which stops all traffic at high water. The cost of this work, when completed, will be about £278. Distance, about one mile.

Track, Lyell Bluff to Victor Emanuel Claim.—This is a track from the Buller Punt, near Lyell Township, to the Victor Emanuel claim up New Creek, which, when completed, will enable a better means of communication to be established between the Westport-Lyell Road and the quartz mines up New Creek; and, therefore, give greater facilities for working them. At the present time the miners get their supplies brought up with horses travelling up the bed of New Creek, which is full of large boulders, and very rough. The cost of this track, when completed, is estimated at £750. Distance, about four-and-a-half miles.

The whole of the foregoing tracks are constructed with good grades, and the greater portion of them could be widened into a dray-road at any time, if required. They are constructed from 3 to 6 feet wide, and metalled. These tracks and roads are subsidized to the extent of £2 to every £1 the County Councils spend on their construction up to the respective amounts already stated.

The following are the roads in course of construction for the development of the mines on which the whole cost of construction is borne by the Government.

OTAGO.—Road, Arrowtown to Macetown.—This is a very important work, and is likely to eventually be the means of more of the quartz mines in the district being worked, as, it cheapens the cost of mining timber and supplies considerably. The manager of the Tipperary Mine informed me, that since the completion of this road, props that are used in constructing the main levels, are supplied at 3s. each less than what they were formerly; and sawn timber is now delivered for 12s. 6d. less per 100 feet superficial. This in itself is a very great saving in the working expenses connected with quartz-mining. After the road was constructed several large slips occurred, which were costly to remove, and thereby increased the cost of construction to a considerable extent. As this road is taken for six miles through a narrow rocky gorge, having precipitous sides down to the Arrow River, it will, for the first two or three years, be liable to be blocked occasionally by slips, especially when heavy falls of rain take place after a hard frost. The cost of this work has been £9,570. Distance, six-and-a-half miles.

Road, Arthur's Point to Skippers.—A dray-road has been constructed from the Arthur Point-Arrowtown Road (at a point about a mile distant from the Shotover River), to the top of the saddle on the range, where the old track formerly went over; and at the saddle it joins the old track leading up the Shotover River to Skipper's Creek. This road will have to be extended before it will become of any great service to the mining community on the Upper Shotover and the quartz companies at Skipper's. The horse track, from the end of the constructed dray-road, has been used for sleigh traffic to get the machinery up to the quartz mines; but some portions of it are very steep, especially the Zigzag at Stapleton's Hill, which, in addition to being steep, has very acute angles, and difficult to work a sleigh on. When the horses that drag the sleigh come to one of these angles, they are unyoked, and the sleigh hauled round the angle with blocks and tackle. There is likewise another drawback in this mode of conveyance, and that is, the heavy castings have to be made in pieces, and bolted together when they arrive at their destination, which is not a desirable thing in stamp boxes, as the vibration caused by the stamps loosens the bolts, and causes them to wear and allow the crushed material to go through the bolt holes, carrying with it gold. A survey of this portion of the road has been made, and tenders will shortly be called for its construction. This portion is estimated to cost £5,173; the total expenditure on this road has been £2,670, and the distance constructed is nearly four miles.

BULLER.—Road, Lyell to Mokihinui.—This is a road leading from the junction of the Lyell Road and Zalatown track to the United Italy Company's mine at the Eight-mile Creek; and it is intended at some future time to be extended to the Mokihinui River, a distance of about thirty miles, where it will go through a gold-bearing country for the whole of the distance. The road has been constructed as far as the United Italy Company's mine, and a reconnaissance survey has been made of the remainder of the road proposed to be constructed, which is a 3-feet metalled horse-track, with suitable grades for dray traffic, so that it can be widened at any time if necessity requires it. The cost of this work, up to the present, has been £3,200. Distance, four miles.

Road, Mokihinui to Karamaea.—This is a road leading from the end of the horse-track originally constructed by the Provincial Council of Nelson from the Mokihinui Township to Coal Creek. It follows up the Mokihinui River, and thence will cross this river by a bridge below its junction with Rough-and-Tumble Creek. A good horse-track has been constructed from Coal Creek to opposite Rough-and-Tumble, and likewise to the Mokihinui quartz reefs, with very easy grades; and a survey is now being made from the mouth of Rough-and-Tumble Creek to Karamaea, for the purpose of putting the whole of the work in hand as early as possible. The Karamaea District is really the worst off for roads and tracks of any district in the colony, and this road, which is now in hand, when completed will not only tend to the development of our mineral resources, but likewise afford the settlers an opportunity of sending their stock to a market which they have not heretofore had, unless at a great risk of either losing or getting them killed in attempting to bring them over the bush track constructed in the early days of the settlement by the Provincial Council of Nelson. The expenditure on this road has been £3,825.

Road, Brighton to Seventeen-mile Beach.—The expenditure on this work up to the present time has been confined to survey, and has cost £1,199.

GREY.—Road, Cobden to Seventeen-mile.—This work consists in widening the present horse-track from Coal Creek to Seven-mile Creek into a dray-road, and for metalling the dray road from Coal Creek to Cobden. It was found after the horse-track had been constructed that suitable metal could not be obtained unless by bringing it from the ocean beach, and the expense to metal a narrow track was found to be nearly as much as widening it into a dray road of sufficient width to allow a dray to be used. This work is in course of progress, having cost up to the present time £1,154.

Road, Ahaura to Amuri.—This is the continuation of the horse-track that was made some years ago from the Big Gully to Granite Creek. It is now being constructed from Granite Creek to the Ahaura River, opposite to Mr Mason's homestead, where there is always a good ford to cross the river. Contracts for this portion have been accepted, and when completed will enable the miners and settlers to have an open line of communication with Ahaura Township, with only having to cross the Ahaura River once. The expenditure on this work has been £78.

ROAD TO OPEN UP MINES OTHER THAN GOLD.

NELSON.—*Road to Champion Copper Mine.*—This is a road through the Aniseed Valley to the Champion Copper Company's machine site on one of the branches of the Roding River. About eleven miles of this road is in course of construction, and will cost, when completed, exclusive of inspection and engineering, about £4,165. The Champion Copper Company pays one-third the cost of this work.

Track, Richmond to Copper Mine.—This track is being laid out, and when survey is completed tenders will be called for its formation, which is estimated to cost £244 10s. Of this amount the Government pays £100.

CANTERBURY.—*Road to Wilberforce Quartz Reefs.*—This road is to enable the quartz reefs in this locality to be worked; but, so far, they have not proved very encouraging; £12 have been spent on the work, and when completed it is estimated to cost £1000.

PROSPECTING.

The companies and associations that have been subsidized for prospecting during the year have been as follows:—

THAMES.—*Queen of Beauty Company.*—This company has the deepest shaft in the Thames district, and is the deepest under sea-level that there is in the colony, being about 707 feet under high water-mark. The amount authorised as subsidy to this company is £150, of which £75 have been paid.

Caledonian Low Level Company.—This company are driving a tunnel from the Big Pump shaft at the 640-feet level to prospect the deep levels. The amount of the subsidy authorised is £150, of which £75 have been paid.

INANGAHUA.—*Deep Level Tunnel Reefton.*—This tunnel is being driven from Black's Point in the direction of the Waitahu River. It is now constructed for 1,715 feet. The total amount of subsidies authorized on pound for pound principle is £3,450, out of which £1,830 have been paid. There are several other prospecting works for which subsidies have been authorized, but as no more of these have yet been undertaken I will not refer to them, as they are shown in the list of works subsidized by the Mines Department.

SLUDGE-CHANNELS AND TAIL RACES.

OTAGO.—*Smith's Gully Sludge-channel, Bannockburn.*—This work was commenced by a company to bring up a channel from the fall into Bannockburn to the head of Smith's Gully, for the purpose of working the bed of the gully and the adjacent auriferous ground on the terraces, after constructing about 20 chains of this channel the company abandoned it, or have at least done no work for over twelve months. The subsidy authorized to this company was £800, which they were to be paid in instalments according as the work progressed. The amount of subsidy paid has been £251, and the balance can be cancelled, as the work is not progressing.

Pipe Clay Gully Sludge-channel.—This is a channel that is being constructed from the bank of the Kawarau River to the head of Pipe Clay Gully, and ought to be completed in about twelve months. This channel was commenced about five years ago, and when completed will be a little over a mile in length, it is constructed 6 feet wide in the bottom, and about 3 feet high on the sides, having a fall or inclination of about 1 in 18. The sides of the channel are lined with stones, and the bottom has stone paving. The total amount of subsidies authorized for the completion of this work is £400, of which £218 have been paid.

Tail-Race, Ophir.—This is for extending and deepening the present tail-race from the Manuherikia River to a large flat which was originally known as Black's. The ground here is extremely wet, and although holes have been put down and gold found in some of them, the quantity of water to contend with was too much to allow the ground to be worked. A tail-race is therefore being constructed to enable this ground to be prospected, as it is considered by the old residents here that the lead which was lost in the early days on Black's diggings comes down through this flat. A subsidy of pound for pound was authorized for this work, and it is estimated to cost when completed about £1,500.

Sludge-channel, Round Hill.—It is the unanimous opinion of the miners residing about Round Hill that if a sludge channel could be constructed with sufficient fall to carry away the sludge there is a large quantity of ground could be worked that would pay very remuneratively. A survey was therefore made to ascertain if this fall could be obtained. The total length of channel was found to be 2 miles 79 chains, and the total fall that could be got was 44 feet 6 inches, or about $2\frac{1}{4}$ inches to the chain, which is only sufficient to carry away thick muddy water. The expenditure on this work has been about £50.

Sludge-channel, Muddy Creek, St. Bathans.—This may be termed the most gigantic sludge-channel that has yet been constructed in the colony. It is from 3 to 4 miles in length, 12 feet wide in the bottom, paved with stones, and 3 to 4 feet high on the sides. Portions of the sides are lined with stone, and portions with scrub. The amount of subsidy authorised on the completion of this work is £500. Of this amount £150 have been paid. This channel was first undertaken about eleven years ago, but the first company, after spending about £4,000 on the work, failed; and the present company took it up, and has been steadily constructing it for the last three and a half years. It has cost up to the present time about £10,000. It is constructed on a grade or inclination of 1 in 60 at the upper end, and 1 in 80 at the lower end. At the place where the grade changes there is a low level head-race brought in from the Manuherikia River, capable of carrying about fifteen sluice heads of water, that is to be used as a flushing-race to prevent the tailings accumulating in the channel at the change of grade. This channel will soon be completed up to the different companies leases that it is intended to be worked, but each company has yet a large undertaking to complete a tail-race through their own ground to the scene of their operations. Some of these companies are pending the completion of the channel and tail-races, working the ground on the

same principle as the Gabriel's Gully Tailings Company with an appliance similar to that known as "Perry's Hydraulic Elevator."

Compensation to allow Tail-race to be constructed at Tinker's.—This was for ninety acres of freehold belonging to Messrs. Laidlaw and Crawford in the valley of Spottis Creek, about one mile below Tinker's Diggings. The bed of this creek is much lower than any gully or creek-bed in the vicinity, and by constructing a tail-race into it, will enable deeper ground to be worked. A tail-race could not have been constructed here until the purchasing of this freehold was effected, as it will be the means of covering a portion of the ground with tailings. The cost of purchasing this freehold was £500, of which the Government paid £400.

WATER RACES.

Waimea-Kumara Water-race and Kumara Sludge-channel.—Portions of the fluming of what is known as the Waimea Water-race are getting considerably decayed, and are being renewed from time to time as the necessity of the case requires it. These renewals will increase from year to year, until the whole of the understructures have been replaced; but, so long as the legs of the fluming, stringers and caps are kept in good repair the superstructures will last for a considerable time yet. All these repairs can be executed in such a manner (if care is taken to prevent a large breakage from taking place) so as not to interfere with the water supply. The portion known as the Kumara Water-race is in good repair, and is capable of carrying about 100 sluice-heads of water, with the exception of some places near the lower end, where the ground on which the race is constructed has subsided to a certain extent, owing to it having been undermined by parties working their claims. The Kumara Sludge-channel has been kept constantly at work, and the returns furnished by the manager shew no diminution in parties sluicing or working their claims by the means of this work. This channel has proved very costly to maintain, far exceeding all estimates that were originally made concerning it. This channel was originally paved with wooden blocks; but the expenditure on this system of paving was so great that the department deemed it advisable to substitute stone paving, to ascertain if the cost of maintenance could not be considerably lessened. This new system of paving could not be brought into operation all at once, inasmuch that it took a considerable time to get sufficient stone blocks suitable for paving; and they could only be put into the channel in certain places where partially-worn wooden blocks adjoined them, if the wooden blocks were half worn, the stone paving would stand too high, and impede the velocity of the water and debris going down, therefore a regular supply of new wooden blocks of different thicknesses had to be got to replenish the worn out ones, until circumstances were favourable for stone paving to be put in. An estimate of the cost of maintenance with stone paving can only be formed from the expenditure during the last six or seven months of the financial year, which the following table shews to be fully £200 per month less than it originally cost for maintenance. In adopting this new system of paving, considerable opposition was made by those sluicing into the channel, on the grounds that the stone paving would greatly diminish the quantity of tailings that the channel would carry, and it is only reasonable to assume that the friction of the tailings going over an uneven surface would be greater than going over a smooth clean surface of wood. I called attention to this, while recommending stone paving to be tried; but when the actual results come to be known, there is far less difference than what I anticipated. The channel-fees for the year 1883-4 amounted to £2,127 18s. 3d., and last year to £2,163 16s. 4d., so that, in point of fact, the channel fees for last year amount to £35 18s. 1d. more than the previous year, notwithstanding the strike that occurred during the last year amongst some of those that were using the channel, owing to new regulations for its use coming in force.

The following tables will shew the results of the working of the Water-race and Sludge-channel :—

TABLE showing the Sales of Water, Actual Cash received for Sales of Water, and Maintenance of the Waimea-Kumara Water-race during the Year ending the 31st March, 1885.

Month.					Sales of Water.	Actual Cash received for Sales of Water.	Expenditure.
					£ s. d.	£ s. d.	£ s. d.
1884.							
April	...	...	...	...	715 2 7	1,100 18 5	319 13 2
May	...	...	...	...	1,109 6 6	569 18 7	264 7 4
June	...	...	...	...	820 17 7	949 7 1	228 3 0
July	...	...	...	...	1,093 9 3	1,303 14 4	142 17 9
August	...	...	...	...	1,065 12 2	1,146 7 8	170 17 1
September	...	...	...	...	1,166 19 8	994 1 4	283 19 10
October	...	...	...	...	1,079 2 7	1,528 12 3	163 2 8
November	...	...	...	...	1,277 2 2	626 13 10	239 4 4
December	...	...	...	...	971 3 0	2,360 10 8	261 6 9
1885.							
January	...	...	...	...	289 4 2	11 10 0	493 4 3
February	...	...	...	...	876 6 7	157 10 0	287 17 6
March	...	...	...	...	958 7 5	226 13 3	153 9 10
Totals	...	...	...	...	11,422 13 8	10,975 17 5	3,008 3 6

TABLE showing the Channel Fees, Actual Cash received from Channel Fees, and Maintenance of the Kumara Sludge-channel during the Year ending the 31st March, 1885.

Month.					Channel Fees.	Actual Cash received from Channel Fees.	Expenditure.
1884.					£ s. d.	£ s. d.	£ s. d.
April	...	...	...	...	145 12 1	140 12 6	660 17 4
May	...	...	...	...	190 7 1	128 19 7	776 5 4
June	...	...	...	...	148 18 4	...	627 12 10
July	...	...	...	...	218 6 3	...	664 2 2
August	...	...	...	...	209 10 10	307 13 4	727 10 7
September	...	...	...	...	233 10 10	...	480 10 8
October	...	...	...	...	240 7 6	424 14 7	409 19 1
November	...	...	...	...	245 9 6	106 6 7	464 12 10
December	...	...	...	...	182 2 3	584 4 9	424 6 2
1885.					£ s. d.	£ s. d.	£ s. d.
January	...	...	...	...	62 1 3	...	86 4 0
February	...	...	...	...	142 8 4	...	367 13 11
March	...	...	...	...	145 2 1	40 3 9	471 19 8
Totals					2,163 16 4	1,732 15 1	6,161 14 7

TABLE showing the Sales of Water, and Actual Cash received for Sales of Water, and Maintenance of the Kumara Water-race during the Year ending the 31st March, 1885.

Month.					Sales of Water.	Actual Cash received for Sales of Water.	Expenditure.
1884.					£ s. d.	£ s. d.	£ s. d.
April	...	...	...	...	580 4 4	898 19 0	185 16 8
May	...	...	...	...	939 19 4	390 11 8	83 1 2
June	...	...	...	...	667 3 11	882 17 2	79 17 8
July	...	...	...	...	906 16 10	1,067 7 11	83 16 4
August	...	...	...	...	882 6 10	947 16 3	110 14 1
September	...	...	...	...	997 1 5	933 0 5	204 10 4
October	...	...	...	...	919 12 3	1,255 13 7	95 4 5
November	...	...	...	...	1,216 11 10	482 18 1	135 18 6
December	...	...	...	...	819 17 3	2,117 16 0	136 9 2
1885.					£ s. d.	£ s. d.	£ s. d.
January	...	...	...	...	289 4 2	11 10 0	226 16 3
February	...	...	...	...	756 9 2	98 0 0	216 13 8
March	...	...	...	...	821 0 10	225 6 3	97 1 10
Totals					9,696 8 2	9,311 16 4	1,656 0 1

TABLE showing the Outstanding Moneys due for Sales of Water and Channel Fees from the Waimea-Kumara Water-race and Kumara Sludge-channel at the end of each Month during the Year ending the 31st March, 1885.

Month.					Amount of Outstanding Moneys at the end of each Month.	Number of Men employed.	Remarks.
1884.					£ s. d.		
April	2,056 7 6	396	The money outstanding on the 31st March, 1884, £2,437 3s. 9d.
May	...	...	...	...	2,657 2 11	394
June	...	...	...	...	2,677 11 9	395
July	...	...	...	...	2,685 12 11	396
August	...	...	...	...	2,506 14 11	390
September	...	...	...	...	2,913 4 1	382
October	...	...	...	...	2,279 7 4	382
November	...	...	...	...	3,068 18 7	377
December	...	...	...	...	1,277 8 5	384
1885.					£ s. d.		
January	1,617 3 10	246	The money outstanding on the 31st March, 1885, £3,315 1s. 3d.
February	...	...	...	...	2,478 8 9	360
March	...	...	...	...	3,315 1 3	355

Thus showing the outstanding moneys to have been increased £877 17s. 6d. during the year, while the number of men employed has decreased thirty-one. Of the increase of outstanding moneys, £446 16s. 3d. are on sales of water, and £413 1s. 3d. on sludge-channel fees. The total receipts of the Waimea-Kumara Water-races for the year have been £10,975 17s. 5d., and the expenditure for the same period £3,008 3s. 6d., thus leaving a balance of receipts over expenditure of £7,967 13s. 11d. The receipts from the Kumara Sludge-channel for the same period have been £1,732 15s. 1d., while the expenditure has been £6,161 14s. 7d., thus showing an expenditure of £4,428 19s. 6d. over the receipts, or, in other words, for every £1 that is received in channel-fees, this sludge-channel has cost £3 11s. to maintain.

The total cost of these water-races and sludge-channel has been £173,176 10s. 7d., and the total receipts for the year £12,708 12s. 6d., while the total expenditure has been £9,169 18s. 1d., thus leaving a balance of profit of £3,538 14s. 5d., being about 1½ per cent. on the cost of construction. To take the Kumara Water-race and Sludge-channel conjointly, the total cost of construction has been £54,567 16s. 6d., and the receipts for water and channel-fees during the year have been £11,044 11s. 5d., while the expenditure during the same period amounts to £7,817 14s. 8d., thus leaving a profit of £3,226 16s. 9d., which is about 5.9-10ths per cent. on cost of construction. The value of free water given from the Kumara Water-race to assist the miners in opening out their claims since the completion of this work has been £4,001 13s. 4d., and the free use of the Kumara Sludge-channel has been given to the extent of £463 15s. 3d., making a total of £4,465 8s. 7d. The average number of miners employed in working mining claims with water from the Waimea-Kumara water-races during the year has been 371, and the approximate amount of gold that these miners have obtained is 16,971 ounces representing a value of £64,914 1s. 6d. This amount is only an approximation, but it is as near as the manager could ascertain. It is to be regretted that the definite amount of gold could not be obtained, so as to show exactly the benefits derived by the construction of these works. Deducting the value of water and channel-fees from the total value of the gold obtained, it leaves the average earnings of the miners to be £138 7s., out of which would still have to be deducted the expenditure on sluice-boxes, piping, &c., that are necessary to work their claims. The total value of water sold and channel-fees since the completion of these works (which extends over a period of seven years for the water-race and three years for the sludge channel) has been £45,839 3s., and the expenditure on maintenance during the same period £33,741 5s. 3d., thus showing the total profits on the working of the water-race and channel during this period to be £12,079 17s. 9d. The approximate amount of gold obtained by miners using water from this race since its completion has been 123,485 ounces, representing a value of £472,330 2s. 6d., whilst the average number of miners employed by means of these works has been at the rate of 466 per annum.

Nelson Creek Water-race.—The auriferous ground that this water-race commands as far as has been ascertained to be of a payable nature is getting rapidly worked out; indeed, to such an extent that the receipts from sales cannot be expected to cover the cost of maintenance for any lengthened period. It therefore remains to be either worked at loss or extend it towards the Ahaura River to command the ground in the vicinity of Black Sand, Irishman, and Sullivan's Creeks, and the western water-shed from these creeks downwards of the Ahaura River. All this country is of a very broken nature, having deep gorges, with precipitous sides, in many places along the line that this extension would have to be taken. It should, therefore, be constructed in as straight a line as possible, carrying it in tunnels from gully to gully, having boxing and fluming of a sufficient height only to leave plenty of water-way under the bottom of each flume. A reconnaissance survey was made of this deviation in 1882, and an approximate estimate made of the cost, which was about £12,500, irrespective of the cost of replacing the bridges and flumes on the present water-race from the reservoir at Lake Hochstetter to the point where the deviation proposed would commence. Replacing these bridges and flumes was estimated to cost £8,500, thus making a total of £21,000. The estimated cost of constructing the extension is only approximate. A detailed survey would have to be made so as to have sufficient data to make a correct estimate, and likewise to get correct levels to ascertain the amount of auriferous country that the extension would command. The total cost of construction of this water-race up to the present time has been £89,833 19s. 7d., and the amount that has been received for water sold since it was completed in 1878 up to the end of the financial year has been £12,646 0s. 6d., while the expenditure on maintenance during the same period was £8,429 2s. 4d., thus leaving the total profits to be £4,217 18s. 2d. The approximate amount of gold obtained by the means of this work has been 23,983 ounces, representing a value of £91,735 9s. 6d., and the average number of miners using water from this race has been fifty-nine per annum.

The following table shows the receipts and expenditure, the approximate amount of gold obtained, with the number of miners employed, for the year ending 31st March, 1885:—

Months.				Receipts.	Expenditure.	Number of Miners Employed.	Approximate amount of gold obtained.
1884				£ s. d.	£ s. d.		Oz.
April	...	...	...	126 1 3	73 13 4	43	177
May	...	...	...	93 13 4	77 10 0	39	158
June	...	...	...	58 4 2	72 6 8	22	78
July	...	...	...	57 10 5	75 10 0	22	82
August	...	...	...	87 10 0	68 0 4	25	108
September	...	...	...	61 2 6	60 13 4	27	130
October	...	...	...	89 13 4	63 0 0	34	156
November	...	...	...	105 8 4	65 4 11	39	201
December	...	...	...	91 15 0	61 0 0	41	150
1885.							
January	...	...	...	94 13 4	65 18 6	41	167
February	...	...	...	57 17 6	56 0 0	47	140
March	...	...	...	66 17 6	72 13 4	50	157
Totals	...	...	...	990 6 8	811 10 5	430	1,704

This shows a profit on the working of the water-race during last year of £178 16s 3d, which is about one-fifth per cent on the cost of construction, and the average number of miners employed to be thirty-six, while the approximate amount of gold they obtained is 1,704 ounces, representing a value of

£6,517 16s.; deducting the value of water sold from this amount, their average earnings for the year would be £153 10s. 10d. each. The total value of free water given from this water-race since its completion, for prospecting and opening out claims, has been £1,864.

Argyle Water-race.—The auriferous ground this water-race at present commands is getting worked out, and although the race is only recently reconstructed as far as Ballarat Gully, it will be of very little utility until the extension to the back lead is completed, which is estimated to cost about £2,000. Contracts amounting to £1,203 18s. 3d. have been accepted by the Buller County Council, on behalf of the Government, for constructing a syphon across Ballarat Gully, and a survey is authorized to be made from this gully to the back lead. The total cost of this water-race up to the end of the financial year has been £12,843 16s. 9d., and the total value of water sold during the year has been £476 13s. 6d., whilst the expenditure on maintenance during the same period has been £447 19s. 7d., thus leaving a profit on the working of £28 13s. 11d.

The following table shows the Receipts and Expenditure, the Approximate Amount of Gold obtained, and Number of Miners using the Water for the Year ending the 31st March, 1885 :—

Month.						Receipts.	Expenditure.	—	—
						£ s. d.	£ s. d.		
April	...	...	...	...	...	50 14 0	41 8 4		
May	...	...	...	...	...	57 13 9	39 2 0		
June	...	...	...	...	...	48 8 10	50 10 4		
July	...	...	...	...	...	36 18 10	27 0 0		
August	...	...	...	...	...	41 12 6	35 15 4		
September	...	...	...	...	...	33 8 0	59 16 2		
October	...	...	...	...	...	43 1 7	29 5 0		
November	...	...	...	...	...	46 13 11	25 0 0		
December	...	...	...	...	...	28 10 1	36 18 0		
January	...	...	...	...	...	27 4 10	31 10 0		
February	...	...	...	...	...	34 9 2	36 8 10		
March	...	...	...	...	...	27 18 0	35 5 9	15	500
Totals	...	...	...	...	...	476 13 6	447 19 7	15	500

The profits on working this water-race for the year have been £28 13s. 11d. or a little over one-fifth per cent. on the cost of construction. The average number of miners using water from this race has been fifteen, whilst the approximate amount of gold obtained by them is 500 ounces, representing a value of £1,912 10s. deducting from this amount the value of water sold, it leaves the average earnings of the miners to be £95 16s. 6d., this low average is accounted for by the manager as follows :—The average time that the miners were using water for the year was thirty-six weeks. Therefore, had the miners been at work for fifty weeks, (which is allowing them two weeks for holidays), their earnings would have been £133 1s. 10d. each. The total value of water sold from this water-race since it was purchased by Government, about six years ago, has been £3,093 16s. 2d., and the expenditure on maintenance during this period was £2,826 13s. 3d., showing a profit on the working during six years of £267 2s. 11d. The approximate amount of gold, as far as can be ascertained, that has been obtained by the miners during the six years is 5,014 ounces, representing a value of £19,178 11s., whilst the average number of miners using the water from this race during same period has been eighteen per annum. The value of free water given from this water-race since its purchase has been £72 17s.

Mount Ida Water-race and Sludge-channel.—These works were constructed by the Government, and the management of them was handed over to a trust on the 1st January, 1879. The total cost of these works has been £65,066 3s. 8d., and the amount of money received from sales of water and channel-fees from the time the trust took charge of them to the 31st December, 1884, has been £10,821 14s. 8d., and the expenditure on maintenance during the same period was £13,217 11s. 5d., thus showing a loss on the working of £2,395 16s. 9d. The approximate amount of gold obtained by the miners using water from this race has been 14,319 ounces, representing a value of £54,770 3s. 6d., and the average number of miners employed has been ninety-four. During the last year this water-race has been extended to Spec Gully, where the Trust anticipates a large amount of auriferous ground that will pay for working by the aid of this water-race, and thereby increase the receipts from sales of water.

Mikonui Water-race.—The construction of this water-race is being carried on by the Public Works Department, on behalf of the Mines Department, and will yet take some years before it can be completed, on account of a tunnel about two miles in length, which can only be constructed from both ends. This tunnel is now in course of construction, and about sixty chains of it completed. The lower portion of the race was completed about eighteen months ago, with the exception of fluming across the gullies. This portion is now leased to the Mont d'Or Gold Mining Company, at a rental of £100 per annum, and the lessee has to keep it in thorough good repair, and to deliver it up to the Government at any time required so to do. The cost of this water-race up to the end of March last was £22,018 12s. 4d., and its completion is estimated to cost £83,000. The total amount of rent received for the portion leased has been £150.

The following tables will show the yearly receipts and expenditure on maintenance on each of the water-races that have been constructed, together with the number of miners employed, and the approximate amount of gold obtained by the aid of these works since their completion, with the exception of the Mount Ida Water-race, which I could not obtain previous to 1879.

WAIMEA AND KUMARA WATER-RACE AND SLUDGE-CHANNEL.

Year.	Receipts.	Expenditure Maintenance.	Number of Men Employed.	Approximate Amount of Gold obtained.	Value.
	£ s. d.	£ s. d.		Oz.	£ s. d.
1879	4,765 1 7	2,000 0 0	723	22,415	85,737 7 6
1880	3,893 3 3	1,892 0 0	570	19,730	75,467 5 0
1881	4,417 17 2	3,208 19 1	511	18,907	72,319 5 6
1882	4,245 6 10	3,483 18 6	404	16,257	62,183 0 6
1883	5,580 18 0	4,406 6 7	297	11,900	45,517 10 0
1884	10,228 3 8	9,580 4 0	385	17,305	66,191 12 6
1885	12,708 12 6	9,169 18 1	371	16,971	64,914 1 6
Total	45,839 3 0	33,741 6 3	3,261	123,485	472,380 2 6

NELSON CREEK WATER-RACE.

Year.	Receipts.	Expenditure Maintenance.	No. of Men Employed.	Approximate Amount of Gold obtained.	Value.
	£ s. d.	£ s. d.		Oz.	£ s. d.
1879	1,805 12 3	1,434 2 8	67	4,659	17,820 13 6
1880	1,756 5 7	1,009 6 6	67	3,749	14,339 18 6
1881	2,070 1 1	1,496 6 3	68	3,959	15,143 3 6
1882	2,191 12 11	1,355 13 6	67	3,808	14,565 12 0
1883	2,237 6 3	1,218 17 10	61	3,748	14,386 2 0
1884	1,594 15 10	1,103 5 2	44	2,356	9,011 14 0
1885	990 6 8	811 10 5	36	1,704	6,517 16 0
Total	12,646 0 7	8,429 2 4	410	23,983	91,734 19 6

ARGYLE WATER-RACE, CHARLESTON.

Year.	Receipts.	Expenditure Maintenance.	Number of Men Employed.	Approximate Amount of Gold Obtained.	Val e.
	£ s. d.	£ s. d.		Oz.	£ s. d.
1879	...	...	...	...	...
1880	633 16 3	443 9 3	26	1,194	4,567 1 0
1881	715 2 10	487 15 7	24	1,200	4,590 0 0
1882	417 5 6	703 4 0	18	800	3,060 0 0
1883	526 11 1	372 14 10	14	720	2,754 0 0
1884	324 7 0	371 10 0	12	600	2,295 0 0
1885	476 13 6	447 19 7	15	500	1,912 10 0
Total	3,093 16 2	2,826 13 3	109	5,014	19,178 11 0

MOUNT IDA WATER-RACE.

Year.	Receipts.	Expenditure Maintenance.	Number of Men Employed.	Approximate Amount of Gold Obtained	Value.
	£ s. d.	£ s. d.		Oz.	£ s. d.
1879	1,144 5 7	1,316 18 3	120	3,000	11,475 0 0
1880	1,539 5 2	1,973 14 1	80	2,073	7,929 4 6
1881	1,913 18 2	1,773 15 11	120	3,004	11,490 6 0
1882	1,679 9 10	1,830 2 11	90	2,280	8,721 0 0
1883 { 30th April to 31st December	1,777 15 2	1,944 11 6	80	2,076	7,940 14 0
1883 {	1,545 5 11	1,877 4 2			
1884	1,211 14 10	1,501 4 7	75	1,886	7,213 19 0
Total	10,821 14 8	13,217 11 5	565	14,319	54,770 3 6

MINING.

OTAGO.—*Tuapeka*.—The plant of the Gabriel's Gully Tailings Company, generally known as "Perry's Hydraulic Sluicing Appliance," continues to do its work very satisfactorily. It is an appliance extremely well suited to work flat ground where fall suitable for ordinary box or ground-sluicing cannot be obtained. The only thing required to make it successful is a plentiful supply of water, and to have a good head so as to give great pressure. The head of water required depends, in a measure, on the nature of the material to be lifted; but it will work very effectively, and lift the dirt 15 feet high for every 100 feet of head. There are several large flats on the West Coast that are known to contain payable auriferous wash drift, if they could be sluiced, for instance, the flats alongside Nelson Creek, between Hatter's Terrace and

Drennan Brothers' farm, would pay to work by this method if the quantity of tailings that is now heaped on the surface, is not formidable to remove. A party of miners did erect a plant of this description here, but were not allowed an opportunity to test its value, owing to the ground being taken up as a tailing site. This is much to be regretted, inasmuch that, if the party had been successful, they would have been the means of the water being all utilized from the Nelson Creek water-race for several years.

OLD MAN RANGE.—White Reef.—This is a locality where there are good indications of a rich quartz-lode being found, but, up to the time of my visit in December last, there was nothing struck of sufficient importance to warrant the erection of crushing machinery. A tunnel has been driven from the face of the hill for a considerable distance, following in places a quartz leader from 6 to 10 inches wide, which contains a fair amount of gold; but the country is all very broken, and has the appearance of a slip, which I think it is, as the strata of the rock lies in every direction, with open seams and joints, having the same character as though it had at one time been a large moving mass, and crushed up the quartz leader to quartz-gravel. The appearance of the quartz resembles that in the Golden Crown Company's Mine at Terawhiti, with the exception that it is more of a ferruginous character. This is a locality well worth prospecting, but I am inclined to think that the reef, where this slip came from, is some distance back into the range. All its surroundings point in this direction, inasmuch, that there has been rich patches of alluvial gold got for a considerable distance down the face of the range, under the place where this quartz-leader has been found. After this slip had taken place, the action of the atmosphere would decompose the rock, and the rains and snow-water would wash it down the face of the hill, distributing the gold from the crushed quartz-leader all over the surface.

Carrick Range.—This is a locality where very rich quartz-lodes have worked on the surface, and I was informed that one of the companies (Royal Oak) had paid about £14,000 in dividends to the shareholders, but, after going down about 70 feet in the lode, it commenced to get too poor a nature to work. On the Royal Oak line of reefs shafts have been put down 150 feet, but at this depth the lode seemed to run out. This ground was abandoned for several years, when a company again took it up, and are at present driving a tunnel from the face of the hill at the head of Smith's Gully, to try and find the reef at a greater depth. This tunnel is now in for nearly 1,100 feet; but the present company have not yet been successful in finding any stone of a payable nature. There are several lines of reefs on this range, but none of them are being worked to any extent. The Star of the East Company have driven a tunnel, at a low level, for over 500 feet, to prospect the ground. All the work that is at present being done is of a prospecting nature. While in this district I inspected "Alves Patent Amalgamator" that was being erected at the Carrick Range to work the tailings that came from the Royal Oak Company's Battery during the time they were at work. Mr. Alves was present at the time of my visit, and stated that, from tests made by this amalgamator, it was found to extract all the free gold from the tailings, and to save the whole of the pyrites, which he proposes to treat separately. If Mr. Alves can accomplish this, which I question, he will have solved the problem of an easy method of extracting the ores from their matrix. However, his appliance is ingenious and simple, and can be erected at a comparatively small cost. A description of the method he adopts is as follows:—There is first a box about 14 feet long, 2 feet wide, and from 6 to 8 inches deep, set at an inclination of about 1 inch to the foot. The bottom of this box is covered with green baize, on the top of which a wire netting is placed, having about ten holes to the square inch. This netting is held down by two battens set on edge, one at each side of the box, and held in their places with a common wooden button. Two of these boxes are placed side by side, and at the head or upper end of them there is a hopper with screen fixed common to both. The object in this hopper is to carry the tailings and water on to a screen before they reach the box, so as to prevent any coarse material mixing amongst the stuff to be operated on. The tailings are sluiced down with a stream of water into this hopper, and, as they travel over the wire netting, each mesh forms a ripple, and by this means, Mr. Alves states, the pyrites are saved and collected. When there is a sufficient quantity of pyrites in the meshes of the netting, the water is turned off, the netting lifted, and the green baize taken up and washed in a tub placed alongside the boxes for the purpose of holding the material that collects on the baize. The hopper at the head of the boxes is so constructed that the water and tailings can be shut off either of the boxes at pleasure, so to admit of the baize being taken up, washed, and again replaced, without interfering with the working of the other. At the lower end of these boxes there is another hopper common to both, and the tailings are again screened before they are allowed to enter the amalgamator. The amalgamator is about 4 feet in width, and has a vertical box made perfectly watertight, at the upper end, into which all the water and tailings are discharged. This box is of sufficient height to have a head of water capable of balancing the mercury, which is placed in narrow gutters made of copper, and electro-plated. These gutters are about 1 inch in width, and from $2\frac{1}{2}$ to 3 inches in depth. The lower sides of the gutters close to the bottom are perforated with holes, and the water and sand have to pass through these perforations and mix with the mercury. The head of water being sufficient to keep the mercury in a partially revolving state which, Mr. Alves contends, prevents it from going through these perforations. After the water and sand have passed through two of those gutters containing mercury, they are forced down on the surface of a mercury-well by means of a balanced lever attached to a weighted bar, the bottom of which is covered with electro-plated copper, have recesses or grooves, so as to press down in amongst the mercury. The underside of this bar is the same width as the well where the mercury is placed, and its weight is sufficient to keep it down on the surface; but, being balanced by a weight on the lever, the pressure or head of water causes it to rise sufficiently to allow the sand and water to get away, and run down an inclined electro-plated copper sheet charged with mercury. This sheet is the width of the amalgamator, viz., 4 feet and 2 feet in length. At the bottom of this there is a small well for the quicksilver collecting; thence the tailings goes away as wash product. The cost of this appliance is about £50, and if it is successful in its operations it will be readily adopted by quartz companies, as the cost is but trifling. From the principle on which it is constructed there is little doubt but what it will save a certain percentage of the gold, but I have doubts about it not losing mercury, and, if so, it is certain to lose gold.

LAKE DISTRICT.—Invincible Company's Mine.—This mine is situated about fifteen miles up the Rees River at the head of Lake Wakatipu, about 1,400 feet above the level of the lake, and contains the

largest quartz lode there is in the district. At the time of my visit in December last they were working from the first level and stoping out the quartz to within 80 feet of the surface. The lode was worked for about 250 feet in length, which was from 7 to 12 feet in thickness. In stoping out the lode there is scarcely any blasting required, as the quartz is of a loose character. A deal of timber is required to keep the ground up until each stope is worked. In some places it has to be closed, lathed, and face-boards used to prevent the quartz in the lode from running. There is more pyrites in this lode than I have seen in any other in the colony, and these pyrites, according to an assay made by Professor Black, went over 11 ounces of gold per ton; yet no effort was made at the time to save it, but I have since learned that the company have given all their tailings that comes from their crushing-battery for a period of three years to a party, on consideration of receiving 15 per cent. of the gold that the pyrites contain. This company has a crushing-battery of ten head of stamps, weighing 8 cwt. each, which are driven by an overshot water-wheel. They use blanket tables, but no copper plates nor quicksilver wells. The blankets are washed out at intervals, and the stuff from them is afterwards crushed in a berdan. This mine is one of the most valuable mining properties there is in Otago at the present time, and the gold that the pyrites contain, if properly treated, ought to pay the shareholders handsome dividends, even if although the quartz by their present method of crushing only paid expenses. The quantity of quartz crushed last year was 3,173 tons, which yielded 2,226 ounces of gold. There are several companies in this locality which have taken up quartz leases, but the work yet done on them is only of a preliminary character. The road from the head of Lake Wakatipu to those mines, especially where it leaves the flat alongside of the Rees River to go up the range, is not suitable for getting machinery brought on to the ground, and deters to a great extent the development of the mines.

Phoenix Mine, Skipper's.—This is a mine which has been almost worked continuously for about twenty-two years, although a great portion of the time the work has been of a prospecting nature; latterly very rich stone has been found in the low levels, having the reef well defined, and has every appearance of continuing to go down to a good depth. There are three distinct lodes in this mine, viz., the north lode, which is about 450 feet long and from 1 to 2 feet thick, where the workings were at the time of my visit; the middle lode which shows gold well distributed through the stone, is 800 feet long and from 3 to 4 feet thick; and the south, or what is known as the "Promised Land," lode is about 4 feet wide and 150 feet in length. The whole of these lodes contain stone of a highly payable nature, with every appearance of continuing. This mine belongs to Messrs. Bullen Bros., of Melbourne, who have spent an immense sum of money in prospecting and opening it out, without, until very recently, getting any returns. They have a crushing-battery of 20 heads of stamps, with quicksilver and blanket-tables, but no berdans or any appliance to save the pyrites that the quartz contains. This battery is driven by an overshot water-wheel, but as Messrs. Bullen Bros. have only the second right to the water in Skipper's Creek, they cannot keep their crushing battery at work in dry weather. They have recently made arrangements to erect a large dynamo to drive their battery, and when this is completed, and if successful as a motive power, they will be able to crush continuously for about seven or eight months in the year. The quantity of quartz crushed during the year has been 1,456 tons, which yielded 2,913 ounces of gold.

There are other mines in this locality, but the great drawback to their development is the want of a proper road. It is astonishing what has been done here, and the machinery that there is on the ground, with the miserable horse track at present used.

Tipperary Mine, Macetown.—This is a mine that is extremely well conducted, and has been giving returns so as to enable dividends to be paid to the shareholders since it was first opened. The lode is from 3 to 4 feet wide, having foot and hanging-walls well defined, and has every appearance of continuing to go down to a good depth. The company that own this mine are working it at the present time below the deepest level that can be got, by tunnelling in from the face of the range, and are hauling up the quartz on an inclined tramway, by means of a water-balance, from about 50 feet below the bottom of their tunnel. They can only work their crushing battery for about seven months in the year, owing to the large amount of frost and snow there is during the winter months. There has been 2,032 tons of quartz crushed during the year, which yielded 1,968 ounces of gold.

Premier Mine, Macetown.—This mine, during last year, has turned out a fair amount of gold, and has the appearance of continuing to do so in future; but the present system of working increases the cost of raising the quartz considerably above what it could be stoped out for if a deeper level was constructed. At the time of my visit in December last, 517 tons of quartz had been crushed since September previous, and the amount of gold obtained was 498 ounces. This may be considered very encouraging, seeing that the lode is from 3 to 6 feet in thickness. The company has crushed 1,104 tons of quartz during the year, which yielded 1,032 ounces of gold.

The only other quartz company at work is the New All Nations, which have crushed a few tons of quartz during the season, and have given satisfactory results; but the work yet done has been of a prospecting nature. There are four crushing plants in this district, all driven by water-power, and have batteries of ten heads of stamps each.

Criffel Diggings.—This is a field that has only recently become generally known. It is situated on the top of the range, between the Cardrona River and Luggate Creek, about 4,000 feet above sea level. A party consisting of three miners has been working here for about two years; but it was only during last year, that rich, auriferous ground was discovered. From its high elevation, it can only be worked during the summer months; but from the rich deposits that have been found, and the apparent extent of auriferous country there is in the locality, it is likely to support a considerable mining population next summer—when fresh discoveries will probably be made. There were about fifty miners on the ground during the latter portion of last season, and the amount of gold that has been purchased from this field is about 1000 oz., of which amount the three prospectors obtained 300 oz.; but this was principally from ground that they worked the previous season, and had stacked ready for washing when the snow melted, which gave them a supply of water. They have about 1,700 loads of wash-dirt again stacked ready for washing next spring. The great draw-back to this field is the want of a plentiful supply of water, as it is ground specially adapted for sluicing. A water-race is at present being constructed from the Luggate Creek, but the parties that are constructing it do not anticipate being able

to supply any other claim-holders with water, as they consider it will be more advantageous to use the whole of it themselves. There is likewise no passable road to get timber and supplies brought upon the ground—at present, packhorses manage to get up on the top of the range with provisions but the track is a very bad one.

Mount Ida District.—There have been no new discoveries in this district during the past year, and from the primitive appliances that are still used in many places yet for extracting the gold, it is not likely to progress very fast. There are indications of large auriferous deposits, in what is termed, the “white drift” formation, which extends over a large area; this formation is found at Tinker’s, and extends up the valley of the Manuherikia River, following up the side of the range to St. Bathans, and thence across to Naseby, Mount Burster and Livingstone, the quartz portion of which is yet untried. Very rich patches of gold have been obtained from this drift, which consists of quartz sand and pebbles, and appears to be of a very old formation, it is certainly older than the lignite seams, which almost invariably rest upon it. These drifts, as far as yet found, rest on the schist rock, but has suffered very considerable disturbance since it was deposited, its strata being at all angles from horizontal to perpendicular, but always corresponding to the angle of the rock that it is lying against, and in almost every instance found to be auriferous although, generally, very poor; it requires a good supply of water to work it in order to run away a large quantity of stuff, to make it pay. To do this entails a large expenditure in extension tail and head-races; encouragement should be given to those who are willing to work this drift on an extensive and systematic scale, in giving them large areas of ground so as to remunerate them for their labour. The shallow alluvial deposits are getting gradually worked out, so that the individual miner, unless a man with a large capital, cannot undertake so extensive operations as this white drift requires, to make it a remunerative investment, capital will have to be combined with labour, and every encouragement given to ensure the successful development of this large auriferous deposit; this will probably be best accomplished by giving large areas of ground and making stipulations for a proper method of working it on an extensive scale.

The Mount Ida Water-race that was constructed by the Government, and now managed by a Trust, commands a large area of country, when this quartz drift is found, and if payable gold were found in the deep ground it would be the means of employing a large population and utilize the water from this race.

St. Bathans.—This is a locality where hydraulic sluicing is carried on in an extensive scale. A large tail-race is being constructed from the Dunstan Creek to work the auriferous quartz-drift in the basin, below the Township of St. Bathans. It is 12 feet wide in the bottom and lined with stones on the sides from 3 to 4 feet high, and thence a capping of sod and scrub. When completed it will be about one mile sixty chains in length, and will enable the ground to be worked to a depth of 80 feet below the level of the present workings. The several claim holders having claims in this basin joined together and formed a company to construct this channel, each taking a number of shares in proportion to the quantity of ground held by them. They started with a capital of £2,700, but the greater portion of this is expended, and the channel is not more than about half completed. The fall or inclination of this channel is 1 in 100 up to a point where a large flushing race has been constructed from Dunstan Creek. Above this flushing race it will have several grades in proportion to the quantity of water that can be brought into it for flushing. At Cambrian’s, about four miles from St. Bathans, a considerable number of men were for many years profitably employed; but this place is now almost deserted, the miners having shifted up to Vinegar Hill, where very extensive sluicing operations are carried on. One of the most enterprising miners in Otago lives at this place, Mr John Ewing. He has spent several thousand pounds in opening out claims and constructing works in the vicinity of St. Bathans, and the systematic manner in which he carries on his operations, generally make them of a remunerative character. He is carrying on at the present time large hydraulic sluicing operations at Vinegar Hill, but the return from this place is not so large or so regular as in former years. The shallow ground is becoming exhausted, and the great difficulty that claim holders have to contend with in constructing long tail-races require large returns to pay them for their outlay, as the areas of ground that each hold are comparatively small.

Rough Ridge.—There has been several attempts made to revive the quartz-mining industry in this locality, but hitherto they have not been successful. A joint stock company known by the Otago Central, is now driving a tunnel to try and cut the quartz-lodes at a lower level, and have been so far successful in cutting a lode from 12 to 20 inches in thickness, showing gold distributed through the stone. It is to be hoped that this stone will prove on crushing to be of a payable nature, so as to give an impetus to quartz-mining in this locality.

Serpentine.—The quartz reefs in this locality, from which so much was expected, are being developed very slowly. In some of the mines good payable stone has been found, but it does not appear to carry gold sufficient to pay for any great depth. The deeper the lode gets, the more heavily it is charged with other minerals, which prevents the gold from being absorbed in the quicksilver. The pyrites, which contain a large percentage of sulphur and arsenic, would tend to produce this effect. A new line of reef, known as “Turnbulls” has been opened during the year, the crushings from which have averaged four ounces from the ton. On account of the high elevation of this reef, very little work can be done during the winter months.

Kyeburn.—A considerable number of miners still find profitable employment in this locality, and some are said to be doing very well. On the Kyeburn Peninsula and along the foot of Mount Burster, between the Kyeburn River and the Little Kyeburn, and on towards Mount Ida, there is said to be a large area of payable auriferous ground if water were available, but the quantity of water is limited and in few hands. At Mount Burster, where the workings are situated nearly 4,000 feet above sea level, the claims that are at work continue to yield a sufficient quantity of gold to give handsome returns to the shareholders; but the quantity of water here is very limited. It is chiefly obtained from the melting snow on the surrounding peaks, and it is only about seven months in the year that mining operations can be carried on.

Hamilton’s.—Several parties of miners at Shepperd’s Flats have gone to considerable expense in constructing tunnels, long distances through rock, to provide sluicing outlets from their claims, and likewise in tunnelling into the hill behind the old Hamilton workings, and I was informed they were getting fairly paid for their outlay.

Rock and Pillar.—A small discovery was made last summer by a party of miners from Hyde on the Rock and Pillar range, but it has not, so far, proved extensive. All the auriferous ground that is known to be payable has been taken up by a few parties, and as it is of shallow nature, it will be quickly worked out.

Orepuki.—There are still a good many miners working in this locality, with long tail-races to the ocean beach, and from what I could learn, are making fair wages. A seam of both coal and shale has been struck here during the last year. It is situated about one mile from the railway terminus at Orepuki. The quality of the shale will compare favourably with that found in the Newcastle district of New South Wales.

Value of Works Constructed.—The total value of works during the last three years, for the development of the mines, that have been wholly undertaken by the Mines Department, or by subsidies to County Councils, Local Bodies, and Mining Companies, and the amount expended by the Department, and the liability on the same, are as follows :—

	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.
Water-races	34,107 12 9	29,449 12 2	4,658 0 7
Roads on goldfields	35,105 1 3	22,720 5 6	12,384 15 9
Roads undertaken by County Councils and subsidized by Mines Department	66,408 11 1	28,138 13 1	12,739 17 6
Road to mines, other than gold, subsidized by Mines Department	4,594 10 0	111 19 0	2,888 1 0
Works undertaken by prospecting associations and companies, and subsidized by Mines Department	14,066 13 4	3,458 0 0	3,692 0 0
Construction of Sludge and Drainage Channels, subsidized by Mines Department	9,800 0 0	3,518 15 4	1,931 4 8
Diamond and other Drills	3,600 0 0	1,858 0 0	...
Total	167,682 8 5	89,255 5 1	38,293 19 6

Deducting the value of works constructed and in progress at the end of March, 1884, it leaves £45,174 15s. 11d. for new works undertaken during last year, of which sum the Government contribution amounts to £34,797 10s. 4d.

Annexed is a list taken from the departmental records of works that have been constructed, and are in progress, to assist in developing the Gold Fields.

HENRY A. GORDON,
Inspecting Engineer.

The Under-Secretary for Mines, Wellington.

LIST of WORKS ON GOLD FIELDS undertaken wholly by the Mines Department, or by Subsidies to County Councils, Local Bodies, and Prospecting Associations, in progress on the 31st March, 1885.

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.		
	£	s.	d.	£	s.	d.	£	s.	d.
ROADS (subsidized.)									
<i>Coromandel County.</i>									
Making and repairing track from Kapanga Mine to Paul's Creek ...	290	0	0	...	...	...	193	6	8
Extension Vaughan and Vizard's Track ...	300	0	0	100	0	0	100	0	0
Extension of track, Tiernan's to Castle Rock ...	150	0	0	...	...	...	100	0	0
Road from Lynch's paddock to Matawai Battery ...	180	0	0	...	...	...	120	0	0
Widening road from Emily Battery to Rocky Creek ...	126	0	0	40	0	0	44	0	0
Road deviation, from Fraser's saw-mill to Tiki Saddle ...	300	0	0	...	...	...	200	0	0
Prospecting track to connect Tokatea and Tiki ...	300	0	0	...	...	...	200	0	0
Widening and extending road to Harbour View ...	100	0	0	...	...	...	66	13	4
Widening and extending road to Harbour View Mines ...	150	0	0	...	...	...	100	0	0
Making and improving track Golden Belt to Tiki ...	245	0	0	159	8	10	3	17	10
Track Bismark Battery towards Kennedy Bay ...	250	0	0	...	...	...	166	13	4
Continuation of Waikoromiko Track ...	100	0	0	...	...	...	66	13	0
Continuation of Success Track ...	200	0	0	...	...	...	133	6	8
Road, Makarau towards Wairau ...	300	0	0	...	...	...	200	0	0
Road, Old saw-mill towards Awakanae ...	400	0	0	...	...	...	266	13	4
	3,391	0	0	299	8	10	1,961	4	6
<i>Thames County.</i>									
Prospecting track to open up Karangahake Gold Field, extending towards Te Aroha ...	1,334	0	0	522	14	0	366	6	0
Track up Maungawherawhera Creek ...	100	0	0	...	...	...	66	13	4
Metalling road, Kaueranga Valley to Otanui Creek ...	650	0	0	237	19	8	195	7	0
Road from Tapu Battery to Mines ...	160	0	0	...	...	...	106	13	4
Road to Ohinemuri Coal Field ...	250	0	0	...	...	...	166	13	4
Road to Wick's Battery ...	70	0	0	...	...	...	46	13	4
Bridge over Ohinemuri River near Karangahake ...	416	0	0	40	0	0	237	13	4
	2,980	0	0	800	13	8	1,185	19	8
<i>Tuapeka County.</i>									
Improving Road from Lawrence and Waipori road to Antimony Mine, Waipori ...	200	0	0	...	...	...	133	6	8
Improving road from Waitahuna River to top of terraces on the road to Copper Mine ...	200	0	0	...	...	...	133	6	8
Track from Roxburgh Road to Shingle Creek to Campbell's and Pomohaka Creeks ...	450	0	0	...	...	...	200	0	0
	850	0	0	...	...	...	566	13	4
<i>Tairi County</i>									
Road from Mullocky Gully to Silver Peak ...	600	0	0	200	0	0	200	0	0
<i>Southland County.</i>									
Improving road through Waikaia Bush ...	150	0	0	...	...	...	100	0	0
Road Waikaia to Whitcombe ...	150	0	0	...	...	...	100	0	0
Road Waikaka to Switzers ...	150	0	0	...	...	...	100	0	0
Road near Waikaka Township ...	150	0	0	...	...	...	100	0	0
	600	0	0	...	...	...	400	0	0
<i>Wallace County.</i>									
Improving road, Colac Bay to Round Hill ...	200	0	0	...	...	...	133	6	8
Track to Round Hill, Colac, and Orepuki ...	525	0	0	...	...	...	350	0	0
	725	0	0	...	...	...	483	6	8
<i>Westland County.</i>									
Track, Ross Borough boundary to Mount Greenland ...	1,440	0	0	...	...	...	960	0	0
Track, Kanieri Lake to Humphrey's Gully ...	560	0	0	...	...	...	373	6	8
Track, Larrikin's to Loop-line Dam ...	500	0	0	...	...	...	333	6	8
Track, Rough Wahinini to Upper Dam Kawhaka ...	450	0	0	...	...	...	300	0	0
Extension of Track, Gentle Annie Terrace ...	220	0	0	...	...	...	146	13	4
Track, Okarito Forks to Teal Creek ...	600	0	0	...	...	...	400	0	0
	3,770	0	0	...	...	...	2,513	6	8
<i>Grey County.</i>									
Track, Kangaroo Forks to Blackwater ...	150	0	0	...	...	...	100	0	0
Track, Black Water, Red Jacks to Nelson Creek ...	450	0	0	...	...	...	300	0	0
Track, Red Jack's to Nelson Creek ...	150	0	0	...	...	...	100	0	0
Track, Mackley Station to Clarke's River ...	1,200	0	0	...	...	...	800	0	0
Road, Barrytown to Deadman's ...	2,240	0	0	...	...	...	1,493	6	8
Track, Cameron's to Cape Terrace ...	700	0	0	228	0	0	238	13	4
	4,890	0	0	228	0	0	3,032	0	0
<i>Inangahua County.</i>									
Road, Owen River to Uno Battery ...	300	0	0	...	...	...	200	0	0
Road, Reefton to Big River ...	1,792	0	0	464	0	0	734	13	4
	2,092	0	0	464	0	0	930	13	4

LIST of WORKS on GOLD FIELDS—*continued.*

Locality and Nature of Works.	Total Cost or Amount Authorised.	Amount of Con- tributions paid by Mines Department.	Amount due by Mines Depart- ment on Works still in progress.
	£ s. d.	£ s. d.	£ s. d.
ROADS, &c.—<i>continued.</i>			
<i>Buller County.</i>			
Track, Northern Terrace to Oparara, Karamea ...	500 0 0	...	333 6 8
Road, to connect alluvial diggings with Westport and Charleston Road	400 0 0	...	266 13 4
Track, Four-mile to Grey Valley ...	300 0 0	...	200 0 0
Road to connect alluvial diggings north of Deadman's ...	200 0 0	...	133 6 8
Track, Lyell Bluff to Victor Emanuel Claim ...	650 0 0	...	433 6 8
Track, to connect beach at Little Wanganui with track leading to Moki- hinui	150 0 0	...	100 0 0
	2,200 0 0	...	1,466 13 4
ROADS TO MINES OTHER THAN GOLD.			
<i>Nelson.</i>			
Road from Aniseed Valley to Champion Copper Mine ...	4,350 0 0	111 19 0	2,788 1 0
Track over Richmond Hill to Copper Mine ...	224 10 0	...	100 0 0
	4,594 10 0	111 19 0	2,888 1 0
SLUDGE AND DRAINAGE-CHANNELS (Subsidized)			
Pipe-Clay Gully, Bannockburn (estimated) ...	750 0 0	217 14 4	182 5 8
Smith's Gully, Bannockburn (estimated)* ...	2,000 9 0	251 1 0	598 19 0
Tail-race, Ophir (estimated) ...	1,500 0 0	...	750 0 0
Muddy Creek, St. Bathans's (completion) ...	1,000 0 0	150 0 0	350 0 0
Round Hill (survey) ...	50 0 0	...	50 0 0
	5,300 0 0	618 15 4	1,931 4 8
ROADS IN PROGRESS.			
	£ s. d.	£ s. d.	£ s. d.
Arthurs's Point to Skippers ...	5,295 0 0	2,669 17 3	2,625 2 9
Brighton to 17-mile Diggings (survey) ...	1,350 0 0	1,199 9 4	150 10 8
Cobden to 17-mile Diggings ...	1,958 8 6	1,154 3 4	804 5 2
Mokihinui to Karamea, via Rough and Tumble... ..	7,611 8 7	3,825 1 11	3,786 6 8
Deep Creek, Wakamarina to reefs ...	20 0 0	11 0 0	9 0 0
Mokihinui quartz reef to Specimen Creek ...	1,500 0 0	...	1,500 0 0
Ahaura to Amuri ...	2,600 0 0	78 9 6	2,521 10 6
To open up Wilberforce quartz reefs ...	1,000 0 0	12 0 0	988 0 0
	21,334 17 1	8,950 1 4	12,384 15 9
WATER-RACES.			
Argyle Water Race, Charleston ...	6,972 0 0	5,695 16 7	1,276 3 5
Waimea-Kumara Water-race ...	10,645 15 5	10,478 13 9	167 1 8
Nelson Creek Water-race ...	269 5 6	69 5 6	200 0 0
Mikonui Water-race ...	13,385 19 8	10,371 4 2	3,014 15 6
Mount Ida Water-race ...	2,400 0 0	2,400 0 0	...
Contingencies ...	434 12 2	434 12 2	...
	34,107 12 9	29,449 12 2	4,658 0 7
PROSPECTING (Subsidies).			
Deep Level Tunnel, Reefton ...	6,900 0 0	1,858 0 0	1,592 0 0
Deep Level Tunnel, Boatman's ...	300 0 0	...	150 0 0
Cardrona Prospecting Association ...	800 0 0	200 0 0	200 0 0
Deep Lead, Naseby ...	1,066 13 4	300 0 0	350 0 0
Tuapeka Prospecting Association ...	900 0 0	300 0 0	150 0 0
Caledonian Low Level Company, Thames ...	300 0 0	75 0 0	75 0 0
Queen of Beauty Company, Thames ...	300 0 0	75 0 0	75 0 0
Manuka Flat, Lyell ...	1,250 0 0	...	500 0 0
Kanieri Coal seam, Kanieri ...	900 0 0	...	300 0 0
Red Hill Gold Mining Company ...	600 0 0	...	300 0 0
	13,316 13 4	2,808 0 0	3,692 0 0
SUMMARY OF WORKS.			
	£ s. d.	£ s. d.	£ s. d.
ROADS ON GOLDFIELDS (subsidized).			
Coromandel County ...	3,391 0 0	299 8 10	1,961 4 6
Thames County ...	2,980 0 0	800 13 8	1,185 19 8
Tuapeka County ...	850 0 0	...	566 13 4
Taieri County ...	600 0 0	200 0 0	200 0 0
Southland County ...	600 0 0	...	400 0 0
Wallace County ...	725 0 0	...	483 6 8
Westland County ...	3,770 0 0	...	2,513 6 8
Grey County ...	4,890 0 0	228 0 0	3,032 0 0
Inangahua County ...	2,092 0 0	464 0 0	930 13 4
Buller County ...	2,200 0 0	...	1,466 13 4
	22,098 0 0	1,992 2 6	12,739 17 6

* It has subsequently been found that this work is abandoned and the balance of subsidy has since been cancelled.

LIST OF WORKS ON GOLD FIELDS—continued.
SUMMARY OF WORKS.—continued.

Locality and Nature of Work.	Total Cost, or Amount Authorized.	Amount of Con- tributions paid by Mines Department.	Amount due by Mines Depart- ment on Works still in progress.
Roads to mines other than gold	4,594 10 0	111 19 0	2,888 1 0
Sludge and drainage-channels (subsidized)	5,300 0 0	618 15 4	1,931 4 8
Roads in progress	21,334 17 1	8,950 1 4	12,384 15 9
Water-races	34,107 12 9	29,449 12 2	4,658 7 0
Prospecting (subsidies)	13,316 13 4	2,808 0 0	3,692 0 0
Totals	100,751 13 2	43,930 10 4	38,293 19 6

LIST of WORKS on GOLD FIELDS constructed wholly by the Mines Department, or by Subsidies to County Councils, Local Bodies and Prospecting Associations, and completed on the 31st March, 1885.

Locality and Nature of Work.	Total Cost.	Amount of Contribution paid by Mines Department.
	£ s. d.	£ s. d.
ROADS.		
<i>Coromandel County.</i>		
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
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 Valley 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
	1,828 3 3	1,218 15 6
<i>Thames County.</i>		
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, Waitaki	258 18 10	172 12 7
	2,131 19 10	1,421 6 7
<i>Piako County.</i>		
Extension and completion of tramway	18,000 0 0	9,000 0 0
<i>Hutt County.</i>		
Road to connect Otorongo Bay with Albion Company's battery, also to connect Tera-whiti quartz mine with battery	509 16 6	210 17 0
<i>Tuapeka County.</i>		
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 Mine, Lammerlaw Ranges	200 0 0	133 6 8
Waipori Township to Waipori Bush	200 0 0	133 6 8
	1,000 0 0	666 13 4
<i>Southland County.</i>		
Improving road from Mataura to Nokomai	75 0 0	50 0 0
Improving road, Waikaka to Leatham, leading to Whitcombe	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 from Waipapa to Waikawa	150 0 0	100 0 0
	555 0 0	370 0 0

LIST OF WORKS ON GOLD FIELDS, &c.—*continued.*

Locality and Nature of Work.	Total Cost.	Amount of Contribution paid by Mines Department.
<i>ROADS—continued.</i>		
<i>Westland County.</i>		
Improving track, Butchers' Creek to Gentle Annie Terrace	£ s. d. 120 0 0	£ s. d. 80 0 0
Bridle track to Kanieri Lake	719 11 0	359 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 15-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
	2,754 16 0	1,611 2 4
<i>Grey County.</i>		
Road from No Town to Deep Creek	1,100 0 0	550 0 0
Rod from Langdon's to Moonlight	1,600 0 0	800 0 0
Contribution from gold fields vote towards main road	2,296 6 6	2,296 6 6
	4,996 6 6	3,646 6 6
<i>Inangahua County.</i>		
Dray-road from Soldier's Creek to Devil's Creek	647 0 0	431 6 8
Dray-road from Inangahua River to Rainy Creek battery	909 10 0	606 6 8
Dray-road from Capelstown up Little Boatman's Creek	379 0 0	252 13 4
Dray-road from Capelstown 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 Capelstown	358 0 0	238 13 4
Survey and expenses	250 0 0	166 13 4
Track from Carribo to Big River	728 0 0	364 0 0
Dray-road up Murray Creek to United Inglewood claim	3,472 2 6	2,314 17 4
Road from Reefton to Big River, <i>via</i> 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 Capelstown to Larry's Creek	640 0 0	426 13 4
	10,105 11 0	6,540 0 8
<i>Buller County.</i>		
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 Razor Back to Paparoa Range	100 0 0	66 13 4
Track from Seatonville to Larrikins	438 9 6	292 6 4
Waimangaroa to Denniston	787 0 0	393 10 0
	1,952 8 0	1,170 8 8
<i>Collingwood Road Board.</i>		
Road, West Wanganui	300 0 0	200 0 0
<i>Maniototo County.</i>		
Road to Serpentine diggings	136 10 0	91 0 0
<i>DIAMOND AND OTHER DRILLS.</i>		
Inangahua County Council (diamond)	2,000 0 0	1000 0 0
Springfield Colliery Company (diamond)	1,250 0 0	625 0 0
Westland County Council (tiffin)	350 0 0	233 0 0
	3,600 0 0	1,858 0 0
<i>AIDS TO PROSPECTING.</i>		
Construction of Low Level Tunnel, Terawhiti	750 0 0	150 0 0
Tuapeka Prospecting Association	600 0 0	300 0 0
Cardrona Prospecting Association	400 0 0	200 0 0
	1,750 0 0	650 0 0
<i>DRAINAGE CHANNELS.</i>		
Drainage channel, Lawrence; (total cost approximate)	3000 0 0	2000 0 0
Subsidy towards purchase of Messrs Laidlaw & Crawford's freehold in Spottis Creek to allow tailings to be deposited (Tinker's diggings)	500 0 0	400 0 0
Damaged by floods, Thames	1000 0 0	500 0 0
	4,500 0 0	2,900 0 0
<i>ROADS WHOLLY CONSTRUCTED BY GOVERNMENT.</i>		
Lyell to United Italy Claim, Eight-mile	2,899 17 6	2,899 17 6
Reconnaissance survey of road United Italy Claim, Eight-mile to Seatonville, Mokihinui	300 0 0	300 0 0
Construction of road Arrowtown to Macetown	9,570 6 8	9,570 6 8
Road to open up Woodstock Gold Field	1000 0 0	1000 0 0
	13,770 4 2	13,770 4 2

LIST OF WORKS ON GOLD FIELDS, &c.—continued.
SUMMARY.

Locality and Nature of the Work.						Total Cost.	Amount of Con- tribution paid by Mines Depart- ment.
ROADS. <i>Subsidies to County Councils, &c.</i>						£ s. d.	£ s. d.
Coromandel County	...	...	...	...	...	1,828 3 3	1,218 15 6
Thames County	...	...	...	...	...	2,131 19 10	1,421 6 7
Piako County	...	...	...	...	...	18,000 0 0	9,000 0 0
Hutt County	...	...	...	...	...	509 16 6	210 17 0
Tuapeka County	...	...	...	...	...	1,000 0 0	666 13 4
Southland County	...	...	...	...	...	555 0 0	370 0 0
Westland County	...	...	...	...	...	2,754 16 0	1,611 2 4
Grey County	...	...	...	...	...	4,996 6 6	3,646 6 6
Inangahua County...	...	...	...	...	...	10,145 11 0	6,540 0 8
Buller County	...	...	...	...	...	1,952 8 0	1,170 8 8
Maniototo County...	...	...	...	...	...	136 10 0	91 0 0
Collingwood Road Board	...	...	...	...	...	300 0 0	200 0 0
						44,310 11 1	26,146 10 7
Aids to prospecting	...	...	...	...	...	1,750 0 0	650 0 0
Diamond and other drills	...	...	...	...	...	3,600 0 0	1,858 0 0
Drainage-channels and Tail-races	...	...	...	...	...	4,500 0 0	2,900 0 0
Roads wholly constructed by Government	...	...	...	...	...	13,770 4 2	13,770 4 2
Totals	...	...	...	...	...	67,930 15 3	45,324 14 9

RETURN showing the RECEIPTS, EXPENDITURE, and COLLATERAL ADVANTAGES derived by the working of the WATER RACES constructed and maintained by Government, during the Year ending the 31st March, 1885.

Name of Water Race.	Receipts.	Maintenance.	Profit or Loss.	Cost of Construction.	Total Cost of Construction.	Per centage on Capital Invested.	Number of Men employed.	Approximate amount of Gold obtained.	Value of Gold obtained.	Average earnings of men after deducting sales of Water.
Waimea	£ s. d. 1,664 1 1	£ s. d. 1,352 3 5	£ s. d. *311 17 8	£ s. d. 118,575 15 2	£ s. d. 173,176 10 7			Ozs.	£ s. d. 64,914 1 6	£ s. d. 138 7 0
Kumara	£ s. d. 9,311 16 4	£ s. d. 1,656 0 1	£ s. d. *7,655 16 3	£ s. d. 37,490 2 11	£ s. d. 173,176 10 7	About 12 %	371	16,971	£ s. d. 64,914 1 6	£ s. d. 138 7 0
Kumara Sludge Channel	£ s. d. 1,732 15 1	£ s. d. 6,161 14 7	£ s. d. +4,428 19 6	£ s. d. 17,200 12 6	£ s. d. 173,176 10 7					
Nelson Creek	£ s. d. 990 6 8	£ s. d. 811 10 5	£ s. d. *178 16 3	£ s. d. ...	£ s. d. 89,833 19 7	About one-fifth %	36	1,704	£ s. d. 6,517 16 0	£ s. d. 153 10 10
Argyle	£ s. d. 476 13 6	£ s. d. 447 19 7	£ s. d. *28 13 11	£ s. d. ...	£ s. d. 12,843 16 9	About one-fifth %	15	500	£ s. d. 1,912 10 0	£ s. d. 95 16 6
Mikonui	£ s. d. 100 0 0	£ s. d. Nil	£ s. d. *100 0 0	£ s. d. ...	£ s. d. 22,018 12 4	In construction				
Total	£ s. d. 14,275 12 8	£ s. d. 10,429 8 1	£ s. d. 3,842 4 7	£ s. d. 173,176 10 7	£ s. d. 297,872 19 3	1½ nearly	422	19,175	£ s. d. 73,344 5 6	£ s. d. 138 2 6

* Profit. + Loss.

NOTE.—The Waimea, Kumara, and Kumara Sludge Channel, although shown separately, are worked together, and under one management, therefore considered as one work.

HENRY A. GORDON,

Inspecting Engineer.

WARDENS' AND WATER-RACE REPORTS.

AUCKLAND GOLD FIELDS.

No. 1.

Mr. Warden KENRICK to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Thames, 15th May, 1885.

I have the honour to forward herewith the annual report upon this portion of the Hauraki Goldfield.

2. At Tapu, in the northern portion of the Thames District, some small but valuable finds have been made during the year. A good deal of prospecting has been done, with satisfactory results. An effort is being made to get in a low-level tunnel with a view to drain a considerable extent of gold-bearing country. Should the necessary capital be forthcoming a considerable amount of work would at once be taken in hand, with, I think, a fair prospect of success. At any rate, those interested seem sanguine as to the result.

3. A very large extent of almost unknown country awaits the prospector between the recent discovery at the Manaia (Coromandel) and Tapu. As usual the want of tracks through a rugged, heavily-timbered country retards mining operations.

4. At the Thames proper the principal work done during the year has been the prospecting at the deep levels, carried on by the Caledonian Low-Level Tribute Company and the Deep-Level Cross Company. One satisfactory result has been obtained, *i.e.*, the proving that gold does exist at a much lower level than has hitherto been admitted, the Caledonian Low-Level Company having discovered gold-bearing stone in their drive 640ft. below sea-level. Whether it exists in payable quantities remains to be proved.

5. The one great difficulty to be contended with in working these low levels is the cost of drainage. At present, the cost of keeping the water down to the 640ft. level is £450 a month. The work is done by the Deep-Level Cross Company, who own the drainage machinery known as "The Big Pump." The above-named amount, required for working expenses and repairs, has hitherto been contributed by the various companies interested, assisted by a subsidy from the Borough and County Councils, who are also interested, inasmuch as they receive the gold duty. Trouble has always been experienced in collecting the full amounts agreed to be paid by the various companies, so much so that the owners of the machinery have had to contribute, during the last three years, some £3,000 to make up deficiencies. The individual assessment has been arrived at by a sort of compulsory agreement; in other words, the company that could least afford to dispense with the drainage had to pay the largest assessment. During the present year an effort has been made to arrive at some equitable basis upon which to make these assessments, but the legal difficulties in the way are too many, and will remain so until some much-needed amendments are made in the Gold-mining Districts Act of 1873. Power should be given to fix a drainage area. This question is one of vital importance to the Thames, for, if the contributions at present paid for drainage should fall off, there is but little doubt that the pump would be stopped, with disastrous results to the district, quite apart from the heavy loss of capital already sunk in the mines. Indeed, the mere possibility of this stoppage has had a deterrent effect upon the investment of capital. It is much easier to point to the facts than to discover a remedy, but undoubtedly the first and most necessary step would be the amendment of the existing law in the direction of giving power to elect a Drainage Board from amongst and by those interested, conferring full powers on the Board to fix the drainage area, and assess all within that area in any form that experience may shew to be best, *i.e.*, rating ground and companies in proportion to benefits derived, either from depth of workings, or yield of gold, or both.

6. The unfortunate accident to the Queen of Beauty Mine (which will be reported on by the Mining Inspector), occurring as it did at a time when, after large expenditure, they had reasonable grounds for expecting some return (gold having been found in their lowest level), has quite disheartened the shareholders, who have determined—somewhat hastily, many believe—to wind up the company.

7. The stoppage of all work in this mine, throwing, as it does, many men out of employment, is most unfortunate for the district, which, in common with the rest of the colony, has been passing through a period of depression, intensified in this particular locality by the unusually dry summer we have been having.

8. Want of water has not only stopped the batteries, but the saw-mills, no logs having come down to the mills for many months. A large number of men have for some time been out of employment through these stoppages.

9. The "find" in the Cambria Claim, in the vicinity of the Waiotahi Creek, has done something to make up for the decreased yield from the Prince Imperial and other mines. It has also been the means of starting several new ventures, such as the Darwin, Moanataiari Extended, Wolseley, Saxon, and others, some of which have already obtained good results from the labour employed. The Cambria "find" also goes far to show how rich patches of gold may for years remain unknown and unsuspected in the immediate vicinity of workings. Taken in connection with the Prince Imperial

discovery, it proves that but a small portion of this field has really been tried in the strict sense of the word, for without systematic working, a large quantity of gold may be left, as in the cases referred to, in ground tried and declared to be valueless.

10. At Karangahake, in the Ohinemuri District, some very important "finds" have been made and good, even rich, yields obtained. As yet it cannot be said that any of the reefs discovered and opened upon have been proved—the work, with two or three exceptions, having been confined to the surface levels here as elsewhere. The difficulty of transit from mine to battery adds much to the expense of crushing. I have no hesitation in saying that a good and extensive field exists in this locality, and that in the near future a considerable return of gold may be expected. To work this district profitably, I believe it will be found necessary to erect a battery or batteries in the Waitawheta Creek, where at all times a good supply of water may be depended upon. The quartz would then be conveyed from the various workings on the hill by means of wire tramways to the battery.

11. A curious feature of the gold won in this part of the district is the very large percentage of silver. A parcel of gold recently sold to the Bank of New Zealand was valued at £1 7s. per oz. only. It is certain that, to obtain the full value of the precious metals from this stone,—it must be treated as silver ore,—which, indeed, it may fairly be termed. This is now under consideration, and it is probable that steps will be taken before long to obtain the necessary machinery. Tests as high as 800oz. of silver to the ton have been obtained from some of this stone.

12. At Owaharoa and Waitekauri but little has been done during the past year, the return of gold from both districts being small.

13. At Waihi steady crushing of the poor grade rock has been maintained. The reef is worked to an average thickness of 15ft. in the Martha Extended Claim. The size of the reef, the facility with which the quartz can be broken, coupled with the low cost of transit to the battery (1s. per ton) enables the company to work at a profit stone yielding some 7 or 8dwts. to the ton.

14. The supply of water to the battery is somewhat precarious. The battery has been compelled to cease operations more than once during the summer, diminishing, of course, the return of gold. Should the company extend their race to the Ohinemuri River, which could be done at a comparatively small cost, a steady yield of gold might be expected from the very large body of stone proved in the Martha and Dulcibel Claims.

15. I might mention here that, throughout the Thames and Aroha Districts, the Pelton (or hurdy-gurdy) wheel is displacing turbines and water-wheels, experience teaching that a greater power can be obtained at a smaller cost by the use of this wheel, whilst the cost of maintenance is almost nominal. The first cost is no greater than that of the turbine.

16. Both at the Aroha and Thames the falling-off in the yield of gold has directed attention to the necessity of employing some better gold-saving appliances than those now in use. The fineness of the gold and the presence of silver and base minerals in large quantities have, for years past, caused the loss of a large percentage of gold from the stone crushed. Hitherto it has been deemed impracticable to prevent this loss, but attention has recently been directed to certain gold-saving appliances used both in America and in Australia, by which it has been proved to be possible to save from 90 to 95 per cent. of the gold in the stone, at a cost which would leave a margin of profit more or less large.

17. The introduction of any such appliances to this field would revolutionize gold-mining. Even if the gold won did no more than pay the cost, it would enable a very large extent of country at present idle to be worked. So long as a claim will pay working expenses, shareholders willingly wait for years in hopes of a dividend. If the claim has to be worked on calls, its existence is soon terminated. If 90 per cent. of the gold could be saved from the large reefs at Te Aroha and elsewhere on this goldfield, many hundreds of men would at once find employment. With this yield, and the known value of the stone, working expenses would be assured, and a large number of claims now idle would recommence work.

18. I believe that no better method of revivifying a languishing industry could be adopted than by offering a large bonus to the owners or patentees of any one of the new gold-saving appliances professing to save large percentages of fine gold for its successful introduction to the goldfields of New Zealand. I believe it to be admitted that Lamont's and other processes can save the gold; but it is doubtful if the cost leaves any margin of profit, at any rate on poor-grade stone.

19. The colony has in more than one instance spent £100,000 or so in constructing water-races that could only be of local benefit; but if the offer of a bonus of say £20,000 or £30,000 should have the effect of inducing inventors successfully to introduce into the New Zealand Goldfields any gold-saving machine professing to save 90 per cent. of the gold, with a margin of profit, the immediate benefit to the colony would be incalculable.

20. I sincerely trust that the serious attention now being paid to this subject may lead to some practical result, for at no period of its history has the gold-mining industry throughout New Zealand been so depressed and languishing as at present.

21. Herewith I forward the usual statistical returns: Number of cases heard in Warden's Court, 26; fees and fines in Warden's Court, £25 3s.; number of cases in Resident Magistrate's Court (civil), 559; revenue collected in stamps Resident Magistrate's Court (civil), £273 12s. 6d.; number of cases in Resident Magistrate's Court (criminal), 260; fees and fines collected in stamps, £91 6s. 6d.; registrations, 232; claims marked out, 182; claims abandoned, 62; gold-mining licenses granted, 15; miners' rights issued, 294; number of tons of quartz crushed (including Ohinemuri), 31,496, yielding in gold, 37,705oz.

I have &c.,
HARRY KENRICK,
Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 2.

Mr. Warden KENRICK to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Te Aroha, 20th April, 1885.

Mining operations in this district during the past year have been restricted to work in a few of the old claims at Wairougamai, no new ground having been opened up during the year and but little prospecting done. The output of quartz, some 11,000 tons, is disappointing, for, with the large body of proved gold-bearing stone running through the claims being worked, at least double this quantity could and should have been treated at the battery. The causes are, perhaps, not far to seek, in fact they are mentioned in the report of the Mining Inspector forwarded herewith, viz.: 1st, unnecessarily heavy cost of raising and crushing; 2nd, the quantity of gold lost. These two causes rendering it necessary to throw on one side or leave untouched the larger portions of the reef, sending to the battery only such stone as will pay working expenses. Heavy charges on winning the stone will, I have no doubt, soon be reduced, the use of rock drills in the mines and competition for crushing will bring the charges down to a more reasonable figure, but the loss of gold in all stone treated by the present process is a more serious matter, the remedy not being so easy to find.

The extreme fineness of the gold, coupled with the difficulty experienced in separating it from the silver and baser minerals, ensures a loss of from 40 to 60 per cent. of the gold by the present treatment. I have no hesitation in saying that at Te Aroha, as also in many parts of the Thames Goldfield, not more than one-third of the gold is saved. This has been demonstrated by careful and numerous tests of the stone taken from different portions of the reef, as also from the stone passing through the battery. The tests have been made at the banks, both in New Zealand and Sydney, and privately, by experts. Stone that at the battery was giving, after the tailings had been passed through the berdans, an average of 1oz. to the ton, was found to contain from 3oz. to 5oz. Stone that would not give more than $\frac{1}{2}$ oz. to the ton was found to contain from $1\frac{1}{2}$ oz. to 3oz. Of this latter quality, tens of thousands of tons are now lying untouched in the various mines. As the present method of treatment will not pay the expense of raising and crushing, of course, when saying that $\frac{1}{2}$ oz. of gold to the ton will not pay working expenses, the inferior value of the gold must not be forgotten. The average value of Te Aroha gold would probably be about £2 16s. per oz.

The enormous loss, not only to the miner, but also to the country, in consequence of this waste, will at once be apparent. I feel confident that I in no way exaggerate when I estimate that loss during the past year for Te Aroha district alone as between 10,000oz. and 15,000oz. of gold. I am glad to say that steps have been recently taken by the Battery Company to preserve the tailings that hitherto have been permitted to run to waste after leaving the berdans. A very large area has been secured as a tailing site, and, by the erection of a lift, the tailings are now taken from the berdans and carried at a considerable height across the Waiorongamai Creek there, being stacked to await the time when a more scientific method of extracting the gold will be available.

In my report upon the Thames Goldfield, I have referred to the possibility of introducing one or more of the recently-discovered and patented gold-saving appliances on the goldfield. I can only now say that the successful introduction of any appliance by which the gold now lost may be saved will revolutionize gold-mining and effectually sweep away the present depression in connection with mining matters.

The very full report upon the workings in the various claims made by the Mining Inspector, Mr. Wilson, renders it unnecessary for me to refer more in detail to the past year's operations.

A very considerable number of miners have left the district during the year.

At the Town of Te Aroha itself the mineral springs are attracting a considerable population, increasing as the curative powers of the waters get better known, many very remarkable cures having been effected during the past year.

The improved accommodation offered by the Domain Board at a nominal cost (threepence a bath), the cheapness of living, and above all the near completion of the railway to Auckland, will in the immediate future make Te Aroha a place of some importance as a resort for those in search for either health or pleasure. Cheap travelling bringing the place within reach of all.

The following are the statistical returns for the year:—Cases heard in the Resident Magistrate's Court—Civil, 193; criminal, 55. Warden's Court—Cases for forfeiture, 171; ordinary cases, 71; claims marked out, 14; licensed holdings granted, 1; business sites, 5; residence sites, 19; machine sites, 1; general registrations, 406. Further returns are enclosed herewith.

I have, &c.,

HARRY KENRICK,

Warden.

The Under-Secretary for Gold Fields, Wellington.

SIR,—

Warden's Office, Te Aroha, 9th April, 1885.

I beg to forward for your information the following particulars with respect to mining matters in this district:—

Mining has been steadily carried on during the year 1884, and the returns show a satisfactory yield of gold. However, since the beginning of 1885 various causes have tended to induce several of the mining companies to stay operations for the present: notably, the difficulty in saving the fine gold distributed through the quartz.

Although the actual cost of crushing by stampers is not unreasonable, namely, 10s. per ton, it is found that a very large percentage of the gold escapes in the tailings, and the further cost of grinding the blanketings and tailings in berdans adds materially to the charges made at the battery.

Even with the berdan treatment a considerable amount of gold escapes and cannot be saved, therefore the margin of profit obtained from quartz (which would be payable if treated in the ordinary manner) is so small that large blocks of ground already opened up in the New Find, Colonist, Canadian

and other mines are left until further improvements are made in saving gold, and in the cost of treating the quartz reduced.

There is no doubt that the methods employed at present are insufficient to save the gold found in most of the reefs at Te Aroha on account of its fineness, and until a more effective process of grinding quartz and amalgamating the gold is adopted many thousands of tons must be allowed to remain unworked.

The cost of the labour required in opening up the mines and of stoping is also very expensive on account of the hardness of the rock and reefs, and a great saving would be effected by the use of rock drills driven by water-power.

The owners of mines are anxiously awaiting the erection of a new crushing and grinding plant which Messrs. Ferguson, Fraser, and others are actively engaged in building on the battery site lately known as Cook's site, and situated about a quarter of a mile from the bottom of the May Queen self-acting grade of the tramway.

The method to be adopted is first to break the quartz to a size small enough to be ground by large rollers, this will be done with a stone-breaking machine; the quartz after being ground fine by the rollers will pass into Mackay's pans for further treatment, and finally into settling pans for the purpose of separating the amalgam from the thoroughly pulverized quartz. It will be some time before this new plant is ready, but the owners are confident that when they are in a position to crush quartz a far greater quantity of fine gold will be saved than by the berdan process which is now used.

This battery or plant when completed will reduce and amalgamate about 20 tons per diem.

New Find Mine.—The new low level has been driven from near the southern end of the claim, and is now under the workings at the Arizona level. A winze sunk from that level will shortly be connected, and an extensive block of payable quartz opened up. The quartz crushed during the year has been chiefly from the stopes over the Arizona level at the north end, and from the stopes over the low level at the southern end of the claim.

5,362 tons of quartz crushed yielded 5,388oz. of smelted gold, 580ft. of driving, 220ft. of winzes sunk, 50ft. of rising, and 400 fathoms of reef stoped out. The average number of miners employed during the year was forty.

Colonist Mine.—The low level has been driven on the reef nearly to the boundary of the Canadian Mine, and large quantities of quartz stoped out and crushed. 3,299 tons yielded 2,040oz. of retorted gold.

Canadian Mine.—A considerable amount of prospecting has been done, and 726 tons yielded 347oz. 3dwt. 6gr. retorted gold.

Premier Mine.—Operations have been confined to prospecting near the surface and towards the Buck Reef. 144 tons yielded 145oz. 13dwt. of retorted gold, and a parcel of tailings yielded 76oz. 17dwt.

Waiorongomai Mine.—Several different reefs and leaders have been worked on, and 281 tons yielded 253oz. 6dwt. retorted gold.

Eureka Mine.—418 tons of quartz yielded 174oz. of retorted gold.

May Queen Mine.—This mine has been steadily worked, and good payable quartz found in two winzes sunk on the reef. A low level is being driven on the reef, but has not yet reached the run of gold. 76 tons yielded 123oz. 3dwt. of retorted gold.

Inverness Mine.—The crushing from this mine did not come up to expectations. The low-level drive occupied a considerable time, and was stopped before the run of gold in the reef was reached. 256 tons from the upper block yielded 180oz. 12dwt. retorted gold.

Phoenix Mine.—27 tons yielded 37oz. 1dwt. of gold. The company who are working this mine are about to forward 10 tons of quartz to England for special treatment by a new process, and it is their intention to effect amalgamation with the Inverness Company, and erect an improved plant for reducing and amalgamating.

Several other claims have had fair returns from small parcels of quartz crushed, but prospecting is not vigorously carried on. The cost of crushing is said to be too heavy, and Ferguson's Battery will have to be completed before additional energy is devoted to further prospecting.

There has been a decrease in the adult population since last return, and I estimate the population in the district at about 1,600.

I have, &c.,

GEO. WILSON,
Mining Inspector.

Harry Kenrick, Esq., Warden, Thames.

BATTERY RETURNS FOR TE AROHA for the Year ending 31st March, 1885.

			Tons.	cwt.			Oz.	dwt.
1884.—April	...	...	1,050	0	...	...	705	17
„ May	...	...	834	0	...	...	837	13
„ June	...	...	804	0	...	...	884	3
„ July	...	...	1,204	0	...	...	911	15
„ August	...	...	1,174	10	...	...	959	5
„ September	...	...	1,110	0	...	...	864	11
„ October	...	...	1,102	0	...	...	876	7
„ November	...	...	840	0	...	...	655	4
„ December	...	...	1,394	0	...	...	1,417	3
1885.—January	...	...	Tailings	...	...	...	411	0
„ February	...	...	865	0	...	...	549	10
„ March	...	...	664	1	...	...	433	18
			11,041	11	...	...	9,506	6

GEORGE WILSON,
Mining Inspector.

BANK RETURNS OF GOLD SOLD FROM TE AROHA during same period.

9,897oz. 12dwt.

The difference between bank and battery returns, viz., 391oz. 6dwt., will probably represent the yield from small parcels crushed at Thames.

H. KENRICK,
Warden.

No. 3.

Mr. Warden KENRICK to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Coromandel, 5th May, 1885.

During the past year mining matters in this portion of the Hauraki district have been in a very depressed state, caused by the returns from the principal mines—Tokatea, Kapanga, Union Beach, &c., &c.—not coming up to expectations, and, to a certain extent, by the dry summer, which has prevented any but small parcels of quartz from being crushed. The Tokatea Company have been energetically pushing on their low-level tunnel to cut the main reef which traverses the district. The work has taken a number of years to accomplish, but the result is disappointing. The distance driven is in excess of three thousand feet (3,000ft.), and should have intersected the line of reef at a depth of eight hundred feet (800ft.) from the surface at about the same distance from the sea-level. In driving this tunnel along their old reef some rich stone was obtained, but on the manager attempting to sink a winze in the shaft, he was driven out by the inflow of water. Some 13ft. below the floor of the main tunnel the last stone won was rich in gold. About two miles northward along the main range is a claim of much promise, called the Triumph (late Last of the Mohicans). The company have done a large quantity of work on their mine, including the erection of a very complete crushing plant, and now only await a sufficient supply of water to crush a large quantity of quartz they have on hand. A trial crushing of 7 tons gave a return of 3oz. per ton.

Royal Oak and Bismarck have a few tributaries at work; the returns have been small.

Kapanga English Company.—A considerable amount of work has been done during the year but the returns have not been remunerative. The company have ceased operations for the present, and I have granted them six months protection for the ground as they intend if possible to reform the company; if successful they propose to sink the shaft, now down 400ft., a further distance of twenty fathoms to test the deeper levels, a work that would be of great importance to the district. It is, therefore, to be hoped that they may meet with the success their courage and perseverance merit.

In the Union Beach several tribute parties have been working in the upper levels with fair success. An effort is now being made to form a joint English and Colonial Company to work the old Union Beach and several adjoining claims together with a block of private land known as Blackgrove's Freehold. These together comprise a large stretch of proved auriferous land, all but connecting the Union Beach and Kapanga ground, both of which in former days yielded large quantities of gold. The Union Beach has been worked to the 180ft. level only, the machinery not being powerful enough to keep the water down below that depth. It is now intended that the proposed new company (Anglo-New Zealander) shall with more powerful machinery test the lower levels. This will be a work of great importance, and should prove the value of ground always considered highly auriferous.

Matawai Tiki District has, perhaps, better prospects than any other part of the field. Several claims, believed to be valuable, upon which a considerable amount of work has been done, will, as soon as the wet weather sets in, commence crushing, one claim, the Matawai, having two hundred tons of quartz on hand, taken from a large reef, which is expected to pay well, three oz. to the ton being the result of a former crushing. A level about 100ft. below the former workings is now being put in, and is within a few feet of the reef, which, when cut, will furnish a large quantity of quartz for the mill.

The Castle Rock Central and others are working, but as yet without payable returns. A new road is about to be opened by the County Council up the Warau Valley. It is expected that this will render accessible a large tract of gold-bearing country hitherto closed to the prospector, owing as much to the density of the bush as to the want of tracks.

Manaia.—This is entirely a new district of considerable promise. A few months ago rich specimens were found there, and a number of claims pegged out, since then, surface gold has been found in considerable quantities over a very large area. The specimens found in the Prospectors' claim are very rich, valued at between two and three ounces to the pound. They have a small leader, which strikes right through their claim. It has been cut at different levels, yielding small quantities of rich specimens at each level. Dyer, McLeod, Lloyd, and others have good surface prospects, but as yet have not opened on any reef.

McGregor's claim is four miles distant from the Prospectors. Blackmore has good surface indications, and some specimens have been found here.

Lynch and party have recently opened upon a leader of hard blue stone, about two feet thick, shewing gold freely. On the whole the prospects of this district are good, but will require time and labour to develop, the country being difficult to work. The County Council are about to make roads and tracts to open this portion of the field, and the Natives having met them liberally, not only allowing the road to be taken through their land and cultivations, but furnishing a fair proportion of the cost of construction (one-fourth).

In conclusion it must be admitted that the result of the year's work is disappointing. The yield of gold is the smallest from the field for many years. Only 456 tons have been crushed for a yield of 3,201oz. as against 1,042 tons and 4,017oz. 19dwt. 2gr. for the preceding year.

The prospects of the coming year appear somewhat better, the large quantity of quartz in hand at the Matawai awaiting water only to crush, and the work being done there and at Manaia hold out hopes of better things in the immediate future. Should the efforts to reform the Kapanga Company and float the Anglo-New Zealander in London be met with success, the prospects will brighten materially.

Herewith I have the honour to forward the usual statistical returns:—Cases heard in Resident Magistrate's Court—Civil, 214; criminal, 33; fees and fines collected, £91 18s. Warden's Court—Cases heard, 17; registrations effected, 30; miners' rights issued, 56; gold-mining licenses granted, 14; claims marked out, 90; claims abandoned, 82; revenue collected, £619 4s.

I have, &c.,

HARRY KENRICK,
Warden.

The Under Secretary for Gold Fields, Wellington.

No. 4.

Mr. Mining-Inspector McLAREN to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Mining-Inspector's Office, Thames, 26th May, 1885.

I have the honour to forward mining report for the Hauraki Gold-Mining District for year ending 31st March, 1885.

HAURAKI NORTH, COROMANDEL.

The number of miners working in this district continues to be about the same as previous years, but the quantity of quartz crushed is very much under, being only 456 tons 14cwt. 92lb., against 1,042 tons 12cwt. 95lb. in 1883–84.

One reason for this great falling off is that three of the principal mines, namely, the Kapanga, Union Beach, and Tokatea, have not had any payable finds in the larger reefs. Another is that the past summer has been the driest one we have had for the last ten years, causing long stoppages of batteries driven by water-power.

In the Matawai District all the quartz that has been put through the battery amounted to 1 ton 13cwt., while the hoppers, paddocks, passes, &c., in the mines are all filled up with quartz ready for crushing; this necessitated a stoppage of the workings.

There was water sufficient for crushing during the early part of the year, but at that time the road to battery was being constructed, this was completed about the end of October, 1884, since then there has been insufficient water for crushing.

The proportion of gold obtained per ton of quartz crushed is however much greater this year than last, being at the rate of 7oz. to the ton, while last year it was about 4oz.; this is accounted for by the non-crushing from the larger reefs, the quartz sent to the batteries being generally that obtained by tributaries from the smaller leaders, which, though less in quantity, are generally much richer in gold.

Kapanga Mine.—The works in this mine have been carried on during the last thirteen years by English capitalists. The expenditure during that time has been over £72,000, while the gold returns have only amounted to £11,500.

During the greater part of the year the ground has been vigorously prospected under the management of Mr. Phillip Argall without, however, finding payable gold.

The work done has been, levels driven, 604ft.; rising and sinking between levels, 434ft.; stoping, 422 square yards; quartz crushed, 200 tons; gold obtained, 265oz. 6dwt., valued at £754 12s. 6d. The expenditure during the same time (twelve months) being £5,886; where there is pumping and winding from deep levels the expenditure must of necessity be heavy.

The reefs in this mine are very flat, averaging about 25°. The leaders are small and irregular, the ground being broken; the size will average about 6in., while the yield on the whole will be about 3dwt. of gold to the ton. Very often the quartz is absent altogether, its place being filled in with a blueish unctuous clay. The small patches of rich specimens occasionally found are in the immediate vicinity of the main leaders with the small hanging wall veins.

Active work in this mine has for the present been suspended, pending the reorganisation of the Company, with the view of sinking the shaft deeper, in the hope the country will be found more settled at the deeper levels.

Union Beach Mine.—In the earlier part of the year a large amount of prospecting work was done at the deeper levels, but without payable results. Towards the surface a small leader has been worked by two parties of tributaries. This leader has given very handsome returns, as much as 27oz. to the ton.

Pumping has now been stopped for some time, to re-organise the Company and float it in England, the intention so to include the ground known as Blagrove's freehold, which lies between the Union Beach and Kapanga Mines. Old miners believe that the channel of gold-bearing country runs right through this property.

Tokatea Mine.—The extension of the main low level tunnel to cut the main lode has been the principal work carried out during the year. The rock passed through has been exceedingly hard, causing the progress to be very slow.

The total length of tunnel is now 2,888ft. The place where the main lode ought to have been has been cut through and found to be a blank, there being no reef there, but instead, about 14ft. thick of hard blueish clay deposit. It has therefore been decided to drive back in a southerly direction along the line of lode till quartz is reached; for this purpose tenders have been called for to drive 400ft. It is also intended shortly to drive 200ft. to 300ft. in a northerly direction in the All Nations lode, which has been cut through and left behind in the tunnel.

This tunnel level will give 1,845ft. of backs, other higher levels will have to be opened, which will be done from the western side of the range. Should payable gold be found, there will be work here for the next ten years for a very large number of men. It would also have the effect of establishing the permanency of this portion of the field.

Since 1877 £40,981 has been expended on this mine, the gold returns during the same time being £29,053.

Queen of the North.—Work has been regularly carried on in this small mine—driving, rising, and sinking. The gold returns have not been great, but the owners are very confident of future success.

TIKI DISTRICT.

Marebel Mine.—This mine is situated on private property, and was lying unworked for a long time. Work was resumed on 24th March, 1884, under the management of Mr. S. M. Hutchinson, late of Thames. The work was, however, confined to one portion of the mine, on what is known as the "Foot Wall Leader." The work done on this was 220ft. driving, 55ft. rising, 104 fathoms stoping, for a return of 117 tons quartz, which yielded 74oz. 4 dwt. smelted gold.

The work has again ceased, in order to liquidate and reform the Company and get rid of a large number of shareholders who will not pay their calls. After reforming it is intended to fully prospect the mine by opening out on the Home Rule Reef, the reefs known as Blackmore's flat reefs, Nos. 1 and 2, also the Vertical or Big Reef. These vary in size from 2ft. to 6ft. From all these reefs formerly there was crushed 3,087 tons, yielding 3,273oz. 14dwt. gold. This being over 1oz. to the ton should pay handsomely, especially as the company have a crushing plant of their own.

MATAWAI DISTRICT.

Vaughan's or Matawai Mine.—As I mentioned all the paddocks, passes, and spare room in this mine is filled up with quartz, waiting on water to get it crushed. Consequently all labour in the working part of the mine has been stopped for some time.

Looking towards the future working of the mine, a second level, 120ft. on the dip of reef lower than the present one, is now being driven; 140ft. of this has now been driven, the total distance required being estimated at 150ft. On account of the hardness of the rock, progress in this drive has been exceedingly slow, the cost for dynamite alone being over 15s. per foot.

Vizard's or Castlerock Mine.—This mine is in a similar position to Vaughan's *re* crushing. A new level (No. 3) is also being driven, which will cut the reef at about 70ft. from the mouth, and give about 80ft. additional backs. The rock here is soft and much more easily worked than that in Vaughan's mine.

Central.—This is a new mine. A drive has now been put in 125ft., with the intention of cutting and prospecting the continuation of Vizard's reef. According to survey this should be reached at about 150ft.

MANAIA DISTRICT.

This is a new district for gold. It is situated in bush country about 1½ miles inland from the head of the Manaia Harbour or Bay, and about 9 miles south of the Coromandel Township. This country is very difficult to prospect on account of the great clay and soil covering that overlies the solid rock.

A small leader was first discovered by Mr. Blackmore and party, and has been opened out for a depth of about 80ft. This leader is from 4in. to 6in. wide, and has a narrow run of gold in it, having a width of about 12ft. Some of the specimens taken from this are very rich, but the value of the discovery lay in the fact that it might lead to the finding of other and larger reefs. This has since been done by a Mr. Thorley—who at a short distance away found the cap of a reef containing gold about 2ft. wide—but, strange to say, Mr. Thorley did not seek to follow this any further down, but abandoned the ground, which has since been taken up by an old prospector named Patrick Hays and his party, who are now putting in a low level to test this reef. About half a mile nearer the main range Lloyd and party have found even better loose surface prospects than did Blackmore and Thorley. Lloyd and party have been for some time following up these surface indications, but as yet without finding the reef from which the gold came.

HAURAKI SOUTH.—THAMES AND OHINEMURI.

The number of miners working on this portion of the field has increased, the numbers being now 900, last year 720. This may be accounted for by the return of a large number of the miners who went to the Te Aroha Goldfield, and by the improved prospects of the Ohinemuri district.

TAPU DISTRICT.

A very considerable improvement has taken place in the prospects of this field, through the Bull Brothers having found rich golden stone in a shaft they sunk 80ft. deep at the foot of the Golden Point Spur. It is now determined that a more united and systematic mode of prospecting for gold be adopted, which is the very thing that is necessary to lead to good results.

THAMES DISTRICT.

The two pumping companies have steadily carried on operations during the year.

The expenses of the Big Pump are met by various mining companies, but the other (the *Queen of Beauty*) is in the unfortunate position of having to bear all its own expenses.

This Company (the *Queen of Beauty*) deepened its shaft another 80ft., making the total depth 747ft., or about 707ft. below high-water level. No great extra quantity of water had to be contended with till recently, when after driving and breaking into the reef the inflow became so great that the combined steam and water power had to be kept working the double lifts at the rate of about seventeen strokes per minute. This ultimately proved too much for the machinery; the main shaft, which was 9in. in diameter, suddenly snapped close off to the crank pin. The engines, thus suddenly relieved, started off at a terrific speed, and in a second or two, before they could be shut off, the machinery became a general wreck.

This, combined with the state of the company's funds, has caused it to cease operations and wind up. It is, however, probable that a new company will be formed in England, with large capital, to erect more powerful pumps.

One thing is proved in sinking the last 80ft. of this shaft, that the country is improving in the deeper levels, and showing much more likely to contain rich gold in the reefs.

Prince Imperial Mine.—This mine still continues to be vigorously worked under the management of Mr. George Clark, and has been employing on the average from 100 to 130 men. The shaft has been sunk another 70ft., making the total depth 562ft.

For some time the reefs have not been turning out so well, and no dividends have been paid, but latterly there has been a great improvement.

Thames Golden Crown Mine.—Up to the end of 1884 the operations in this mine were principally confined to the upper, or 170ft., 100ft., and battery levels, when it was determined to discontinue these works, and go in for lower levels. A new shaft was started, and winding machinery, etc., erected on the Red Queen portion of the Company's ground.

This shaft is completed for a depth of 300ft., where the manager, Mr. T. Dunlop, has opened out his first level. The sinking of the shaft is still being continued, in which a reef containing good gold was recently struck, so that this company's future prospects are very bright.

The average number of men employed during the year has been about 30—and the ounces of gold obtained was 450.

During the time this "dead work" of sinking the shaft has been going on the company's battery of 20 stamp has been employed crushing for the public. This battery is now being driven with a new motive power in the shape of a Pelton water wheel, which is giving great satisfaction.

New Manukau (3 men's ground).—Operations here have been confined to the upper levels. Several small leaders are at present being worked with payable results—8 to 10 men employed on the average.

Caledonian Low Level Prospecting Company.—This Company is entirely a prospecting one and holds no ground of its own, but has taken a lease, or tribute, from the Kuranui, Moanataiari, Southern Cross, Caledonian, and Golden Crown Gold Mining Companies, of the ground from the 400 to the 640ft. levels. At the 640ft. level this Company have done no less than 1,800ft. of driving by means of rock drills, driven by compressed air, the cost being only 39s. per ft. As this includes the price of timber for securing the ground, air-boxes, rails, and other mining requisites, also steam for compressing air, a very great saving over hand labor has been effected.

Moanataiari Mine.—The operations in this mine during the past year have been carried on principally in the Waitemata, Nonpareil, Morning Star, and Heldt's sections, and a large amount of prospecting work has been done, partly by companies' men, and partly by tributers.

The most important work in hand at present is a cross-cut at tunnel level, for the purpose of trying to pick up a rich lead lately discovered by some tributers below this level, also a cross-cut at 80ft. level. Redan Section, where the prospects are of a very promising character, in this quarter there is a very large quantity of untried ground. Stopping is "in hand" above the 132ft. level; it is from this part that crushings for several months past have been obtained.

The total quartz crushed for the year was 1,472 tons, the gold return for same being 2,691oz. 13dwt., the average number of men employed in mine and battery being 85.

Waiotahi Mine.—This mine still continues to be a dividend-paying one. It was intended, at the end of last year, to sink the shaft deeper, but this has not been carried out, the works being still continued from the old level, 256ft. The work done during the year is 500ft. of driving on the various lodes, about 456 fathoms of stopping, yielding 2,193 tons of quartz, for a return of 2,559oz. retorted gold.

WAIOTAHU DISTRICT.

Darwin Mine.—The shaft of this mine has been deepened from 160ft. to 300ft. A drive 200ft. in length from the shaft at this level has cut the reef, which has been driven on for about 40ft., colours of gold being seen. A winze has been sunk from No. 2 to No. 3 level, at which stopping is about to be started, stopping being still in progress between Nos. 1 and 2 levels.

The quantity of quartz crushed has been 238 tons for a return of 252oz. melted gold.

Cambria Mines.—This mine is an instance of how rich gold can be undiscovered for many years, the ground being held by as the Nonpareil license from 1872 to 1877, when the portion of ground now Cambria was thrown off as being useless. Since 1877 it has lain idle till taken up last year by the Cambria Company.

The work is carried on from the Darwin shaft, the distance driven at the 300ft. level to catch the reef being 220ft. A winze from No. 2 level has been recently completed, and stopping operations from that level are about being commenced.

The quartz crushed during the year has been 2,531 tons, for a yield of 3,056oz. gold, allowing dividends to 4s. 6d. per share being paid; in other words, total dividends amounting to £7,087 10s. have been paid, while the called-up or paid-up capital of the company has only been £1,837 10s.

This mine, and also the Darwin, are under the management of Mr. H. W. Moore.

Moanataiari Extended.—The shaft in this mine proves that the broken ground for the first 100ft. to 150ft. from the surface found in the Darwin shaft passes through a considerable extent of country, as the same was found here; it was therefore determined to continue the further sinking of the shaft to the lowest Cambria level. This work is now in progress.

As the Cambria Company have purchased the right to one-half of the machinery and shaft of this company; it is probable that a drive will be made connecting these two shafts, after which the Cambria Company will work through this shaft instead of the Darwin.

Wolseley Mine.—This mine has been recently taken up, and lies to the north-east of the Moanataiari Extended; the shaft is now being sunk, and has reached a depth of 200 feet.

In this district (Waiotahi) a number of mines, such as the West Coast, Pinafore, Bright Smile, as well as a lot of small claims not held as licenses, but under miners' rights, still continue working for payable returns.

MOANATAIARI DISTRICT.

North Devon.—A large amount of work has been done in this mine; the reef, which varies from 6in. to 6ft., was driven along for 240ft. from the cross-cut, but the main object was to get over what is known as Garvie's Winze, they are now within 20ft. of this.

Whau Mine.—This mine has been worked by two parties of tributers with fair success, but there are no particularly new features to record about the mine.

KARAKA CREEK DISTRICT.

This district still keeps up its gold-bearing reputation.

Rocky Point Mine.—This mine has just completed some very important, though expensive, "dead work," which was necessary for ventilation before extensive stoping operations could be carried on.

Adelaide Mine.—The winzes, &c., necessary in this mine for extensive operations were completed some time ago, but the long dry season has till now prevented these being begun.

City of Manchester.—This mine has been in operation for many years, giving its owners excellent returns. A new low level, which will give 70ft. additional backs, is now in progress of being driven in to cut the reef.

Lone Hand Mine.—This was formerly the Little Lizzie ground held by Messrs. Prescott and Johnson, who are said to have cleared £1,500 each out of it. The present owner, Mr. Barclay, is even more fortunate. A new low-level tunnel is also in progress here.

First Demon Claim.—A north and south leader, running from two to three inches to a foot in thickness, has been driven on for a considerable distance, the crushings from which went from 1½ to 4oz. per ton. A winze is now down on it about 80ft., in which it maintains its quality.

A small battery is attached to this mine.

There are some other mines in this district, such as the Hokianga, Victory, Rising Sun, and some smaller claims that are all doing very fairly.

HAPE CREEK DISTRICT.

A fresh start has been made in this district, through a discovery made by Dunlop and party. At first this reef was thought to be an entirely new one, or, rather, one unknown before, but further investigation proves it to be a reef that was worked with good results in the early days of the field. A slide in the country suddenly cut it off. This was thought to be the end of it, but now Dunlop and party have picked it up on the other side of the slide. This party, who have named their claim the Little Daniel, have had several good crushings, and have been lately engaged sinking a winze from the upper level for the better development of the mine. The reef has maintained an average thickness of 2ft., and shown gold in abundance whenever broken down. The most reliable test is, of course, the result of the crushing. The last test was seven loads of quartz, which yielded 40oz. of gold.

A number of other claims have been taken up in this neighbourhood, such as Grenville and Party's True Briton, Morgan and Party's Little Albert, McCormick and Party's Arrow, and McIlhenny and Party's Little Nell. These have all started vigorously to work.

Just-in-Time Claim.—Wallace Brothers and Party spent 8 months in doing "dead work," but have now a lengthened prospect of highly profitable employment.

The crushings within the last few months yielded 2oz. to 2½oz. per load.

The operations at present in progress are driving on the reef and working the stopes.

Dart Mine.—This mine still continues its operations, and although some of its returns have been very good, yet, like all mines that require pumping, the expenses are very heavy, necessitating frequent calls on the shareholders.

Otanui District.—This district was served by a 12-stamper with 4 berdans, driven by an over-shot wheel. During the summer dry season this proved of no use, and would not turn the stampers. The matter was put into the hands of Messrs. Clime and Bowden, local engineers, who have invented a new wheel, on the hurdy-gurdy, or Pelton principle. It is claimed their buckets, with a compound curve, placed on the periphery of the wheel, are much superior to the others.

These gentlemen recommended one of their wheels (to which I have not yet learned they have given any name), 6ft. in diameter; also that a new race be constructed, so as to give a fall of 65ft. vertical. This was approved of, and since constructed, with necessary dams, &c. The results have been very good, the battery being now able to crush from 65 to 70 tons per week.

The great advantage of this class of water-wheel is simplicity of construction, cheapness, and easiness of repair. This is a very important factor in out-of-the-way districts, no engineer being required; any ordinary man, without being a mechanic, can see at a glance what is the matter, if anything goes wrong, and put it to rights.

The Oriental, Eureka (who own the battery), and *Comet Mines* have done a large amount of work, but are not yet able to realize on the results of their labours, as immediately after the completion of the alterations to the battery, the wet weather set in, and the road down hill from the mines soon became impassable. However, I hear the County, with the aid of a subsidy from Government, are about to metal this road, after which I hope the shareholders of these mines will reap the reward they so richly deserve.

OHINEMURI GOLD FIELD—WAITEKAURI DISTRICT.

During the greater portion of the past twelve months this district has been nearly at a standstill.

Waitekauri No. 3 Mine.—The proprietors having had no success by their prospecting operations, was in a great measure the cause of the depression. Great things had been expected from the sinking of the winze by this company. This winze was sunk to a depth of 186 feet, or about 420 feet under the outcrop of the reef on the main run; but this work failed to develop anything payable.

Waitekauri Company.—This company has been wholly manned by tributers, who, during the earlier part of the year, met with little or no success; but at present several parties are on gold. Indications point to a rush setting in here within the next few months.

A party are erecting a battery at the head of the Mangakara Creek, which will afford facilities for working this—the southern—portion of the Waitekauri District.

The Government grant of £40 is being judiciously spent in forming a road to the new battery, where crushing is expected to commence about July.

Several parties are out prospecting, and rumours of a “big find” are afloat, which, if not true in the present instance, will certainly be so some day, judging from the indications of the district.

Waihi District.—All the small mines in this district have now been amalgamated into one, under the name of the Waihi Gold Mining Company.

The works in this Company's mine are carried out under the management of Mr. John Moore. The reef is an exceedingly large one, and though not all taken, crushing stuff is taken from it for a width of from 14 to 20ft.

The average return per ton does not exceed 3 or 4dwts., and yet by judicious management, and crushing continuously, the large debt incurred for machinery, battery, tramways, water races, dams, &c., &c., has been cleared off, and now there is a large surplus on hand from which it is expected a dividend will soon be paid.

Karangahake District.—In my last report I mentioned that “very little work had been done in this portion of the field, but from one of the mines there, the Sir Walter Scott, very encouraging returns had been obtained from a small crushing.” But this small crushing led to great results, and will lead to greater still—where there were only a few miners at that time there are now between 50 and 60. Without going too much into details, the Sir Walter Scott reef was followed down into the Ivanhoe. In both of these it averaged 5ft. thick, and went about 1½oz. to the ton. From thence it has been traced to the westward across the creek and again picked up on the ground now known as the Woodstock. Here the reef was about the same thickness, and went 2oz. to the ton, but the value was reduced about half the ordinary price as it contains about 62 per cent. of silver. In addition to this on the western side of the creek there have been two reefs found on the Golden Crown ground, averaging 4ft. in thickness, the crushings from which have varied from 2 to 7oz. per ton. The Hidden Treasure's reef is 18in. thick, the last crushing from which went 5oz. to the ton. The Martha reef is 3ft. 6in. thick and goes 3oz. to the ton. But the great difficulty in a mountainous country like this is to get a road, or ways and means of conveying quartz to the battery, but where quartz is payable these difficulties will, in time, be overcome here as elsewhere.

The total quantity of quartz crushed in Hauraki South for the year is 31,495 tons 1,937lbs. for a return of 37,705oz. 1dwt. 7grs. melted gold.

I have, &c.,

JAMES M. M'LAREN,
Mining Inspector.

MARLBOROUGH GOLD FIELDS.

No. 5.

Mr. Warden ALLEN to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Blenheim, 15th May, 1885.

I have already forwarded you my annual returns of the Marlborough Gold Fields, and have now briefly to report as follows concerning the mining operations in the districts under my charge, and the future prospects of the Marlborough Gold Fields:—

QUEEN CHARLOTTE SOUND AND RAVENSCLIFF.

This field is practically closed, no work has been done during the last twelve months requiring any special mention.

WAIRAU VALLEY DISTRICT.

There is nothing of any importance to report of this district. There are very few miners at work, and they are scattered about in the different gullies on the north bank of the Wairau from Onamalutu to Birch Hill. They cannot be described as doing more than making wages.

WAKAMARINA (KNOWN AS PELORUS DISTRICT).

Again I am sorry to say there is nothing of any importance to report. The river and alluvial companies have either given up their claims or retired from the field; and in the case of one or two who have manfully stuck to their work I am afraid that floods and other disasters will have caused them to find a very unprofitable result of their twelve months' labours. The Quartz claims are for the most part abandoned. Matters appear to be at a stand-still. The few alluvial miners at work are making wages.

FUTURE PROSPECTS.

I can only repeat what I have stated on former occasions. I believe that there is every probability of good payable gold reefs yet being discovered. We have a range of rough bush-covered mountains extending for several miles between the Wakamarina and the Wairau Valleys; good gold has been found in almost every gully on either side of this range, and handsome gold-bearing quartz specimens have been picked up in the water-courses. Poor men cannot afford to prospect such rough country, and rich men will not take the matter up. Unfortunately, Marlborough is not situated either in the District of Otago or Auckland, therefore it is a question of time and patience: we must wait for something to turn up. When some fortunate individual stumbles across and turns up “a find,” there will be no lack of either labour or capital.

I have, &c.,

J. ALLEN,
Warden.

The Under-Secretary, Gold Fields Department, Wellington.

NELSON GOLD FIELDS.

No. 6.

Mr. Warden GIBBS to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Collingwood, 23rd April, 1885.

I have the honour herein to report to you on the general state of mining matters in this district during the past year, and in doing so, I believe I may say that with scarcely an exception all the men employed are making a fair return for their labour, and, if it could be correctly ascertained, that the average earnings are higher than on any other of our goldfields. Still, I regret to say, that chiefly from the want of some necessary road-work, no new ground has been opened, neither has the mining population materially increased.

The holders of gold-mining leases referred to in my last report are either still employed prospecting or getting their machinery erected; they have not as yet turned out any gold.

There have been during the year many applications for gold-mining and mineral leases, and also for prospecting licenses for minerals other than gold, but no work has been done on any of those granted, and my experience leads me to think that some clause should be inserted in such mineral leases making it imperative that within some definite time the lessees be compelled either to work the ground or surrender the lease; as it is, a large area of Crown land is locked up for purely speculative purposes.

The blocks held under prospecting licenses are much the same, as under these licenses the licensees hold a right under the Nelson Waste Lands Regulations to a mineral lease within such block of not more than 640 acres, and again under the mineral lease regulations of "Mines Act, 1877," a right is given to take up a gold-mining lease if gold is found within the mineral leasehold, giving the licensee under these provisions indirectly a right to a gold-mining lease anywhere within these large prospecting blocks, all of which seem to be allowed to remain idle until something is found in the vicinity.

The small diggings at the Waikaramumu, Takaka, and the localities contiguous, still support about the same number of men as have worked there for the last few years.

There was much activity in the West Wanganui part of this district in the early part of the past year which for some years has been worked under arrangement made with the Native owners, and proclaimed a goldfield under the provisions of the "Goldfield Amendment Act, 1868." The Natives having, however, parted with the land to a private company, the Warden has ceased to have control, and it is to be feared some complications may arise in consequence.

The coal industry is in much the same position as it was at the time of my last report. In the old mine the output is steady. The new mine is not yet opened.

The roads for which provision was again made in last year's appropriations to open up the outlying parts of this goldfield are still unmade, and there are still as hitherto the great want of some comprehensive system of water supply.

I append to this report the usual annual statistics.

I have, &c.,

WILLIAM GIBBS,

Warden.

The Under-Secretary of Mines, Wellington.

No. 7.

Mr. Warden BIRD to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Westport, April, 1885.

I have the honour to forward the several statistical returns for the year ending the 31st March, 1885, and also the annual report on the prospects and condition of the various mining sub-districts under my charge.

WESTPORT SUB-DISTRICT.

Only having been appointed to this district in January last, I have not had as yet sufficient time to make myself thoroughly acquainted with the whole of this large district; but with regard to both alluvial and quartz-mining very little alteration has taken place during the last twelve months, and there is nothing of importance to communicate.

The Great Republic Gold-Mining Company are still steadily pushing on their works, and the machinery is, I believe, nearly completed, but as yet they have had no crushing. About twenty men are employed at the present time.

The Red Queen Gold-Mining Company are employing about twenty-eight men, and have had two crushings, with the result of 932oz. from 645 tons of stone. The Guiding Star Gold-Mining Company have also crushed 70 tons of stone with a yield of about 2½oz. to the ton. Several other companies are engaged prospecting, &c., viz., South Pacific, Wellesley, Golden Crown, Buller, and Constitutional.

During the year 10 gold-mining leases were applied for, 5 were executed and 12 cancelled.

CHARLESTON SUB-DISTRICT.

In this, as in the former sub-district, but very little alteration has taken place in mining operations since the last report, no new finds having been made, but mining is still steadily pursued with very fair results.

On Candlelight Flat the Government water race is now being extended to the Back lead, a distance of one mile, which will cost about £2,000. On this portion of the race there will be an iron syphon crossing Ballarat Gully, a distance of over 1,900ft. When this work is completed it will finish the Argyle water race as far as the fall into the Nile River, and will open up a large area of sluicing ground which has up to this time been useless, through the want of water. Several leases have already been applied for in this locality.

The Beach claims have not been so remunerative as they were for four or five years previous, owing to the very fine weather, and it is only after heavy south-westerly gales that good returns are made. The men owning these claims, when not working them, devote their time to the cultivation of their residence areas and agricultural leases.

Croninville.—Four gold-mining leases and three or four extended claims have been taken up during the past year. Lammas and party have completed their tunnel tail race, which is constructed to work their gold-mining lease, but have not commenced work yet.

There were seven or eight parties engaged ground sluicing and making good wages, but the action of Costello in serving injunctions on them all to desist from discharging tailings, &c., into the Totara river has brought things to a standstill, all the miners having left off work. This means a loss of about £100 per week to the miners, but as an application has been made to the Government to resume the land occupied by Costello as an agricultural lease, it is to be hoped the men will soon be able to resume work again.

At the Five Mile, St. Kilda, and Brighton, the miners have been fairly employed, and those at Foxes River and Razorback are making fair wages. Some of them in this vicinity have taken up agricultural leases, which they are cultivating, and making comfortable homes.

LYELL SUB-DISTRICT.

I regret to state there has been a great depression in mining matters during the past year, and there is but little of any importance to report on. In the first place, instead of there being 50 gold-mining leases in existence (which was the case last year), there are now only 17, as will be seen on reference to the enclosed returns. Of course I do not attribute the cause of the depression to that fact alone, for in my own opinion the major portion of the leases that were in existence last year were only speculative ventures, taken up to make money out of, and not to prospect and develop the country.

None of the mines in this district have paid any dividends for the past twelve months. The United Alpine Company have lately introduced a new process for driving the stampers in connection with their battery, called the Pelton wheel, which is to supersede the old wooden wheel that has hitherto been the motive power. I believe it is the first piece of machinery of the kind introduced on the West Coast, and is giving entire satisfaction.

This Company have been labouring under considerable expense since the date of last report, but they have succeed in completing an "uprise" (a very necessary element in connection with the mine, both for "filling in" purposes and the supply of air) at a cost of about £2,500, and have driven their No. 6 level a distance of 1,800ft. I may state that the latter work has been going on for about four years, and has cost something like £5,400.

Nearly all the other Companies are merely prospecting, and have nothing definite to work on.

An "Association" has been formed, with a capital of £15,000, to prospect a large area near the Lyell township, known as "Manuka Flat," and many of the inhabitants are sanguine of good results being obtained, and if so a great impetus will be given to gold mining in this locality.

The construction of the "New Creek" track or road is looked upon as a great boon to the miners, as it will give them great facilities for prospecting the auriferous deposits known to exist in that direction. The Matakita and its tributaries are still giving employment to a number of miners, but none of them are making more than wages. The same may be said of those on the Buller, from Lyell to Murchison.

There are two Companies prospecting at the Owen reefs, and according to latest accounts from these the prospects are considered favourable.

A great boon will be conferred on the travelling public and miners by the construction of the bridge over the Matakita River, at Murchison, for which the Public Works Department are now calling tenders.

Since January last Courts are held fortnightly at Westport and Reefton, monthly at Lyell and Charleston, and once in three months at Murchison.

With regard to the population of these sub-districts very little, if any, alteration has taken place since the last report, but a decided improvement is taking place in the town of Westport, and the population is rapidly increasing.

I have nothing further to communicate of any importance, and think all the necessary information will be found in the enclosed returns.

I have, &c.,

FRANK BIRD,

Warden.

The Under-Secretary, Mines Department, Wellington.

No. 8.

Mr. Warden BIRD to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Reefton, 20th May, 1885.

I have the honour to forward herewith statistical returns for year ended 31st March, 1885, and to report on the Inangahua District during the same period. The very heavy calls that were made during the years 1882 to 1884 being expended upon works which did not turn out perhaps so productive as was anticipated necessarily caused considerable depression in the mining industry, and this depression has extended through the year just ended. I think, however, the district may now be congratulated upon having passed through so successfully one of the dullest and most trying periods of its history.

As anticipated in the last report, the year has proved much more prosperous than its predecessor, the calls being very much smaller and the dividends larger. The calls amounted to £29,333 6s. 8d.,

showing a decrease of £20,122 18s. 4d., whilst the dividends amounted to £34,100, being an increase of £17,600. The quantity of stone crushed was 34,349 tons, yielding 23,997oz. of gold, valued at £93,842 7s. 1d. The yield of alluvial gold, so far as can be ascertained, was 4,649oz., valued at £17,666 4s., thus making the value of the total yield of the field £111,508 11s. 1d., showing an appreciable increase of £23,085 11s. 8d. A considerable number of leases have been cancelled for non-payment of rent and for non-execution, the more legitimate undertakings alone surviving. This, I think, should tend to improve matters by the expenditure of capital upon mines which have fair prospects. Two or three applications have been made for the cancellation of leases, and they have had a somewhat wholesome effect by causing several claims that had been idle for some time to recommence operations. A little prospecting has been done, and in several of the claims a very large amount of dead work has been performed, from which good results may be anticipated. In order to give some idea of the operations of the year I will, as has hitherto been the custom, refer to some of the leading features.

Welcome.—This claim has enjoyed a prosperous year, having disbursed dividends to the amount of £16,500. Winzes have been sunk on the reef to a considerable depth at the north and south ends of the block, and the main shaft, being sunk in order to open up No. 8 level, is now nearing completion.

Eureka.—The work of putting down the incline tunnel to intercept the Welcome line of reef has been carried on continuously. The Company, after expending £10,000, have now reached their boundary, the length of the tunnel being 2,200ft. with a depth of 450ft. below the No. 6 level of the Welcome. A cross-cut is now being put in for the reef. The success or otherwise of the undertaking should shortly be proved.

Just-in-Time.—Have driven along the line of reef and are within 130ft. of the perpendicular of the winze from the upper workings on the eastern reef. When this point is reached should stone not be found it will be necessary to construct an uprise of 90ft. to strike the bottom of the winze. This will give about 260ft. of backs over the level now being driven on to the old Boatman's Creek level. Prospecting is being carried on in conjunction with the Walhalla Company. Hopes are entertained that this claim should be crushing in six months' time.

Reform.—This was formerly known as the Imperial. The Company is driving south from Just-in-Time shaft towards the lode formerly worked by the Imperial.

Fiery Cross.—In the earlier part of the year had several crushings with fair results, enabling dividends to the extent of £1,200 to be declared. A considerable amount of prospecting has been done, and I believe recently some very fair stone has been met with.

The Low Level Tunnel at Boatman's is still being driven and should reach the Welcome line of reef in the Homeward Bound lease in 3 or 4 months' time.

In the Murray Creek portion of the district work is found for a large number of hands. In the Energetic a few men are employed driving for the Macedonian reef. The Phoenix is now engaged prospecting. Two or three crushings were obtained from this claim during the year, and £1,200 was declared in dividends. In the Inglewood claim several crushings have been had, resulting in profit to the Company to the amount of £2,306 16s. Out of this sum £1,200 was paid in dividends, the balance going to complete the payment of cost of machinery, and in part payment of the cost of construction of the main shaft. The main shaft has been sunk 120ft. below the present level (No. 4). It is intended to open out the No. 5 level at a depth of 100ft. down the shaft, thus giving 150ft. of backs to No. 4 level, where the reef shews a length underfoot of 220ft. with an average thickness of 4ft. carrying fair gold. The proximity of the shaft to the reef will be a great advantage to the Company in opening future levels, as the distance to be driven for some years will be nominal. From the foregoing it will be seen that this claim is getting into a good position, and should not be very long before crushing again. Judging from the quality of the stone met in the shaft, and from past experience, I think the success of the claim is assured.

In the *Wealth of Nations* the low-level tunnel was completed towards the close of last year. When a distance of 750ft. had been driven, a block of stone was met with, but at the time it was thought to be only a boulder. The main drive was continued another 50ft., when the manager was induced by the altered formation to return to the boulder. A cross-cut was put in, and after driving a few feet a considerable body of gold-bearing stone was met. This has been driven on over 100ft., stone continuing all the way, in places a little broken. In order to test the stone at a lower level a winze was sunk over 100ft., stone continuing to within a few feet of the bottom, when the underlie carried the reef out of the winze at too sharp an angle to be followed. The winze is now being carried down off the stone, but after it has been sunk a few feet further, a cross-cut will be put in for the line of reef, and upon the underlie being ascertained, the company will decide how to work the next level. They have now started to drive along the course of the reef on the north side of the main level, believing that the continuation of the reef in the direction of the Energetic will be picked up, in which case crushing would be resumed. The prospects of the claim are fair.

The *Keep-it-Dark* has kept its 20-head battery constantly crushing. Care has been taken to open up the claim properly. The existence of an immense body of stone has been proved, sufficient to keep the battery going for fully three years. The reef measures from 2ft. to 29ft. in thickness. The claim, during the year, has yielded £14,000 in dividends.

In the Devil's Creek District the only claim at work is the *Globe*. About December last No. 1 level in this claim was worked out. Two winzes were sunk from No. 1 level, the north winze to a depth of 90ft., and the south to 102ft., proving the existence of payable stone at those depths. A main shaft has been sunk 250ft. from the surface. The winding machinery is worked by an endless rope attached to a water-wheel at the machine site, over a mile from the shaft. The shaft has been completed, and the reef is now driven for. Crushing should be resumed in a few weeks, and, judging from the character of the stone left at foot of the winzes, should be attended with more profitable results than obtained from No. 1 level, which produced £10,880 worth of gold.

In Rainy Creek the *Inkermann Company* have kept their 30-head battery well employed. About 40 men are at work in and about the claim. Stone from lower level working upwards has proved of higher value than in the upper level. Permanent works are in hand for opening up other levels. A shaft has recently been commenced, it is proposed to sink it 150ft. The crushings to date have given a good profit, enabling the company to pay off a considerable portion of the debt incurred in the erection of the machinery, so that when the debt has been extinguished dividends may be expected.

During the summer and autumn there was oftentimes a great scarcity of water, and the progress of the field was much retarded in consequence.

The diamond drill purchased some two years ago by the Inangahua Council, has unfortunately not been put to any use up to the present time. I believe the Picton Borough Council, having been given the interest the Government had in the drill, have asked the Council here what sum they will take for their share. A number of people are of opinion that the drill should not be sold, but used in prospecting the district.

Professor Black visited Reefton recently and delivered several lectures, in which the community took a lively interest. Testing classes have been formed, and are now only awaiting information from the professor as to the probable cost of the outfit.

Taking all things into consideration, I think the prospects of this field are much brighter, and evidence of this is not wanting. There is every reason to believe that there will be a number of claims crushing in the course of two or three months, which have been idle for a long time. Considerable attention is being drawn to the *Eureka*, as should that claim strike the *Welcome* reef it cannot but be attended with beneficial results, and will impart new life to mining in the locality. Nobody can deny that the shareholders are deserving of success.

I have, &c.,

FRANK BIRD,
Warden.

The Under-Secretary for Gold Fields, Wellington.

WESTLAND GOLD FIELDS.

No. 9.

Mr. Warden KEDDELL to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Greymouth, 14th May, 1885.

I have the honour to forward the following general report on the condition of the mining districts under my charge during the past financial year.

The statistical returns for the same period, called for by you, have already been furnished.

I have not had the advantage of a personal observation of affairs here, except during the last quarter of the year, when I relieved Mr. Warden Stratford of the charge.

Barrytown.—The mining population of this place and the several creeks between it and Greymouth, and again north to Razorback, has remained at decreased numbers as appeared in last year's report. No new ground has been discovered, or if so reported, and no increased amount of water to work that occupied, has been applied for to any extent worthy of note, still there does not appear to have been any diminution of numbers, and a certain amount of steady work, but for very small results, has been done. The bridge which my predecessor referred to as about to be built over the Grey River, between Cobden and Greymouth, and which when completed he hoped would give an impetus to this portion of the district, has unfortunately been seriously damaged when near completion, by a high flood in the month of January, and the work has not yet been resumed. A track which is under construction by the county between Barrytown and Razorback, will open up a considerable tract of country which is at present unoccupied and well worth prospecting, and I think the future prospects of this portion, and indeed the whole of the district, depends greatly on such aids. The whole country being dense bush, the means of conveying provisions at present are very scanty; tracts suitable for pack-horses up the sides of creeks would be of great assistance to prospectors. I have no doubt that the Cobden bridge will greatly promote mining enterprise in that portion of the district within the provincial District of Nelson, extending northward by the coast.

South Beach, &c.—In this direction towards the Teramakau, and at Rutherglen and Welshman's, some but very unimportant mining operations continue, giving employment to about the same number of Europeans and Chinese as last year, about one hundred and fifty.

Marsden.—In this locality little has been done, though I have reason to believe that there may be good untried ground in the neighbourhood. An application was made to me a little time since for a "prospecting area" by a miner who believes in the existence of a deep lead of gold not far from Marsden, and the prospecting being necessarily of an expensive nature—long tunnels occupying much time and labour to construct—the applicant was desirous of obtaining the "prospecting area" within which he might prosecute his search and know the ground was secured to him. Unfortunately this can only be granted "upon the application of any persons forming a party of not less than four;" the regulation might be altered with advantage. I have known frequent instances of its checking prospecting adventure; a miner does not always care to take in three other partners.

At *Irishman's*, in this neighbourhood, a prospecting party in the same description of ground obtained some pecuniary assistance from the County Council, and by its means were encouraged, if not solely enabled, to continue work until a short time since they found what they hope will eventually realize their expectations. Two or three other claims have been taken up in double areas, and I make no doubt, as the labor and time required to be expended in reaching the auriferous dirt in such a position as to work it successfully, is so great that the prospectors have some substantial earnest for future success to inspire them. If these claims prove successful, a considerable area of the same class of ground will be opened up.

Greenstone.—Nothing of any importance has occurred during the year. The hydraulic sluicing claims have been steadily worked when water was available, but the long drought militated greatly against successful work during the past quarter. About fifty Chinese continue working here, for the most part in the bed of the Greenstone Creek; they appear to be contented with the result.

At *Dunganville* the same claims as last year, with little or no difference, have been working, and some fair results obtained.

No Town.—Two unimportant rushes took place in this locality since last report, but they were disappointing in effect, and had no permanency.

Arnold.—Very little mining has been done in this (Maori) Gully, and that principally by Chinese. The New Zealand Steam Sluicing Company venture, if successful, may improve mining prospects. The proposed workings of the company have already been described in last report. Since then the special claim of ten acres has been granted by His Excellency the Governor, and machinery, two steam-engines and other plant have been erected, and have commenced work. It would be premature to pronounce on the probabilities of success or otherwise. If successful the undertaking will prove most profitable to the projectors, and will be followed in this locality, and in other so-supposed worked-out creeks, whose beds have been covered with tailings in some instances 100ft. in depth.

At *Nelson Creek* mining has looked up during the past year, and a very fair rush took place a few months ago, but the excitement was evanescent, and has long subsided. There are still a great many claims worked along this and neighbouring creeks towards Ahaura. *German's* and *Callaghan's*, and *Try-Again Terrace*, which may be said to be a part of Nelson Creek, still support a good many men, who, with their families, appear to have settled with something like comfort in this place.

At *Ahaura* itself mining is duller than ever before, but the surrounding places—*Moonlight*, *Blackball*, *Orwell Creek*, *Granville*, and *Noble's*—are fairly populated with miners, who make steady work at remunerative wages; but no fresh discoveries and no yields worthy of mention have occurred.

The other matters of information as to revenue, and Court returns, will be found in the special returns made under the various heads.

I have, &c.,

JACKSON KEDDELL,
Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 10.

Mr. Warden GILES to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Hokitika, 27th April, 1885.

With the usual goldfields' statistics and returns I have the honour also to report as follows upon the state of this district:—

Kumara.—There is nothing new to report in connection with mining matters in this district. There has been a good deal of dry weather during the year, which has somewhat obstructed sluicing operations, but the yield of gold for the time during which work has been carried on has been good. No new ground has been opened up during the year.

The old-standing difficulty of the sludge channel remains, but a project is now on foot for affording relief by an auxiliary channel which, if it takes effect will, it is to be hoped, enable work to be carried on with far fewer interruptions than hitherto.

The whole subject of the Kumara sludge channel has formed the subject of such copious correspondence that it seems superfluous to say more about it now, especially when, with the exception of a proposal to form a second channel, the whole business stands practically much in the same position as it did at the date of my last report.

Waimea.—The Kelly's Terrace Company continues its operations, which have been somewhat retarded by the character of the ground met with in making the tunnel. The first section of the tunnel is now completed, and tenders are invited for the second, so that it may be hoped that in a few months this company may be in a position to begin sluicing.

There is little else to record in this part of the district. During the past year the services of a resident clerk of courts has been dispensed with, and the business at Stafford is now done by the resident constable at that place, and at Goldsbrough by the clerk of the Kumara Courts, who attends there and opens the office one day in the week. Quite lately the business at Stafford has greatly fallen off, but how far this may be due to temporary and fluctuating causes cannot yet be determined.

Hokitika.—In my last report I gave some account of the large water-race being brought in by the Humphrey's Gully Company and of the difficulties caused by the "pug" met with in the tunnel. These difficulties turned out to be even more formidable than they appeared at that time, but they have at length been overcome, and the "pug" has now been successfully penetrated by the tunnel. The long difficulty with this intractable material has, of course, postponed the time when profitable working can be commenced, but I do not know of any reasons for modifying in other respects the sanguine expectations that have generally been indulged in respect of this company's property.

Kanieri.—No particular change has taken place in this division of the district. The Rimu diggings continue much the same, and now and then a new claim is announced to have bottomed upon gold in one direction or another, and I think the general tendency is to extension of the diggings. The coal at the Kanieri River mentioned in my last report has not yet proved capable of being successfully worked.

Totara.—I am sorry to report in this part of the district considerable collapse of active operations and of sanguine hopes. The large claim of the Ross United Gold-Mining Company is not at present working. The rich gold alleged to exist on what was known as the Cassius bottom has not yet been discovered at the 300ft. level, and I believe some difficulty is apprehended in approaching the old

Cassius shaft by reason of the danger of tapping a large quantity of water, and of the general risks attending operations in old workings. Nevertheless, the question of the existence of a rich deposit at that level cannot be considered to have been determined in the negative until the spot where it is said to have been actually found in former years has been searched, and it may be presumed that the stopping of the pump and driving operations in this claim—the immediate cause of which seems to have been a difference with the workmen—will prove to be only temporary.

The claim of the same company at Jones's Flat, commonly known as the "Elevator Claim," is in active work. The mode of working this claim, which is lighted by electricity, is ingenious and interesting, and I believe there is good reason to expect that it will turn out a good and profitable property. The Ross United Company has also lately acquired the claim known as the Prince of Wales, but this ground can hardly be worked to advantage until water is brought to it by a costly head-race.

The Mont D'Or claim is still in active work.

The Donnelly's Creek Company has completed the drainage tail-race to the claim, which has proved a work of much labour and expense, and it may be expected that this ground will shortly be tried.

In my last report I mentioned the discovery of some auriferous quartz at Cedar Creek near Ross. The discovery proved at all events sufficiently specious to cause a good deal of excitement, and some 40 gold mining leases were shortly applied for, but nothing can yet be definitely stated about the real value of the ground. Some driving and some experimental crushing of stone are being carried on, but without more capital than seems to be at present available for the purpose no important results can be expected, and until some of the other heavy ventures in the neighborhood have proved successful, there will be difficulty in obtaining money for new speculations.

I regret that the general tenor of my report on the mining operations at Ross are of a much less favorable character than it seemed twelve months ago reasonable to hope. But it must not be forgotten that some very useful work has been done which can scarcely fail to exercise a permanently beneficial effect upon Mining operations in that neighborhood. For, setting aside all question of very deep sinking, there can be no question that the main drainage tunnel of the Ross United Company will enable a large quantity of ground to be worked, to double the depth that was before possible. It must be remembered that before the formation of the Ross Flat Company the project of bringing in a drainage tunnel had been set on foot by the Ross Municipality for the purpose of allowing the flat to be worked to a greater depth, and it was generally recognised that this of itself would be a great boon to the mining industry.

That tunnel is now made, but the disappointment of the perhaps extravagant hopes that were entertained regarding the deeper strata is at present rather blinding people to the real gain which the district has undoubtedly acquired by the possibility of working a large extent of land formerly unworkable.

Of this gain the present working of the Elevator claim is a sufficient proof, and the Prince of Wales, whenever water is available, will illustrate the same thing. In fact I see no reason why the large area of ground held by the Company should not be profitably worked, even though the worst supposition should turn out to be true and they should be obliged to relinquish all that is below the level of the tunnel.

Scientific Lectures.—The miners and other residents in the district have given a warm welcome to Professor Black and Mr. Montgomery, who have succeeded in arousing an enthusiastic interest in the chemistry of metals and of mining. The only drawback attending this little scientific incursion among us is the scanty time at the disposal of the lecturers and the impossibility of novices in chemistry learning in the time one-half of what Professor Black had to tell them. But Professor Black did all that scientific enthusiasm, thorough knowledge of the subject, and a great power of lucidly setting it forth could accomplish; and both he and Mr. Montgomery really achieved a wonderful success in imparting so much information and exciting so much interest in the limited time at their disposal. At Kumara and other places classes for study are projected; and it may be hoped that, if Professor Black comes again next year, he may find that some scientific seed has fallen upon good ground.

I have, &c.,

The Under-Secretary, Gold Fields Department, Wellington.

J. GILES.

No. 11.

Mr. Warden MACFARLANE to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Jackson's Bay, 18th May, 1885.

I have the honour to enclose herewith goldfields' returns for the twelvemonth ended 31st March, 1885; also general report on the district under my charge for the same period.

OKARITA SUB-DISTRICT.

Mining operations in this district are entirely confined to alluvial workings—viz., terrace-workings at and around Lake Maparika, black-sand workings on the various sea beaches, and creek and river-bed workings on the Waiho, Cook's, and other rivers and creeks in the district. Small wages are being made by most of the miners. During the past year no new discoveries have been made, and, although there is no lack of untried ground, I have heard of one party only who has been prospecting about the head waters of the Waiho, where a considerable quantity of coarse gold was obtained a couple of years ago. However, the efforts of this party have not resulted in anything tangible so far. This district having been assigned to me very recently I refrain from saying anything more until I am better acquainted with its capabilities and requirements.

JACKSON'S BAY SUB-DISTRICT.

Gold-mining in this district is also confined to alluvial workings. Some of the beach claims are paying remarkably well, and most of the men at work are making average wages. Payable terrace workings have been opened on the Abbey Rock Ranges, to which a pack track from the main south road is now being constructed. This will give easy access to this heretofore inaccessible place, and no doubt by the time the tract is finished the population will be largely increased. Bullock Creek—another part of the same range—continues to give profitable employment to a number of men. On the Haast Beach there are about twenty men at work. Two large tail races have been brought in at half-tide level from the sea beach to the back lead to drain the ground. This involved a large expenditure of both time and money, as the cuttings were very heavy. However, the work has been completed in a substantial manner, and the men are now at work opening up their claims. The ground is not rich, but with the improved and systematic method of working adopted, they expect to make average wages. At Barn Bay and Gorge River gold has been found in payable quantities, and several parties are making arrangements to commence work in that locality. Two parties are already at work at Barn Bay, where they have secured valuable water-rights in connection with their claims. About three miles up the Gorge River a party have prospected and taken up a claim on the river, excellent prospects were obtained, and they purpose turning the river so as to work the ground to greater advantage. The block of country from Barn Bay on the north to Big Bay on the south, is auriferous throughout, and is one of the most promising blocks of untried country on the Coast. Hitherto its extreme inaccessibility has kept it a *terra incognita* to all but the most venturesome spirits, who, from time to time on their return, called attention to its value as a likely goldfield. The recent visit of Mr. Mueller, Chief Surveyor to this district, and his report thereon, together with information obtained from those connected with the Survey Department, all go to confirm the often repeated assertion made by the late Andrew Williamson of Big Bay, that this was one of the most valuable mineral districts in the Middle Island. So far, the bar to the opening of this promising piece of country has been, and is, the want of roads. Last year a beginning was made in the right direction, a rough pack track having been constructed from Jackson's Bay to Carmichael's Creek, on the Cascade Plateau, but, to be of any service, it must be continued on the line of the main south road as far as the Cascade Valley, a distance of eight or nine miles, before goods can be packed to where the men are at work, or be of any service in opening up the district. Discoveries of minerals other than gold are frequently reported, but unless where the ores can be traced to where they occur *in situ*, they are only valuable as indicating the presence of the metals in the district. In the above connection a valuable series of seams of bituminous coal, equal to that found at Greymouth, occurs in the bald hills near the Haast. This deposit, taken in connection with the discovery of copper ore, "yellow sulphide," in the Okuro-Matakataka range, in the immediate neighborhood, is of great importance, as here we have all the requirements (such as timber, limestone, coal, and an ore giving 24 to 26 per cent. of copper, as tested by Professor Black) necessary for the successful launching of an extensive mining industry. Three mining leases have been surveyed and granted on the copper lode. This deposit occurs in the metamorphic slate, and has been traced for a long distance. The recent discovery of copper in the serpentine and olivine formations of the Cascade range, is of importance as showing the occurrence of this metal in a somewhat unusual form, viz., that of very minute grains of native copper thickly distributed through the rock, a species of talc. The separation of this metal from its matrix would be simply mechanical, and as the rock is soft, a comparatively easy matter. This irruptive and mineral belt, extending as it does to the head of Lake Wakatipu, gives promise of such important mineral discoveries as would warrant the Government in opening it up by the immediate construction of a pack track (on the line of the main south road, as indicated on the valuable map attached to Mr. Mueller's report) from the Cascade Plateau to the head of the lake. This would give prospectors facilities for examining the country, and enable them to bring their tools and stores within reach of their operations. With a passable pack track through this block, you can dispense with paid prospecting parties, for, with ordinary facilities for getting into the country, there are plenty of men ready and willing to do the rest. Applications for leases are before the Land Board in Hokitika in connection with the discovery of a deposit of plumbago, south of Jackson's Bay, trial tests from which are considered favorable. Rich specimens of galena and samples of platinum have been brought to this office during the year, but as the source from whence they are derived has not yet been found, I refrain from further remarks at present. Complaints continue to be made as to the infrequency of our mail service. Our regular mail comes every two months only. An extension of the weekly mail from the head of Lake Wanaka to Jackson's Bay, or that of the Paringa to the same place, would be of great advantage to the district.

I have, &c.,

D. MACFARLANE,

Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 12.

Mr. Warden HICKSON to the UNDER SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Clyde, 16th May, 1885.

I have the honour to forward herewith the annual report and statistics for the several mining districts under my charge.

In alluvial mining there has been some considerable stir at Mount Cruffel, on the Pisa Range, situated about ten miles from Pembroke and thirty-six miles from Cromwell, where, previous to the fall of snow on the 29th April last, there were about fifty miners employed, some of whom were doing remarkably well. The quality of the gold is not so good as in other portions of the goldfield, being

valued only at £3 9s. per ounce ; it is anticipated that there will be a large number of miners located there next spring.

In consequence of its high altitude and being covered with snow, work is now suspended, and all mining claims and privileges are under protection until the 31st October next.

At Tinker's and Drybread, in the Blacks Division, matters remain much the same as last year, except that a number of miners have purchased from the pastoral lessees of Matakanaui Station their pre-emptive right of ninety acres, which will enable them to have an outlet for their tailings from the deep ground.

At Clyde and Alexandra there is nothing new to report, the dredges on the River are still actively working, and, I believe, paying fair dividends. Alluvial mining is being carried on as usual.

In the Cromwell Sub-District the applications for claims and privileges have been above the average. At Bannockburn matters remain as before, the sludge channel is not yet finished and the claims in the deep ground are under protection awaiting its completion. The yield of gold I am unable to determine as I cannot obtain any reliable information on the subject, but I do not imagine that it is anything under that of last year. The population is about the same.

QUARTZ.

At the Obelisk Range, White's Reef is about the only claim at present getting out stone, although there are fifteen leases taken up ; the stone is generally of good quality, showing gold freely. The cause of so little work being done here may be attributed to the want of machinery.

Macetown.—Work is being carried on, but I hear of no dividends being paid. The road to Macetown is completed and is a great boon to the inhabitants of this portion of the district.

Upper Skipper's.—The Phoenix Company has done good work during the year, having crushed 2,000 tons of quartz, averaging 1oz. 8dwt. per ton, of gold.

The prospects of the mine are very encouraging, and as the water power for crushing only lasts during the spring and summer months, arrangements have been made to work the battery and other machinery by electricity, and it is expected to be in operation at the end of May. The Gallant Tipperary Company have also done considerable work during the year, but I have no knowledge of the results.

Head of Lake Wakatipu.—The Invincible Company have done considerable work in their mine, having crushed 3,173 tons of quartz, yielding 2,226oz. 3dwt. 18gr. of retorted gold, or at the rate of about 14dwt. to the ton. During the last six months of the year ending 31st March, dividends to the amount of £2,625 have been paid to shareholders. They have now a reef of 15ft. in width and the quartz is crushed as it comes, without picking. The working expenses for the year amounted to £4,542.

I have, &c.,

JAMES HICKSON,

Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 13.

Mr. Warden WOOD to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Naseby, 16th May, 1885.

I forwarded you the annual statistical returns for the Mount Ida Goldfield on the 3rd inst., on my arrival to take charge of the district, and was under the impression that Mr. Warden Stratford, whom I relieved, had forwarded the usual report. I am not in a position to give you any details as to the gold workings. I understand, however, that the washings up have been satisfactory, though water was scarce for about two months previous to the end of April. There is, however, a good supply of water now, and should the weather keep open for a month or two the year may have been considered a fair one. I look to an improvement during the coming year, as the Government water-race has been extended to Speck Gully, and should open up a large area of supposed auriferous land. At St. Bathans mining is carried on with great energy and on an extensive scale. There have been 218 applications for mining privileges and 145 granted.

I have, &c.,

J. NUGENT WOOD,

Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 14.

Mr. Warden HICKSON to the UNDER-SECRETARY for MINES.

SIR,—

Warden's Office, Clyde, 22nd June, 1885.

I have the honour to forward herewith the annual report for the Mount Ida gold field.

Since my last report there is very little of importance to mention, no new discovery having been made. The year on the whole has been fairly good, for although miners were kept almost entirely idle for the greater part of the first three months of this year, owing to the severe drought, yet both before and since then water has been abundant, and work carried on briskly. The spring of the year having been very wet, and during the two months last past there having been no less than five falls of snow, this fact combined with the unusual absence of hard frosts, has filled all the races to the full extent of their carrying capacity.

At Naseby mining matters show very little improvement upon last year, except that now the extension of the Government head race to Spec Gully has been completed, and the Ryan difficulty disposed of. By the reserve of the bed of the gully recently authorised, a large number of new claims have been taken up in the locality, and a considerable amount of work is now being done there.

At *Kyeburn* and the *Burster* the gold miners have had a very good season, and the coal miners still continue to turn out large quantities of coal.

At *Hyde* and *Macraes* work is carried on steadily, but with little, if any, perceptible improvement on last year.

At *Hamilton* and *Lowburn* mining is also being continued, and, although on a small scale, the results have been very satisfactory.

At the *Serpentine* very little is being done, a few parties of Chinese being the only workers.

At *St. Bathans* and *Vinegar Hill* work is being carried on vigorously, especially at the latter place, where mining is prosecuted on a large scale, and in the most approved style, by means of a quantity of machinery and plant, most of which has been erected at considerable expense.

At *Blackstone Hill* mining is almost at a complete standstill, there being only one claim working.

Quartz Reefing.—Last November a small company (under the name of the “*Otago Central Gold Mining Co., Ltd.*”) was formed in Naseby, embracing in its share list shareholders residing in different parts of the Colony, for the purpose of working the quartz reefs at Rough Ridge, a spur running north and south, about fourteen miles distant from Naseby.

For the last twenty years attempts have, from time to time, been made to work these reefs to advantage, but, while in several cases handsome yields have been obtained, in many instances as high as 3oz. to the ton, circumstances of some kind cropped up and ultimately militated against further success to such an extent that the companies rapidly drifted into liquidation. Quartz reefing has for some years past, been carried on in a desultory manner in this locality, and with varying success, although the quartz has been raised, not by companies, but by reefers of comparatively small means. The Ridge is a perfect network of reefs, leaders, and lodes, ranging in size from 10in. to four and five feet. The yields maintain a general average of between $\frac{1}{2}$ oz. to 3ozs. per ton. Large quantities of foreign minerals accompanying the gold, and these have of course a very considerable effect on the yield.

It is reckoned that if efficient appliances were at hand for coping with and destroying the power of the sulphides over the gold, the stone that generally returns from 2oz. to 3oz. per ton would, under an improved process, yield as much as 6ozs. and 7ozs., and in some cases even more. Since the Otago Central Company has been in existence much activity has been displayed in its management. During six months a tunnel, 6ft. high, and 5ft. wide, has been driven a distance of 300ft. through hard blue rock, at a cost to the Company of 26s. per foot, and even at this price the contractors made first class wages. In addition, two air-shafts have been sunk through rock, and cross-drives put in from the tunnel, 50ft. and 100ft. respectively. Much other necessary work has also been done. Some short time since a large body of water was met with, in driving along the reef, which necessitated the stoppage of further driving in that direction for some weeks.

I understand that the work has just been recommenced, and although it is difficult to prognosticate results where quartz-reefs are concerned, it seems probable that the operations of the Company will be attended with success. But even if such should not be the case it will by no means thus be proved that the field is not a payable one. In fact it has been proved that it is so, but that the latest improved appliances, and the best management obtainable, are necessary to develop its manifold resources to even an ordinary limit. The field is certainly worthy of a report by a Government Geologist, and I understand that efforts have already been made to get this done.

On the summit of the Rough Ridge, some few miles south of the Otago Central Mine, lies the Garibaldi Diggings, from whence some very rich yields have been taken in times past, but there has always been a lack of water, which has usually to be stored, always an expensive operation. The shallow ground has been worked by means of sluicing, but the auriferous deposits are becoming deeper, necessitating heavy expenditure in constructing deep tail races through hard metamorphic rock. An attempt is now being made to do this, and it may be some time before the result can be made known. The ore is all heavy reef gold, and cannot have travelled far, as its surface has not been much abraded by the action of water. In fact reefs have been discovered in sluicing, and this is further proof that they are not confined to one particular part of the range.

Settlement on the Crown lands goes on steadily, a large number of areas having been taken up during the year.

I understand that the statistics of the District have already been forwarded from the Naseby office.

I have, &c.,

JOHN S. HICKSON,
Warden.

No. 15.

Mr. Warden REVELL to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Warden's Office, Laurence, 7th May, 1885.

I have the honour to transmit herewith the annual report and statistical returns from the Tuapeka and Waikaia districts, which have been under my charge since the 1st January last, but owing to the short time I have been in charge I have not been able to make myself so conversant with the various mining centres and other outlying localities in this extensive district as I would have wished before furnishing my report.

There have been no new rushes or discoveries of fresh leads during the past year of any importance.

At the Blue Spur the amount of work done in the various claims has considerably decreased, when compared with that of former years, still the prospects in most of these claims are considered very rich, especially if the claims can be worked by the new method of hydraulic sluicing known as Perry's process.

The Gabriel's Gully Tailings Company hold a claim of 24 acres, and Mr. Perry, the promoter of the Company, has been most successful in carrying out his process of hydraulic sluicing, by which the tailings and debris are forced up 50ft. or more from the bottom of the claim and carried away in the sluice boxes at a very small expenditure of labor, the work in the claim being performed by nine men, which otherwise would require 30 or 40 men to do the same work.

The Company expect to find better ground as the workings are approaching the tailings in the more immediate vicinity of the old Blue Spur claims which paid handsome dividends in former years.

The Great Extended Company have let a portion of their ground on tribute, and both the tributers and the Company appear to be well satisfied with the results of their recent washings up. They have a ten head battery at work in their original lease, and are preparing to work a portion of their claim by Perry's hydraulic process, and seem very sanguine as to the results when the works are completed.

The company purchased the claim known as Hales and Co.'s Claim with the 20-head battery thereon, but this battery is at present idle, as well as the 15-head battery on Morrison and Co., and the 10-head battery, and the Nelson and Co. leases.

The Otago Company keep 20-head, Cousins and Co. 20-head, and the North of Ireland Co. 10-head batteries in work on their respective leases.

About 100 wages-men are employed in the various claims at Blue Spur.

There are also several parties engaged on alluvial and river claims in Gabriel's and Munro's Gullies making fair wages.

At Wetherstones the principal claim is that known as the Wetherstones Company. They hold a special claim of 19 acres, and have expended over £25,000 on the works in connection with the claim, which is worked by an incline-shaft and tunnel. They keep 25 men employed on the works.

The Tuapeka Prospecting Company, formed two or three years ago to prospect different localities, have expended about £900 sinking a double shaft 270 feet and driving 200 feet of a tunnel at foot of the shaft, but the work has been suspended for want of funds. The company was subsidized by the Government £ for £ to the extent of £300, and they expect to receive further assistance during the current year to enable them to carry on the works.

Some alluvial claims are being worked in this locality; they are principally held by Chinese.

At Waipori there are about eighty Europeans and seventy Chinese at work.

The results from the Crushings at the quartz claims have not been as satisfactory as at first anticipated.

From the work done it is evident that well-defined quartz reefs exist, but the want of capital has been a great drawback to their being successfully worked.

It is considered that other payable quartz reefs exist in the Lammerlaw Range, near Waipori, if parties could be induced to do a little more vigorous prospecting.

The Undaunted Company have seven or eight men employed on their claim, keeping five head of their ten-head battery at work, and purpose putting on ten additional men, so that the battery can be kept in full work.

Cox and Co., known as the Maori Claim, have eight men employed on their ground.

The miners working in alluvial claims are doing fairly well. Many of the men formerly employed in the reefs have taken up claims in alluvial ground, from which some good results have been obtained.

At Waitahuna there are four or five large sluicing claims in full work, near the head of the gully.

The Norwegian Company command a good supply of water, and are sluicing away in face of the hill from 40 to 70ft. in height with good results. Other claims of a similar nature are also sluicing into the gully, which is being rapidly filled up with mullock and tailings.

On the Flat, on the south side of the Waitahuna township, three or four deep claims are being worked by open stripping and carting the wash dirt out to the working paddocks on the bank of the river. Several Chinese hold claims in this locality and are making good wages.

At Adam's Flat there are about fifteen Europeans and thirty Chinese at work in alluvial claims. The ground is very wet and deep to work, whilst the supply of water for working is very limited. Miners are not averaging more than 30s. per week when at work. Many of them have been away harvesting during the fine weather.

Some miners are working alluvial claims on the Mining Reserve at Evans' Flat and Tuapeka West, making fair wages, and a few Chinese are working claims near the junction of the Tuapeka and Clutha rivers.

There is one dredge at work on the Clutha river below the Beaumont making fair wages. I am informed that other dredges were working there, but they have removed further up the river, outside the limits of my district.

Several of the miners in the Tuapeka district have settled down on the mining reserves, and have fenced in large areas for agricultural purposes, which will hereafter materially interfere with mining operations. Proceedings were taken against some of them, and fines inflicted for occupying the reserves without legal authority, but as they were not compelled to remove their fences, it appears to have had so little effect that further encroachments are being made. I would suggest that some regulation should be made by which the miners would be allowed to occupy certain portions of the reserves at a nominal rent, but reserving the full right of miners to enter upon the land for mining purposes, and at the same time protecting the crops until cut or removed.

During the year 3 agricultural leases, with an area of 335a. 2r. 19p., and 17 deferred payment licenses, area 1,507a. 1r. 9p., have been taken up. The area comprised in 3 agricultural leases, 952a. 2r. 19p., and 40 exchange and deferred payment licenses, 4,056a. 2r. 37p. have been made freehold. The provisions for the relief of deferred paying leaseholders in arrears of instalments of payment have been largely taken advantage of in the district. Altogether 7,428a. 2r. 22p. have been brought under their operations.

WAIKAIA DISTRICT.

There are no quartz reefs at work in this district. Two or three parties have been out during the summer months prospecting at the head of the Waikaia River, on the Old Man Range, where reefs are supposed to exist, but so far they have not been successful.

Alluvial mining is carried on in several localities, the greater portion of the claims being held by Chinese.

In Welshman's and Moffat's Gullies, near the township of Waikaia, there are a few parties of Europeans at work, but the Chinese hold some of the best claims. The Argyle Water-race, which takes its source from the Argyle Range, is 14 miles long, and capable of carrying 24 Government heads. This race was originally constructed by Europeans, but is now held by a company of Chinese, who are extending it to an adjoining gully at a cost of £1,500, and, when completed, they will have the command of a large area of auriferous ground in the locality.

At Winding Creek, four miles from Waikaia, very rich ground was worked in former years. The lead of gold was lost in the claim known as the Switzer's Freehold sluicing claim. Several parties have gone to considerable expense trying to pick it up, but, so far, without any result. About three months ago a party of Europeans took a lease of the claim, and are now at work making further search for this lead.

In the Upper Waikaia, Whitcombe, and Campbell's Gullies, distant from 30 to 40 miles from the township, a few claims have been worked with good results, but the men were compelled to leave in consequence of the heavy charge (3d. per lb.) for packing.

In Potter's Gully some claims have been worked in the shallow ground, yielding fair returns, whilst some of the river claims in the same locality have paid high wages, but the owners are subject to occasional floods, and can only work their claims during four months of the year.

Recently a party of Europeans struck a rich lead in the old bed of the Waikaia River, about 20 miles from the township, which may induce other miners to visit the place.

There is a large extent of alluvial ground in the Waikaia bush which has never been prospected. The want of a good road from Waikaia to the Upper Waikaia is a great drawback to mining operations and prospecting generally.

At Waikaka the Chinese are working the Mining Reserve near the river, but the ground being poor, they are only making poor wages.

Two Europeans have the command of the only available water. At Sullivan's Paddocks, about six miles from Waikaka, they have a good claim, which is likely to last for some time and yield good returns.

The Nokomai, about thirty-two miles from Waikaia, is almost deserted. There are only seven Europeans and twenty Chinamen at work. The latter have opened a general store for their own convenience; they also have another store at Welshman's, near Waikaia.

A considerable portion of the land near Waikaia, in the Wenden District, is more or less auriferous. The miners are paying 2s. 6d. per man per week to the owners of sections already disposed of for the right to mine on the lands. I find there is a very strong objection in the district to the auriferous land being leased except for pastoral purposes. A great extent of the ground would be worked with profitable results if water was available, but the cost of bringing in a race is too great an undertaking for the miners at present.

The yield of gold in the Tuapeka District is estimated at 17,000oz., and in the Waikaia District at 2,200oz., making a total of 19,200oz., as far as can be ascertained from the returns furnished to the county authorities.

Sittings of the Warden's Courts are held fortnightly at Lawrence and bi-monthly at Waikaia.

Sittings of the Resident Magistrate's Courts are held weekly at Lawrence and bi-monthly at Waikaia.

I hold also monthly sittings of the Resident Magistrate's Court at Milton, Balclutha, Tapanui, and Clinton outside the goldfields district.

I attach returns showing the number of miners' rights, licenses, &c. issued, the total revenue of the goldfield's district, the number of cases disposed of in the Resident Magistrate's and Warden's Courts and the total population of the goldfield's districts.

I have, &c.,

W. H. REVELL,
Warden.

The Under-Secretary for Gold Fields, Wellington.

RETURN OF MINERS' RIGHTS, LICENSES, REGISTRATIONS, &c., issued during the Year ending 31st March, 1885.

					Tuapeka.	Waikaia.
Miners' Rights	...	...	...	...	476	176
Business Licenses	at £5	...	...	...	5	2
"	" £3	...	...	...	...	1
Water-Race Licenses	" 5s.	...	...	...	1	3
"	" 2s. 6d.	...	...	...	102	66
Registrations	" 10s.	...	...	...	15	...
"	" 1s.	...	...	...	76	98
Application for Gold-Mining Leases	...	...	...	...	5	...
Gold-Mining Leases granted	...	...	...	...	6	...
Applications for Agricultural Leases	...	...	...	...	8	...
Agricultural Leases granted	...	...	...	...	2	...
Mining applications	...	...	...	...	82	128

RETURN OF REVENUE for the year ending 31st March, 1885.

	Tuapeka.			Waikaia.		
	£	s.	d.	£	s.	d.
Warden's Department (including rents under deferred-payment leases)	6,627	2	8	236	5	9
Resident Magistrate's Department	226	6	0	22	1	0
Licensing Courts	15	11	0	2	18	0
	£6,868	19	8	£261	4	9

RESIDENT MAGISTRATE'S COURT.—WARDEN'S COURT.

	Civil.	Criminal.		Total.
Lawrence	250	117	43	410
Waikaia	42	16	31	89
	292	133	74	499

The population of the two districts is estimated at 6,870 souls, viz.:—

Tuapeka	5,161 Europeans	622 Chinese	Total 5,783
Waikaia	837 „	250 „	„ 1,087
	5,998	872	6,870

The population in the Magistrate's district, outside the goldfields, is estimated at 14,504 Europeans and 100 Chinese.

No. 16.

Mr. Warden ROBINSON to the UNDER SECRETARY for GOLD FIELDS.

SIR,— Warden's Office, Oamaru, 31st March, 1885.

I have the honour to report as follows upon the portion of the goldfields under my charge (the Maerewhenua Division) for the past year :—

The seasons have on the whole been favourable for mining, and the supply of water fully up to the average:

No new discoveries have been reported, and the number of miners has remained pretty constantly the same as last year. It is to be remarked that most of the miners have been in the district for a number of years and that they deserve to be considered settlers, having as a rule established themselves in comfortable homes. Most of them possess cattle and horses, and some are freeholders.

The work, as explained in former reports, is entirely sluicing, and the ground mostly heavy to work. Thus there is little variety, and the same people, having once got their head and tail races into working order, remain working in the same localities from one year to another.

It is not easy to estimate the yield of gold from a district in which there is no bank or regular gold-buying agency, as, of course, there are no escorts. Some of the gold is bought by storekeepers, and some finds its way to Naseby or Oamaru. It seems probable, however, that there has been fully 800oz. obtained during the year.

It will, of course, be understood that scarcely any of the men are exclusively dependent upon mining for their livelihood, their cattle and gardens, and in some instances larger cultivations, contribute to their means of living. Besides this, there is a great deal of farming going on in the vicinity, and such as are competent and have the inclination can obtain very good wages at harvest and shearing times.

Altogether, the little community at the Maerewhenua must be described as fairly prosperous.

I have, &c.,
H. W. ROBINSON,
Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 17.

Mr. Warden MAITLAND to the UNDER-SECRETARY for GOLD FIELDS.

SIR,— Warden's Office, Dunedin, 14th May, 1885.

I have the honour to forward herewith the annual returns relating to mining pursuits in the Hindon District for the year ending 31st March, 1885.

The circumstances of the district have not materially altered since last year, and therefore do not call for any special notice on the present occasion.

About 730 tons of quartz have been crushed during the year by the Don Quartz Mining Company, 650 tons of which were from the company's own mine, the rest being trial crushings for other parties.

The total yield of gold from the 720 tons was about 185ozs., or a little over 5dwts. to the ton. Such a yield could, with judicious management and an ample supply of water, be made to pay well.

Settlement in the district is still steadily progressing, further areas under both the deferred-payment and perpetual-leasing systems having been taken up during the year.

The population, including miners, settlers, and others, is estimated at between two and three hundred.

I have, &c.,

J. P. MAITLAND,
Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 18.

Mr. Warden McCulloch to the UNDER-SECRETARY for GOLD FIELDS.

SIR,—

Resident Magistrate's Office, Invercargill, 16th May, 1885.

I have the honour to forward herewith the annual statistical returns for the Orepuki and Longwood districts for the year ended 31st March, 1885.

During the past year there has been no change in the position or prospects of this district, as regards gold mining, sufficient to call for special remark.

At Orepuki the population and yield of gold have varied but little for several years. The miners are for the most part old residents, having other local interests to attach them to the district. The water supply is limited and in few hands.

Of the eight mineral (coal) leases granted at Orepuki three have been amalgamated into "The Orepuki Coal and Shale Company." This Company have constructed a first-class tramway connecting their shaft with the railway terminus at Hirstfield, and the railway having been now opened, they are bringing their coal into the market in considerable quantities. On the remaining leases little or nothing has as yet been done.

At Round Hill the position of mining matters remains about the same, and there seems to be nothing to indicate future improvement until something can be done to relieve the want of water and fall, which alone prevent the extension of mining operations over the, as yet, untouched area of payable ground known to exist on this field.

A water race, calculated to bring a large supply of water in to Round Hill, has been for a long time in the course of formation. The whole length of the race is about 19 miles, and 11 miles of this have been already finished by Mr. Bernstein, the promoter, who has expended large sums of money on the work. He is now, I believe, without the funds necessary for its completion, and in this position has applied to the Government for assistance.

As the enterprise, when completed, is calculated to be of great benefit to the miners generally, it is to be hoped that Mr. Bernstein's application will meet with favourable consideration.

At Longwood, on the other side of the range, there is nothing doing.

I have, &c.,

HENRY McCULLOCH,
Warden.

The Under-Secretary for Gold Fields, Wellington.

No. 19.

Mr. J. DAND, Manager Nelson Creek Water-Race to the UNDER SECRETARY for GOLD FIELDS.

SIR,—

Hatter's Terrace, 13th May, 1885.

In compliance with telegram of the 8th inst., I have the honour to forward annual report on the transactions connected with the working of the Nelson Creek Water-Race for the year ending the 31st March, 1885.

The amount received from sales of water during the year has been £990 6s. 8d., and the expenditure on maintenance £811 10s. 5d., thus leaving a balance of £178 16s. 3d. profit on the working of the race.

The average number of miners employed in working ground with water from the race during the year has been 37, and the approximate amount of gold obtained by them during that period has been 1,704ozs., representing the value of £6,517 16s. After deducting from this sum the amount paid for water it leaves £5,527 9s. 4d. as the total earnings of the miners employed, being £149 7s. 9d. each per annum.

The revenue for the year shews a considerable decrease as compared with previous years, but all things considered this is only what may be expected, and although the prospects of the race at the present time appear to be equally as good for another twelve months as the previous twelve months, still there is no great dependence to be placed upon it, as the extent of what is considered the payable run of ground is very limited, and much of it that would appear at present to be of a payable nature may turn out on trial to be valueless, although there is yet a considerable amount of ground along the line of race untried. It is situated away from any workings, or where anything payable has been got, and no one seems to be disposed to prospect it. In all probability the objection is that it would be too heavy an undertaking without any certainty of being remunerative. But it is certain that unless something new is opened up the revenue must gradually decline as each party gets worked out.

In my last report I mentioned that a party had been formed to work a gully on the opposite side of the range from Nelson Creek, known by the name of Brian Boru. I then anticipated that they would have been ready in nine months, but I find that it will take some months yet before they will have everything ready to commence sluicing. As this party will require 5 or 6 heads of continuous water it will assist the revenue materially.

This year I fully expected to have seen Perry's hydraulic system of raising stuff at work in the bed of Nelson Creek, as a party was formed for the purpose of trying how it would answer in ground that could not be worked by any of the ordinary methods; but after expending a considerable amount of money on labor and material, difficulties were met with which caused the whole affair to come to a standstill, but in all probability it will be tried again at some future time.

I have, &c.,
JAMES DAND,
Manager.

The Under Secretary for Gold Fields, Wellington.

No. 20.

Mr. J. Gow, Manager of the Waimea-Kumara Water-race and Sludge Channel to the UNDER-SECRETARY FOR GOLD FIELDS.

SIR,—

Kumara, 17th April, 1885.

I have the honour to forward my annual report and tables, showing result of working the Waimea-Kumara Water-race and Sludge Channel for the twelve months ending 31st March, 1885.

Waimea Race.—The average number of miners using water from the race for the past year was a little less than during the previous year, the difference being 142 as against 125 per month, therefore the average monthly sales of water have been slightly less, and will continue to get less every year, as odd claims get worked out. There is not any fresh ground being opened out, or likely to be to any extent, as most of the ground known to be auriferous and payable is now held by the miners at present taking water from the race. Many of the present claims will take several years to work out; there should, therefore, be very little difference in the number of miners on this field for some time. I think the miners' profits are a little smaller every year, but will compare favourably with any other old field on the Coast. The substantial and comfortable dwellings lately erected by the side of the new deviation road, near the sluicing operations, are indications of the faith the miners have in the duration of their claims, and their future prospects in the immediate vicinity.

I think I should not omit to mention here the good work done in the hour of need by the County Council in constructing the new road referred to, on a level above the tail-races, which allows the miners working "Tunnel Terrace" a free and unrestricted site for tailings of sufficient capacity to work their claims out. To have continued to use the original road so near the level of the creek bed, would have, in a very short time, rendered many of the claims unworkable. The deviation of the road not only opened an extended tailing site, but considerably shortened the majority of the tail-races, and thereby materially reduced the daily working expenses of the claims in that locality, which is the chief mining centre supplied by the race.

In my last annual report I referred to the decayed state of some of the totara flume legs near the Kawhaka Creek; I may now state for your information that a large number had to be removed during the Christmas holidays, and replaced by others of the inner heart of red pine, squared out of large trees. From my experience and knowledge of West Coast timber, I am persuaded that many of these red pine legs will last as long, if not longer, than most of the totara to be got in the district. It is not plentiful here, is all small, and, therefore, principally sapwood. As I have to procure, during this winter, a large number of legs, to be fixed in position next Christmas, I purpose trying a few miros, squared from the largest trees to be found handy to the works, and will try some plan to prevent the grubs getting into them at the surface of the ground. This kind of timber is long, straight, and plentiful in the vicinity of the flumes, and can be squared and delivered for less money than any other lengthy kinds. I find that squaring or dressing-off the outer sapwood generally adds to the durability of the various timbers in general use.

The future maintenance of so many flumes in this race will cost a considerable sum every year, but in order to effect a saving in the possible and probable expenditure on boards and battens for the maintenance of the long Kawhaka flumes, I am now constructing 83 chains of sledge track on the lower side of race from the Christchurch Road up to the first flume, by which I will be able to deliver inner heart of red pine from the mills in Kumara at a considerable saving compared with what I should have to pay for a like quantity of "silver pine" sawn at the Kawhaka Mill, where it is now getting very scarce and therefore costly.

Kumara Race.—The carrying capacity of the top, or tunnel, part of the race is equal to present requirements, which may be estimated approximately at one hundred heads daily—6,000 cubic feet per minute. The lower portion of main race, however, which supplies most of the claims on this field, is found occasionally not equal to requirement. This inadequacy is only made apparent when some changes are necessarily made in the position of a few parties in the channel shifts, or when an extra private tail-race party is unavoidably crowded into a shift not recognised as their regular one; also when a change of position of parties in the channel brings a full shift of the steady sluicers together, which always admits of the seventh party being accommodated if the water be available in the race. The seventh party in one shift in the channel is often supplied, but not as often as might be if the race would safely carry from ten to fifteen heads more. I have previously mentioned that much of this race stands on ground which has been driven out by the miners, and is therefore much cracked and broken, even to the surface. The race is therefore liable to subside and break away if filled above the regular water-line, and might thereby do much damage to claims and tail races in its vicinity before the water could be turned off. In this matter, up to the present time I have deemed it wise not to do an unsafe thing, believing that in another twelve months less water will be required at the lower end of this race, which will do away with the apparent necessity of enlarging it, at considerable cost. All the branch races, flumes, and tunnel are in good working order.

The Dams.—The dam at head of race was emptied during Christmas holidays, and carefully examined, as also the gate, outlet box, and the puddle round same. All was found in good order.

Loopline Dam.—This dam had been in use about twelve months when a large leakage suddenly showed itself coming along the west side of outlet box. The gate was promptly opened to full extent, allowing a full outlet flow of water till the dam was emptied. Since then a large excavation was made round and along the box to the dam puddle wall in centre of embankment and then repuddled along the side, and two bands of concrete, several feet apart, put completely round the box in order to make sure of it being a sound job. The dam has been filled since this work was completed, and as yet no leak has been seen. Since this dam was constructed there has seldom been more than sufficient rain at any one time to fill it, but in order to store more when it does come, and to some extent provide for such dry weather as we have had for some months past, I have erected self-acting flood-gates 15in. deep on the by-wash, by which I hope to store an additional six days' water. The dam when filled would then equal a month's supply without any rain, and as a month without rain is of rare occurrence on this coast, I hope to keep the field fully supplied with water after the dam is once filled.

Sludge Channel.—It is satisfactory to state that there is no reduction in the number of parties using the channel since last annual report. There are still the same thirty claims tailing into it, and all are being worked most energetically. There is, however, a less number of men employed by the same claims, which is brought about by odd shareholders selling to the party, in order to reduce the number of men in the claims, as it is thought in some cases that a less number will do the same amount of work. The thirty claims are now represented by 168 men instead of 181, as in previous report. The channel has been used twelve hours each day since September, 1884, divided into four shifts of three hours each, and notwithstanding the great opposition to the three-hour shifts at the time, it is now generally admitted that there are very few who wish to return to the four-hour shifts. They find that three hours water will prepare as much work as they can do for the balance of the day—five hours—or till the same shift comes on the following day. Those who hold original permits are allowed full time in the channel, while those under the new regulations average from four to five shifts each week. The days they are not actually sluicing they are, or can generally find plenty to do in, preparing for their next shift.

Paving Channel.—All the channel under very much wear is now paved with rectangular blocks of hard stone 14in. deep. This paving has now had a fair trial during the past twelve months, and has proved a great success. Most of the paving will last over twelve months, and with a little centre "patching" eighteen months. The stones are obtained from the claims all over the field, and there is now less difficulty in getting a supply since experience has taught the stone-dressers to judge at a glance of the quality and fitness of the stone for the purpose. The stones to select from are those being washed from the claims every day, which are all more or less water-worn and generally very unshapely, consequently require much labour to make them rectangular and to reduce them to the proper depth. When dressed ready for use they vary in size from 10in. x 7in. to 30in. x 15in., and sometimes larger, but these and larger are rather unwieldy on account of their weight. The kind which wears most evenly, is the hardest and most easily dressed into proper shape, but is not plentiful.

Sluicing Claims.—I think it pardonable if I again refer to the remarkably even distribution of gold over so large an area, which after having been driven out and abandoned as worked out, has, under sluicing operations, generally proved something more than payable. Out of the fifty-five sluicing claims (of from two to six acres each) opened by the use of Government water since the field was first supplied in April, 1877, only five, after being worked many months, have been abandoned as not payable, and from returns furnished me by the shareholders I find they represent the average yield of gold at about half what was necessary to make them fairly payable. Yet, strange to say, most of the ground represented within the areas last abandoned, was almost immediately applied for by one of the parties holding the adjoining ground, and in one case purchased at auction. The inference is that ground worked at a loss by one party of men can be profitably worked by another. This reduces the number of non-payable claims supplied by the Government race to a very small area indeed since sluicing commenced in the Kumara.

The Tailing Site.—The Teremakau channel is now many chains north of where it was twelve months ago, and will soon be hard up against the terrace on the north side of the stream. There does not appear to be any scour yet, even during flood. I think so far the very fine *débris* only has been removed. Since the old river bed has been so much filled up, the extension of the several channel branches is going on more rapidly.

Electric Light.—I am still of opinion that this light would be a great saving of time to the miners and money in maintenance.

Herewith please find tables showing the revenue and expenditure on account of the Waimea-Kumara Race and Sludge Channel, maintained by the Government from the 1st April, 1884, to 31st March, 1885. Also the number of men employed by the races, their average earnings (approximately) and the quantity of gold obtained by them after deducting water charges.

I have, &c.,
J. Gow,
Manager.

The Under-Secretary for Gold Fields, Wellington.

No. 21.

Mr. D. DOYLE, Manager of the Argyle Water-race, to the UNDER-SECRETARY for GOLD FIELDS.

Sir,—

Charleston, 3rd April, 1885.

I have the honour to forward report for the year ending 31st March, 1885, on the working and maintenance of Argyle Water-race.

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The receipts are not so satisfactory as I expected at beginning of year, owing chiefly to non-completion of race to Back Lead, also to the parties working along the line of race to Argyle Terrace not using water steadily and in small quantities. I may state that the portion of ground the race at present commands is getting pretty well worked out, therefore the men lose a great deal of time in shifting their working plant from place to place.

The incoming year will be able to give a fair return of revenue, as there is every prospect of the race being extended to Back Lead, Tenders having been called for the work of putting the syphon across Ballarat Creek in three contracts. In Section No. 12, one contract includes tunnelling, another contract for erecting staging, and clearing to carry piping. Those closed on the 2nd of April. The third includes the supplying and building of piping, to carry water through. Tenders for the last contract close on the 29th of April. The length of this piping will be 1,900 and odd feet, and the diameter 15·91 inches. After this is completed there will be a distance of 82 chains of ditching and fluming to finish to Black Lead, which will cost about £600. The whole works will then be completed to the fall into Nile River. This portion of 82 chains commands all the auriferous ground as far as Nile River, and the only ground likely to pay for some years to come. If this portion is not completed soon, there will be very little revenue from sales of water after paying expenses.

The old piping across Ballarat Creek has given a great deal of trouble this year. It is continually breaking away from old age, in fact everything connected with it is getting rotten and will not be much longer fit for use. The expenses for keeping this piping in repair has been one of the heaviest items of maintenance this year, as a great quantity of canvas and marline cord had to be used for making joints, also new piping had to be put in where old ones bursted.

Another heavy portion of expenditure was the keeping of outside supply races in repair, and keeping a supply of sawn timber always on hand, so as to be ready to make good any break which might occur. As those races are the principal feeders to Argyle Reservoir it would not do to neglect them. By so doing the supply of water in reservoir would be diminished greatly.

In the latter part of February I had a heavy break in one of the old flumes, by it falling down with old age and rottenness. This caused a further expenditure, as a new race had to be constructed 14 chains long, to connect with new works already completed higher up the gully. This was the only way to supply the party working on Candlelight Flat with water.

The main race from reservoir has cost but very little to keep it in repair this year, as any repairs which were needed were done by myself and water man (or boy), so that actual expenses were kept down as much as possible. After all the works are completed the cost of keeping race in working order will be very low for some time to come.

In January of present year the County Chairman—Buller County—let a contract for sinking a trial shaft at Ballarat Creek, so as to test the formation of sandstone reef underlying the bed of the creek to see if it would be of sufficient hardness to drive a tunnel under the creek bed at a depth of 60ft., but was not successful, as the deeper the shaft went down it got looser in the strata, which proved an underground syphon could not be attempted, although a private party (Butterworth) had been very successful with two underground syphons. Had this answered the purpose there would have been saving over iron piping by about £600.

I have made out plans and the specifications for the whole of the work now called for, on section No. 12, mentioned in first part of report, for Argyle Water-race Extension to Back Lead, which will not be finished before August next, and by that time I hope to see the whole works completed, so that there may be a revenue return from it.

Herewith please find statement showing the Revenue from sales of water during the year ending 31st of March, 1885; and also the expenditure from the 1st of April, 1884, to the 31st of March, 1885; also number of men employed by the race, their average earnings after deducting working expenses.

I have, &c.,

DENIS DOYLE,

Manager, Argyle Water-Race.

The Under-Secretary, Gold Fields Department.

No. 22.

The CHAIRMAN, Mount Ida Water-race Trust, to the Hon. the MINISTER for PUBLIC WORKS.

SIR,—

Office of Mount Ida Water-race Trust, Naseby, 16th May, 1885.

I have the honour to forward the annual report of the proceedings of the Mount Ida Water-race Trust in accordance with section 25 of "The Mount Ida Water-race Trust Act, 1878," together with the audited statement of receipts and expenditure for the twelve months ending 31st December, 1884.

The income for the year ending the period above stated amounted to £1,221 14s. 10d., a decrease, compared with last year, of £223 11s. 1d. This is attributable to the cause reported last year, viz.: The ground which the race commands in the main gully being gradually worked out. The expenditure for the same period for maintenance and repairing flood damages amounted to £1,599 4s. 7d., being a reduction compared with last year, of £277 19s. 7d. Included in the above total is the sum of £98, cost of construction of a new dam in connection with the old distributing races.

The outstanding accounts for water supplied to same date amounted to £847 2s. 2d., as against £1,280 5s. 7d. for last year.

The extension to Spec Gully is nearly completed. Up to 30th April, 4 miles 10 chains of main top level race had been constructed. At the one-mile peg a flume 5 chains in length, by an average height of 10ft., conveying the water across Main Gully, has been constructed at a cost of £132 16s. 6d.; and at the $\frac{2}{3}$ peg a short tunnel and cutting of 5 chains enabled the engineer (Mr. R. H. Browne) to shorten the distance of the race, and to take advantage of a good site for a reservoir at

the 1990s, the number of people in the world who are illiterate has increased from 1.2 billion to 1.5 billion. The number of illiterate people in the world is expected to reach 1.7 billion by the year 2015. The number of illiterate people in the world is expected to reach 1.7 billion by the year 2015.

Condition	Control (%)	MCI (%)	AD (%)
A	~85	~75	~65
B	~80	~70	~60
C	~75	~65	~55
D	~85	~80	~75

No. 1.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several DISTRICTS, and the GOLD DUTY of the COLONY of NEW ZEALAND, for the Period from the 1st January to the 27th December, 1884.

District.	Miners' Rights.	Business Licenses.	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 ..	133 0 0	..	..	363 0 0	1 7 9	106 11 0	12 15 0	616 13 9
Thames ..	575 0 0	..	..	2,332 15 0	24 14 6	38 0 9	144 6 0	3,114 16 3
Te Aroha ..	125 0 0	15 0 0	5 0 0	1,727 0 0	27 5 0	17 13 0	20 4 0	1,937 2 0
Totals ..	833 0 0	15 0 0	5 0 0	4,422 15 0	53 7 3	162 4 9	177 5 0	5,668 12 0
NELSON.								
Collingwood ..	77 18 0	..	4 5 0	41 19 0	10 9 0	1 19 6	..	136 10 6
Westport and Charleston ..	452 9 6	6 0 0	29 7 6	596 18 4	21 12 0	11 19 0	12 0 0	1,130 6 4
Ahaura ..	432 2 6	41 0 0	16 15 0	226 0 0	23 4 0	12 16 6	1 9 0	758 7 0
Reefton ..	544 2 0	205 15 0	16 10 0	953 2 6	20 12 0	26 16 0	4 0 0	1,770 17 6
Wanganeka ..	33 0 0	..	..	..	0 2 0	..	..	33 2 0
West Wanganui ..	4 0 0	4 19 6	..	82 11 6	0 8 0	..	..	91 19 0
Lycell ..	166 19 6	5 0 0	10 0 0	169 6 6	6 4 6	4 13 6	4 0 6	366 4 6
Notown ..	115 0 0	5 0 0	8 12 6	10 2 6	5 16 0	5 19 0	..	150 10 0
Totals ..	1,825 11 6	267 14 6	85 10 0	2,080 0 4	93 7 6	64 3 6	21 9 6	4,437 16 10
WELLINGTON.								
Wellington ..	..	..	..	..	..	..	4 0 0	4 0 0
MARLBOROUGH.								
Havelock ..	75 18 0	10 0 0	3 5 0	80 16 0	3 7 6	8 17 6	..	182 4 0
CANTERBURY.								
Christchurch ..	..	..	..	..	..	..	19 0 0	19 0 0
WESTLAND.								
Hokitika ..	215 0 0	18 0 0	3 17 6	..	1 18 0	2 14 0	1 8 0	242 17 6
Kanieri ..	246 1 0	79 0 0	12 2 6	13 0 0	15 3 0	2 15 0	4 17 0	372 18 6
Greymouth ..	438 0 0	24 0 0	27 1 6	78 3 8	14 10 0	18 12 0	0 10 0	601 2 2
Ross ..	196 0 0	25 0 0	16 15 0	433 1 2	10 10 0	6 1 0	23 13 6	716 0 8
Stafford ..	185 14 0	..	13 10 0	5 5 0	13 16 0	11 18 0	2 4 0	232 7 0
Okarito ..	48 0 0	20 0 0	4 2 6	..	2 2 0	0 15 0	1 8 0	76 7 6
Greenstone ..	172 10 0	3 0 0	5 2 6	..	7 17 0	8 6 0	0 2 0	196 17 6
Maori Gully ..	82 0 0	..	6 7 6	5 0 0	3 12 0	1 2 0	..	98 1 6
Clifton ..	202 4 0	..	14 15 0	6 5 0	8 9 6	1 16 0	0 1 0	233 10 6
Kumara ..	394 0 0	70 0 0	1 17 6	15 3 0	9 14 0	17 15 0	0 13 0	509 2 6
Jackson's Bay ..	22 0 0	..	0 15 0	..	0 12 0	..	..	23 7 0
Goldsborough ..	192 2 0	..	24 5 0	..	18 19 0	2 12 0	4 3 0	242 1 0
Totals ..	2,393 11 0	239 0 0	130 11 6	561 2 10	107 2 6	74 6 0	33 19 6	3,544 13 4
OTAGO.								
Dunedin ..	34 0 0	5 0 0	4 0 0	44 13 4	1 16 0	1 7 0	2 0 0	92 16 4
Naseby ..	554 2 0	21 0 0	43 10 0	496 16 8	17 7 0	18 9 6	4 0 0	1,135 5 2
Black's and St. Bathans ..	146 0 0	20 0 0	16 16 8	49 14 2	5 14 0	0 8 0	..	238 12 10
Manuherikia ..	163 0 0	5 0 0	6 12 6	136 11 8	6 17 0	0 12 6	0 10 0	319 3 8
Clyde ..	47 0 0	5 0 0	4 15 0	45 2 0	2 0 0	0 11 0	..	104 8 0
Mount Benger ..	157 0 0	..	6 17 6	0 15 0	2 4 0	4 2 0	..	170 18 6
Cromwell ..	444 0 0	49 0 0	19 12 6	56 15 0	15 9 0	24 13 0	4 1 0	613 10 6
Queenstown ..	270 1 0	13 0 0	12 5 0	219 1 8	11 12 0	2 19 0	1 11 0	535 9 8
Arrowtown ..	212 0 0	..	14 15 0	122 3 4	8 0 0	3 7 0	1 0 0	361 5 4
Lawrence ..	478 0 0	28 0 0	11 16 6	178 15 0	9 10 0	34 18 0	0 2 3	741 1 9
Switzer's ..	176 14 0	10 0 0	10 2 6	..	3 0 0	3 6 0	0 0 6	203 3 0
Orepuki ..	236 0 0	19 0 0	9 17 6	15 11 0	2 14 0	10 7 0	..	293 9 6
Totals ..	2,897 17 0	180 0 0	161 0 8	1,365 18 10	86 3 0	105 0 0	13 4 9	4,809 4 3

Gold duty received during the year in the under-mentioned provincial districts:—

	£	s.	d.		£	s.	d.
Auckland ..	3,608	15	3	Canterbury ..	2	8	2
Wellington ..	10	1	7	Westland ..	7,036	0	10
Nelson ..	4,254	14	6	Otago ..	7,880	6	6
Marlborough ..	107	19	5				

J. C. GAVIN, Receiver-General.

No. 2.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several DISTRICTS, and the GOLD DUTY of the COLONY of NEW ZEALAND, for the Period from 1st January to 31st March, 1885.

District.	Miners' Rights.	Business Licenses.	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 ..	8 0 0	..	..	121 0 0	0 15 0	..	..	129 15 0
Te Aroha ..	9 0 0	..	..	307 0 0	2 15 0	0 19 0	6 14 0	326 8 0
Thames..	52 0 0	5 0 0	..	492 18 6	8 13 6	2 9 0	22 3 0	583 4 0
Totals ..	69 0 0	5 0 0	..	920 18 6	12 3 6	3 8 0	28 17 0	1,039 7 0
NELSON.								
Collingwood ..	30 19 0	..	1 5 0	..	2 8 6	0 4 0	..	34 16 6
Westport and Charleston	118 0 0	5 0 0	8 5 0	187 0 0	9 2 0	13 18 0	3 19 0	345 4 0
Ahaura ..	110 19 6	27 0 0	4 2 6	43 0 0	6 17 6	1 5 0	..	193 4 6
Reefton..	234 2 0	30 10 0	4 15 0	325 16 8	2 19 0	5 4 4	2 0 0	605 7 0
Wangapeka ..	..	..	0 2 6	..	0 1 0	..	..	0 3 6
West Wanganui ..	1 0 0	..	..	13 8 6	0 1 6	0 3 6	..	14 13 6
Lyell & Murchison	47 17 6	3 0 0	3 5 0	44 10 0	0 7 6	2 19 0	1 3 0	103 2 0
Notown ..	27 0 0	..	2 2 6	5 0 0	1 10 0	..	..	35 12 6
Totals ..	569 18 0	65 10 0	23 17 6	618 15 2	23 7 0	23 13 10	7 2 0	1,332 3 6
MARLBOROUGH.								
Havelock ..	25 19 0	9 19 6	0 12 6	2 10 0	0 18 6	..	..	39 19 6
CANTERBURY.								
Christchurch ..	..	..	..	90 15 0	..	..	7 0 0	97 15 0
WESTLAND.								
Hokitika ..	33 0 0	..	1 2 6	..	1 0 0	1 19 0	0 9 0	37 10 6
Kanieri ..	74 0 0	10 0 0	3 17 6	10 0 0	4 17 0	0 8 0	1 11 0	104 13 6
Greymouth ..	126 0 0	13 0 0	5 7 6	11 10 0	4 1 6	5 14 0	..	165 13 0
Ross ..	37 0 0	3 0 0	3 5 0	137 0 0	2 15 0	..	0 19 6	183 19 6
Stafford..	40 0 0	..	2 10 0	..	2 19 0	0 14 0	..	46 3 0
Okarito ..	12 0 0	10 0 0	1 2 6	..	0 5 0	0 6 0	0 9 0	24 2 6
Greenstone ..	44 0 0	3 0 0	1 0 0	5 11 3	1 18 0	..	..	55 9 3
Maori Gully ..	23 0 0	..	0 5 0	..	0 12 0	..	..	23 17 0
Clifton ..	60 0 0	..	3 7 6	4 5 0	1 9 0	1 4 0	0 2 6	70 8 0
Kumara ..	110 0 0	16 0 0	0 5 0	20 0 0	3 7 0	1 13 0	0 10 0	151 15 0
Jackson's Bay ..	6 0 0	..	..	..	..	..	..	6 0 0
Goldsborough ..	52 0 0	..	6 7 6	..	4 13 0	0 16 0	..	63 16 6
Totals ..	617 0 0	55 0 0	28 10 0	188 6 3	27 16 6	12 14 0	4 1 0	933 7 9
OTAGO.								
Dunedin ..	9 0 0	10 0 0	3 7 6	..	0 1 0	..	..	22 8 6
Naseby ..	121 0 0	5 0 0	8 17 6	201 19 0	4 5 0	3 5 0	0 10 0	344 16 6
Black's and St. Bathans	55 0 0	5 0 0	1 5 0	19 11 8	1 15 0	2 4 0	..	84 15 8
Manuherikia ..	16 0 0	..	1 10 0	24 15 0	0 5 0	0 18 0	..	43 8 0
Clyde ..	5 0 0	..	0 2 6	9 4 6	0 3 0	..	..	14 10 0
Mount Benger ..	34 0 0	..	2 7 6	0 5 0	1 4 0	0 11 0	..	38 7 6
Cromwell ..	79 0 0	..	3 17 6	34 10 0	5 18 0	2 17 6	0 10 0	126 13 0
Queenstown ..	47 1 0	5 0 0	4 2 6	99 0 0	0 18 0	9 12 0	..	165 13 6
Arrowtown ..	60 0 0	..	3 0 0	37 18 4	1 6 0	4 1 0	..	106 5 4
Lawrence ..	97 0 0	..	3 0 0	22 11 5	5 2 0	1 16 0	0 1 0	129 10 5
Switzer's ..	47 17 6	3 0 0	1 8 0	..	1 14 0	3 17 0	..	57 16 6
Orepuki..	33 0 0	5 0 0	2 2 6	14 10 0	0 2 0	0 9 0	..	55 3 6
Totals ..	603 18 6	33 0 0	35 0 6	464 4 11	22 13 0	29 10 6	1 1 0	1,189 8 5

Gold duty received during the quarter in the under-mentioned provincial districts:—

	£ s. d.		£ s. d.
Auckland ..	683 18 2	Westland ..	1,983 15 0
Nelson ..	1,266 1 11	Otago ..	2,458 10 8

J. C. GAVIN, Receiver-General.

No. 3.

COMPARATIVE RETURN of REVENUE derived from the GOLDFIELDS in the several DISTRICTS of NEW ZEALAND during the Years 1883 and 1884, showing INCREASE or DECREASE under each Head of Revenue.

District.	Miners' Rights.	Business Licenses.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Gold Duty.	Total.
AUCKLAND—	£	£	£	£	£	£	£	£	£
Year 1883 ..	776	5	..	6,387	137	82	5,714	4,129	17,230
Year 1884 ..	833	15	5	4,422	53	162	177	3,608	9,275
Increase ..	57	10	5	..	..	80	..	..	..
Decrease ..	..	..	..	1,965	84	..	5,537	..	*7,955

* Net.

No. 3—continued.

COMPARATIVE RETURN of REVENUE derived from the GOLDFIELDS—continued.

District.	Miners' Rights.	Business Licenses.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Gold Duty.	Total.
WELLINGTON—	£	£	£	£	£	£	£	£	£
Year 1883 .. ..	..	..	..	..	..	..	..	..	..
Year 1884 .. ..	..	..	..	..	..	..	4	10	14
Increase .. ..	..	..	..	..	..	..	4	..	*14
Decrease .. ..	..	..	..	..	..	..	..	..	..
NELSON—									
Year 1883	1,728	443	93	2,583	116	110	21	3,931	9,025
Year 1884	1,825	267	85	2,080	93	64	21	4,254	8,639
Increase	97	..	..	..	..	..	..	..	..
Decrease .. ..	..	176	8	503	23	46	..	..	*336
MARLBOROUGH—									
Year 1883	130	26	3	316	7	10	..	63	555
Year 1884	75	10	3	80	3	8	..	107	286
Increase .. ..	..	..	..	..	..	..	..	..	..
Decrease	55	16	..	236	4	2	..	..	*269
CANTERBURY—									
Year 1883 .. ..	..	..	..	76	..	..	..	2	76
Year 1884 .. ..	..	..	..	..	..	..	19	..	21
Increase .. ..	..	..	..	..	..	..	19	..	..
Decrease .. ..	..	..	..	76	..	..	..	..	*55
WESTLAND—									
Year 1883	2,799	307	133	542	114	119	42	8,060	12,116
Year 1884	2,393	239	130	561	107	74	38	7,036	10,576
Increase .. ..	..	..	..	19	..	..	..	..	..
Decrease	406	68	3	..	7	45	4	..	*1,538
OTAGO—									
Year 1883	2,860	263	158	1,322	86	151	5	8,746	13,591
Year 1884	2,897	180	161	1,365	86	105	13	7,880	12,687
Increase	37	..	3	43	..	..	8	..	..
Decrease .. ..	..	83	..	..	..	46	..	..	*904

* Net.

J. C. GAVIN,
Receiver-General.

No. 4.

COMPARATIVE RETURN of the TOTAL AMOUNTS of GOLDFIELDS REVENUE (exclusive of Gold Duty) collected in the several Districts during the Years 1883 and 1884, and the Quarters ending 31st March, 1884 and 1885, showing the INCREASE or DECREASE in respect of each District.

District.	Years 1883 and 1884.				Quarter from 1st January to 31st March.			
	1883.	1884.	Increase.	Decrease.	1884.	1885.	Increase.	Decrease.
AUCKLAND.	£	£	£	£	£	£	£	£
Coromandel	701	616	..	85	287	129	..	158
Te Aroha	3,431	1,937	..	1,494	599	326	..	273
Thames	8,970	3,114	..	5,856	1,199	583	..	616
NELSON.								
Collingwood	163	136	..	27	34	34	..	..
Westport and Charleston	1,065	1,130	65	..	391	345	..	46
Ahaura	651	758	107	..	200	193	..	7
Reefton	2,355	1,770	..	585	409	605	196	..
Wangapeka	27	33	6	..	12	..	..	12
West Wanganui	71	91	20	..	25	14	..	11
Lyell	541	366	..	175	143	103	..	40
Notown	219	150	..	69	34	35	1	..
MARLBOROUGH.								
Havelock	493	182	..	311	76	39	..	37
WESTLAND.								
Hokitika	186	242	56	..	77	37	..	40
Kanieri	558	372	..	186	65	104	39	..
Greymouth	746	601	..	145	201	165	..	36
Ross	654	716	62	..	169	183	14	..
Stafford	257	232	..	25	75	46	..	29
Okarito	77	76	..	1	18	24	6	..
Greenstone	218	196	..	22	53	55	2	..
Maori Gully	115	98	..	17	22	23	1	..
Clifton	301	233	..	68	55	70	15	..
Kumara	624	509	..	115	140	151	11	..
Jackson's Bay	24	23	..	1	2	6	4	..
Goldsborough	293	242	..	51	88	63	..	25

No. 4—continued.

COMPARATIVE RETURN of the TOTAL AMOUNTS of GOLDFIELDS REVENUE—continued.

District.	Years 1883 and 1884.				Quarter from 1st January to 31st March.			
	1883.	1884.	Increase.	Decrease.	1884.	1885.	Increase.	Decrease.
OTAGO.	£	£	£	£	£	£	£	£
Dunedin	65	92	27	..	23	22	..	1
Naseby	967	1,135	168	..	356	344	..	12
Black's and St. Bathans	297	238	..	59	103	84	..	19
Manuherikia	183	319	136	..	49	43	..	6
Clyde	89	104	15	..	47	14	..	33
Mount Benger	164	170	6	..	33	38	5	..
Cromwell	566	613	47	..	116	126	10	..
Queenstown	545	535	..	10	89	165	76	..
Arrowtown	522	361	..	161	105	106	1	..
Lawrence	821	741	..	80	184	129	..	55
Switzer's	171	203	32	..	47	57	10	..
Orepuki	452	293	..	159	63	55	..	8
WELLINGTON.								
Wellington .. .. .	..	4	4	..	..	..	..	..
CANTERBURY.								
Christchurch	76	19	..	57	10	97	87	..
Totals	27,658	18,650	751	9,759	5,599	4,613	478	1,464
Total Increase .. .. .	..	..	..	751	..	..	..	478
Net Decrease .. .. .	..	..	..	9,008	..	..	..	986

J. C. GAVIN,
Receiver-General.

No. 5.

SUMMARY of the QUANTITY and VALUE of GOLD ENTERED for DUTY for EXPORTATION from NEW ZEALAND, from 1st April, 1857, to 31st December, 1884.

Product of the Goldfields in the District of	Entered for Duty at the Port of	During the Year ended 31st December, 1884.		Entered for Exportation to the 31st December, 1883.		Total entered for Exporta- tion from New Zealand to the 31st December, 1884.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Auckland	Auckland	Oz. 36,087	£ 143,564	Oz. 1,401,690	£ 5,180,282	Oz. 1,437,777	£ 5,323,846
Wellington	Wellington	101	380	40	157	141	537
Marlborough	Picton	1,046	4,184	51,756	199,835	52,835	204,141
	Nelson	33	122				
Nelson	Nelson	1,079	4,306	1,634,615	6,488,189	1,636,774	6,496,191
		2,159	8,002				
West Coast	Nelson	1,385	5,318	2,941,753	11,672,023	3,053,439	12,118,540
	Westport	9,235	37,062				
	Greymouth	69,938	279,750				
	Hokitika	30,987	123,949				
	Wellington	104	410				
Canterbury	Dunedin	7	28	24	96
	Dunedin	111,686	446,517				
Otago	Dunedin	24	96	4,292,479	16,917,009	4,371,289	17,235,941
	Invercargill	71,187	288,626				
	Riverton	7,379	29,342				
	Oamaru	229	905				
	Picton	1	3				
	Wellington	12	48				
Totals	Totals	2	8	10,322,338	40,457,495	10,552,279	41,379,292
		73,810	318,932				
Totals		229,946	921,797	Totals		10,322,338	40,457,495
Totals		10,322,338	40,457,495	Totals		10,552,279	41,379,292

Department of Trade and Customs,
Wellington, 3rd June, 1885.

H. S. McKELLAR,
(for Secretary.)

No. 6.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY for EXPORTATION from NEW ZEALAND, from 1st April, 1857, to 31st March, 1885.

Entered for Duty at	Produce of the Gold Fields in	During the Quarter ended 31st March, 1885.		Entered for Exportation to the 31st December, 1884.		Total entered for Exportation from New Zealand to the 31st March, 1885.	
		Quantity.	Value.	Quantity	Value.	Quantity.	Value.
Auckland	Auckland	Oz. 6,839	£ 26,441	Oz. 1,437,777	£ 5,323,846	Oz. 1,444,616	£ 5,350,287
Wellington	Wellington .. ..	.. ..	.. ..	141	537	141	537
Pictou	Marlborough .. ..	.. ..	.. ..	52,835	204,141	52,835	204,141
Nelson	Nelson	1,012	3,735	1,636,774	6,496,191	1,637,786	6,499,926
Nelson	West Coast	553	2,172	3,053,439	12,118,540	3,084,926	12,244,427
Westport		3,946	15,785				
Greymouth		18,494	73,975				
Hokitika		8,489	33,955				
		31,487	125,887				
Dunedin	Canterbury .. ..	.. ..	.. ..	24	96	24	96
Dunedin	Otago ..	22,243	90,025	4,371,289	17,235,941	4,395,863	17,335,093
Invercargill		2,290	8,939				
Riverton		46	188				
		24,579	99,152				
Totals		63,917	255,215	10,552,279	41,379,292	10,616,196	41,634,507

Department of Trade and Customs,
Wellington, 20th April, 1885.

WILLIAM SEED,
Secretary and Inspector.

No. 7.

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, 1885.

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.
AUCKLAND—North Hauraki	£ s. d. 2 10 0 to 3 1 6	8s. to 14s.	..	..
South Hauraki	2 12 6 to 3 2 6	8s. 6d. to 10s. 6d.	£3	40in. by lin.
Te Aroha	2 16 0 to 3 5 0	10s.	..	"
MARLBOROUGH—Pelorus and Wairau ..	3 13 0	..	£1	2in. by 20in.
NELSON—Wangapeka	3 12 0 to 3 15 0	..	..	..
Charleston	3 17 0	..	£2 5s. to £2 15s.	40in.
Inangahua	3 15 0 to 3 18 9	10s. to 15s.	..	..
Collingwood	3 13 6	..	..	..
Westport	3 15 0† 3 17 0†	12s. 6d.	£2	40in.
Lyell	3 14 0 to 3 17 0	£1	10s.	40in.
WESTLAND—Hokitika and Kanieri	3 16 6	£2	£3 to £4	40in.
Waimea				
Totara				
No Town, Arnold, and Dun- ganville	3 16 0	..	15s.	66 cub. in.
Greymouth	3 16 0	..	£1	66 cub. in.
Greenstone	3 16 6	..	£3	40in.
Kumara	3 16 6	..	£3 to £4	40in.
Okarito and Jackson's Bay	3 15 6 to 3 16 0	..	..	..
OTAGO—Hindon	3 15 0	12s. 6d.	..	..
Tuapeka	3 15 0	..	£2 10s. to £3	100in.
Dunstan	3 15 0	12s. to £1	£1 to £3 10s.	60in.
Longwood	3 17 6	..	£1	8in. by lin.
Orepuki	3 17 6	..	15s.	40in. by lin.
Arrow (Wakatipu Goldfield) and Queenstown	3 14 6	12s. to 15s.	£1	40in. by 2in.
Mount Ida	3 15 0	..	£1 to £1 10s.	16in. by lin.
Macrae's, Hyde	3 15 0	..	£1 13s.	..
Hamilton, Serpentine				
Maerewhenua				

* In addition to a charge of 5s. per day for each berdan used in putting tailings through.

† Alluvial.

‡ Melted.

No. 8.

COMPARATIVE RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY for EXPORTATION from NEW ZEALAND for the QUARTERS ended 31st March, 1885, and 31st March, 1884.

District of	Quarter ended 31st March, 1885.		Quarter ended 31st March, 1884.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Auckland	6,839	26,441	6,752	26,788
Wellington .. .. .	..	..	101	380
Nelson	1,012	3,735	902	3,338
West Coast	31,487	125,887	27,461	109,762
Otago	24,579	99,152	27,065	109,311
Totals	63,917	255,215	62,281	249,579

Department of Trade and Customs,
Wellington, 20th April, 1885.

WILLIAM SEED,
Secretary and Inspector.

No. 9.

NUMBER of MINERS EMPLOYED during the Year ending 31st March, 1885.

Mining District.	Alluvial Miners.		Quartz-miners.		Totals.		Grand Totals.
	European.	Chinese.	European.	Chinese.	European.	Chinese.	
AUCKLAND—							
North Hauraki.. .. .	..	..	140	..	140	..	140
South Hauraki.. .. .	..	..	900	..	900	..	900
Te Aroha .. .. .	..	..	105	..	105	..	105
MARLBOROUGH—							
Pelorus	200	..	8	..	208	..	208
Wairau and Queen Charlotte Sound	50	..	2	..	52	..	52
NELSON—							
Wangapeka	25	..	..	..	25	..	25
Collingwood, Takaka, and West Wanganui	114	..	32	..	146	..	146
Inangahua	100	250	360	..	460	250	710
Ahaura	290	210	..	..	290	210	500
Charleston	220	..	..	..	220	..	220
Westport, including Addison's, Northern Terraces, Waimangaroa, North Beach, Mokihinui, Karamea, and Lower Buller Valley	179	..	63	..	242	..	242
Lyell	70	20	100	..	170	20	190
Murchison	120	10	20	..	140	10	150
WESTLAND—							
Waimea and Stafford	380	240	..	..	380	240	620
Totara	329	95	20	..	349	95	444
Hokitika and Kanieri	735	119	..	..	735	119	854
Kumara	400	20	..	..	400	20	420
Greymouth	300	280	..	..	300	280	580
Arnold	470	255	..	..	470	255	725
Greenstone	150	50	..	..	150	50	200
Okarito	52	..	..	..	52	..	52
Jackson's Bay	54	..	..	..	54	..	54
OTAGO—							
Hindon	30	4	7	..	37	4	41
Tuapeka	420	360	20	..	440	360	800
Clyde	40	20	..	..	40	20	60
Cromwell	313	129	25	..	338	129	467
Alexandra	150	130	30	..	180	130	310
Roxburgh	140	120	7	..	147	120	267
Black's	150	50	..	..	150	50	200
Waikaia, Upper Waikaia, Nokomai, Waikaka, and Waikawa	100	250	..	..	100	250	350
Orepuki and Longwood	130	300	..	..	130	300	430
Wakatipu Goldfield — Arrow, Macetown, Cardrona, Kawarau, Bracken's, and Motatapu	100	95	60	..	160	95	255
Naseby	171	100	120	..	291	100	391
Queenstown	165	95	..	..	165	95	260
Kyeburn and Clarke's	45	100	..	..	45	100	145
Hamilton, Sowburn, &c.	55	15	..	..	55	15	70
Hyde and Fullerton's	40	7	..	..	40	7	47
Serpentine	55	85	..	..	55	85	140
Macrae's, Strath-Taieri, and Shag Valley	15	10	30	..	45	10	55
Maerewhenua	40	4	..	..	40	4	44
St. Bathans and Ida Valley	135	20	10	..	145	20	165
SUMMARY.							
AUCKLAND .. .. .	..	..	1,145	..	1,145	..	1,145
MARLBOROUGH	250	..	10	..	260	..	260
NELSON	1,118	490	575	..	1,695	490	2,183
WESTLAND	2,870	1,059	20	..	2,890	1,059	3,949
OTAGO	2,294	1,894	309	..	2,603	1,894	4,497
Totals	6,532	3,443	2,059	..	8,591	3,443	12,034

RETURN showing the AVERAGE PRICES of PROVISIONS and LIVE STOCK for the Year ending 31st March, 1885.

Mining District.	Beer.	Brandy.	Bread— Wheaten.	Butter— Fresh.	Butter— Salt.	Cheese.	Coffee.	Flour.	Grain— Wheat.	LIVE STOCK.						MEAT.				Sugar.	Tea.	Tobacco.	Wine.	
										Cattle— Horned.	Goats.	Horses.	Sheep.	Swine.	Beef.	Mutton.	Pork.	Milk.	Rice.					Salt.
Per. bhd.	Per gall.	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.	Per 100lb.	Per Im. bushel.	Per head.	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.	
AUCKLAND—																								
North Hauraki ..	140/	30/	d.	1/6	1/3	1/	1/	18/	5-15	10/-20/	5-50	10/-20/	30/-60/	d.	6	d.	d.	d.	d.	d.	6	3/	7/	30/
South Hauraki ..	88/-100/	24/	2	1/6	1/	8-1/	1/9	16/	5-10	8/-15/	5-20	8/-15/	15/-60/	4	4	2	4	3	1 1/2	2/-3/	6/	6/	16/-30/	
Te Aroha ..	100/	25/	2 1/2	1/6	1/2	10/	1/9	15/	3/6-5/6	4/10-10	5/	3-40	15/-35/	1	4	1	4	3	1	4	4	2/	6/	16/-40/
MARLBOROUGH—																								
Queen Charlotte Sound	4	1/3	1/3	1/2	2/	18/	6-8	10/	6	6	6	6	6	6	7	7	3/6	7/	..
Pelorus ..	150/	..	4	1/	1/	1/	2/	18/	6-8	10/	..	..	..	5	4	6	6	6	6	7	3/	8/	..
Wairau ..	..	..	4	1/	1/	1/	2/	16/	6-8	..	..	..	..	6	6	6	6	6	6	7	3/6	7/	..
Nelson—																								
Wangapeka ..	120/	25/	2	1/	9/	8/	1/9	14/	1-5	7/-13/	5-30	10/-13/	10/-50/	3	3	3	4	2	5	1 1/2	5	2/6	6/	..
Collingwood ..	100/	33/	5	1/	7/	8/	2/	15/	3-7	8/	5-15	8/	15/	5	4	4	4	6	1	5 1/2	3/4	7/	20/	
Inangahua ..	130/	25/	2 1/2	1/9	1/3	1/	2/	20/	6-9	20/	10-35	20/	3/-4/	8	7	10	6	5	3	6	3/6	6/	20/	
Lyell and Murchison ..	150/	28/	3	1/6	1/6	1/	2/	24/	8	40/	15	16/	80/	6	6	8	6	6	4	7	3/	7/	20/	
Westport ..	123/	23/	2	1/6	1/3	10/	1/9	13/-20/	11	15/	25	15/	50/	7	7	7	6	4	2	6	3/6	6/6	20/	
Charleston ..	130/	26/	1 1/2	1/6	1/3	10/	2/	16/	9	20/	15-30	16/	30/	6	5	8	6	5	2	5	3/6	7/	16/	
Ahaura ..	150/	25/	2 1/2	1/6	1/3-2/	10-1/6	1/9	17/	5-12	10/	5-60	17/	45/	6	6	8	8	4	2	6	3/	6/	15/	
WESTLAND—																								
Waimea ..	..	..	9	1/6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totara ..	110/	26/	2	2/	1/6	2/	2/	13/	15	10/	20	13/	60/	7	5	8	5	4	2	5	3/	7/	16/	
Hokitika and Kanieri ..	100/	25/	2	2/	1/6	2/	2/	15/-20/	10	15/	15-25	15/-20/	40/-60/	6	6	6	6	6	2	6	3/	6/-7/	24/	
Okarito ..	..	..	..	2/	1/6	1/3	1/10	18/-25/	..	..	..	..	..	6	6	1/	6	4	2	6 1/2	3/	6/-7/	..
Kumara ..	120/	23/6	2	2/	1/6	1/3	1/9	20/	7/	30/-40/	15-40	15/-20/	80/-120/	6	6	10	6	4	3	6	3/	6/-8/	..	
Greymouth ..	120/	24/	2	1/6-2/6	1/3-2/	1/-1/6	1/9	16/-18/	8-12	10/-15	20-80	17/	60/-120/	8	6	8	6	3	2	6	3/6	6/	12/-50/	
Arnold ..	120/	23/	2 1/2	1/6-2/6	1/3-2/	10-1/6	1/9	21/	6/6	7-11	20/	10-30	17/	55/-60/	5	5	7	6	4	2	6	6/	18/	
Jackson's Bay ..	..	..	..	1/	1/6	1/	1/10	16/-22/	..	..	..	..	..	4	4	6	6	6	2	6	2/6-3/	6/-7/	..
OTAGO—																								
Hindon ..	100/	25/	2	1/3	1/3	10/	1/9	15/	3-5/10	3-5/10	8-40	9/	10/-9/	5	4	6	..	3	2	6	3/	6/6	16/-30/	
Tuapeka ..	80/-110/	24/-26/	1 1/2	1/10	9/	8/	1/6	9/	3/-3/3	..	7-25	4/6-12/	..	3-6	5	6	4	3	1	4	1/6-3/	5/-7/6	..	
Cromwell ..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	5	8	6	5	3	5	3/	6/-8/	22/
Clyde ..	120/	30/	2 1/2	1/6	1/6	10/	2/	16/	1-10	..	4-40	4/-25/	40/	6	5	8	6	6	3	5	3/	..	..
Alexandra ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Black's ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Roxburgh ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Queenstown ..	110/	28/	2	1/6	1/3	9/	2/	10/-12/	5-10	5/-20/	5-30	5/-15/	20/-100/	7	6	8	6	3	2	5-6	2/6-3/6	7/	16/-30/	
Orepuki, Longwood ..	80/	26/	1 1/2	1/9	8/	7/	1/9	10/	3-4	..	8-20	15/	15/-40/	4	3 1/2	4 1/2	4	3	1	4	2/6	5/6	20/	
Arrow (Wakatipu Gold- field) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Ida ..	80/-120/	27/	2	1/3	1/	11/	2/	14/	3-9	15/	10-35	10/	20/-80/	6	3 1/2	8 1/2	4	5	2	5 1/2	3/	7/	16/	
Maerewhenua ..	100/	26/	1 1/2	1/9	9/	8/	1/10	12/6	3/	4	10-45	7/6	30/	5	4	7	4	4 1/2	2	5	2/9	6/	16/	
Waikata ..	200/	31/	..	1/	10/	10/	2/	12/6	3/2	5	13	10/	60/	5	4	6	4	4	2	5	3/	6/	20/	

No. 11.

TABLE showing the AVERAGE RATE of WAGES per WEEK for the Year ending 31st March, 1885.

Mining District.	General Managers.	Legal Managers.	Mining Managers.	Engineers.	Engine-drivers.	Stokers.	Blacksmiths.	Carpenters.	Miners.	Labourer.	Boys.	Chinese.	Agricultural Labourers.	Domestic Servants.
AUCKLAND—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	10/
Te Aroha ..	..	1 0 0	£3 10/ to £5	..	..	..	3 12 0	3 6 0	2 8 0	2 2 0	1 10 0	..	1 10 0	8/ to 12/
North Hauraki ..	..	1 0 0	£4 to £6	6 0 0	£2 10/ to £3	2 10 0	£2 10/ to £3	£3 to £3 12/	£2 2/ to £2 8/	1 16 0	15 to 20/	..	..	..
South Hauraki ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
MARLBOROUGH—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wairau ..	4 0 0	..	..	4 0 0	3 10 0	..	3 10 0	..	3 0 0	2 8 0	10/ to 20/	..	..	..
Pelorus ..	..	..	4 0 0	4 0 0	3 0 0	..	..	..	3 0 0	2 10 0	..	..	..	..
Queen Charlotte Sound ..	..	..	..	..	..	..	..	..	..	2 8 0	..	..	..	..
NELSON—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wangapeka ..	..	1 0 0	5 0 0	3 0 0	2 8 0	2 8 0	2 14 0	2 4 0	2 4 0	2 2 0	0 12 0	..	20/ to 25/	10/ to 12/
Collingwood ..	..	..	£5 to £6	£4 10/ to £5	3 10 0	3 0 0	2 14 0	48/ to 54/	2 8 0	..	..	..	20/ to 30/	10/ to 12/
Inangahua ..	7 0 0	£1 to £3	..	..	3 10 0	3 0 0	£4 10/ to £5	£4 10/ to £5	3 0 0	3 0 0	2 0 0	..	1 10 0	20/
Charleston ..	..	..	3 0 0	..	..	..	3 10 0	3 10 0	3 0 0	£2 to £3	20/ to 40/	..	1 5 0	10/ to 15/
Westport ..	..	1 0 0	5 0 0	..	3 15 0	3 0 0	4 4 0	4 4 0	3 0 0	2 10 0	5/ to 20/	..	25/ to 30/	10/ to 20/
Lyell and Murchison ..	6 0 0	1 10 0	6 0 0	6 0 0	..	..	4 0 0	3 10 0	3 3 0	3 0 0	2 10 0	..	2 0 0	20/
Ahaura ..	..	1 10 0	4 0 0	..	..	..	3 10 0	4 0 0	3 0 0	£2 8/ to £3	0 15 0	..	2 10 0	15/ to 20/
WESTLAND—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wainae ..	6 0 0	1 5 0	4 0 0	4 0 0	3 10 0	..	4 0 0	4 0 0	3 0 0	3 0 0	1 10 0	1 10 0	3 0 0	20/
Totara ..	..	1 0 0	£4 to £5	5 0 0	4 0 0	3 0 0	£3 to £4	4 0 0	3 0 0	3 0 0	1 10 0	1 10 0	1 0 0	10/ to 15/
Hokitika and Kaniere ..	..	5 0 0	4 0 0	..	4 0 0	..	4 0 0	4 10 0	3 0 0	3 0 0	1 10 0	1 10 0	4 10 0	10/ to 20/
Kumara ..	..	..	6 0 0	5 0 0	3 10 0	3 0 0	4 0 0	4 16 0	3 0 0	£2 14/ to £3	0 15 0	1 10 0	1 10 0	15/ to 20/
Greymouth ..	..	..	..	..	..	..	3 12 0	3 12 0	3 0 0	3 0 0	..	1 10 0	1 5 0	10/ to 15/
Okaito and Jackson's Bay ..	..	..	5 0 0	4 0 0	..	..	4 0 0	4 0 0	3 0 0	3 0 0	1 0 0	2 0 0	1 0 0	15/
Maori Gully (Arnold) ..	..	..	..	..	..	..	4 0 0	4 0 0	3 0 0	3 0 0	1 0 0	..	1 10 0	30/
Greenstone ..	4 0 0	..	2 0 0	..	..	..	£4 to £4 10/	4 10 0	£2 10/ to £3	3 0 0	1 0 0	2 10 0	30/ to 60/	20/
Goldsborough and Stafford ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
OPAGO—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hindon ..	..	..	..	..	..	..	3 0 0	3 0 0	42/ to 55/	2 8 0	..	..	£40 to £50 per annum	£30 to £35 per annum
Tuapeka ..	£3 to £4	£20 to £50 per annum	3 10 0	£3 to £3 5/	55/ to 63/	..	63/ to 84/	3 10 0	2 8 0	2 2 0	15/ to 30/	25/ to 30/	20/ to 25/	10/ to 12/
Cromwell ..	..	..	..	..	..	2 10 0	4 10 0	4 0 0	3 0 0	3 0 0	10/ to 20/	25/ to 40/	20/ to 25/	10/ to 20/
Clyde ..	6 0 0	1 10 0	5 0 0	4 0 0	3 0 0	..	..	..	..	..	..	..	..	..
Alexandra ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Black's ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Roxburgh ..	..	..	..	..	..	..	3 0 0	3 12 0	2 8 0	1 16 0	0 15 0	25/ to 30/	1 0 0	15/
Waikato ..	..	..	..	..	..	..	3 0 0	3 0 0	2 10 0	2 0 0	1 5 0	2 0 0	2 0 0	15/
Orepuki and Longwood ..	..	..	5 0 0	4 0 0	3 0 0	2 10 0	4 0 0	4 10 0	3 0 0	3 0 0	10/ to 15/	20/ to 30/	20/ to 25/	12/6 to 15/
Arrow (Wakatipu Gold-field) ..	6 0 0	1 0 0	..	..	..	..	..	..	..	..	..	..	..	..
Mount Ida ..	..	..	£3 to £4	..	..	..	£3 10/ to £4	£3 10/ to £4	3 0 0	£2 2/ to £2 8/	1 0 0	£2 2/ to £2 8/	£45 to £50 per annum	£35 to £50 per annum
Macrewhenua ..	..	..	..	..	..	..	3 0 0	3 0 0	2 8 0	2 2 0	10/ to 15/	2 2 0	£45 to £50 per annum	£45 to £50 per annum

No. 12.

NUMBER of MACHINES employed in ALLUVIAL and QUARTZ-MINING for the Year ending
31st March, 1885.

Mining District.	Machinery employed in Alluvial Mining.											Machinery employed in Quartz-mining.									
	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.	Buddles or Berdars.	Approximate Value of all Mining Plant included in this Return.
													No.	Aggregate h.p.							
AUCKLAND—																					
North Hauraki	7	200	8	89	4	..	..	19	30,000
South Hauraki	26	650	25	387	16	..	..	219	120,000
Te Aroha	1	20	2	50	4	..	..	59	22,000
MARLBOROUGH—																					
Ravenscliff and Queen Charlotte Sound
Pelorus & Wairau*	130	2	100	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1,545
NELSON—																					
Wangapeka	45	2	2	..	..	..	..	..	..	1	8	2	..	..	..	..	..	60
Collingwood	1	5	1	..	..	..	2,500
West Wanganui
Inangahua	114	..	68	..	..	..	..	..	..	18	242	18	285	13	2	3	55	122,530
Charleston	80	3	70	..	..	50	..	13	..	..	..	..	..	..	..	..	..	3,000
Lyell	23	..	15	..	1	..	..	..	..	4	45	3	..	..	..	..	..	11,000
Murchison	40	..	25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	900
Westport	45	6	26	..	..	..	..	..	..	..	..	1	10	1	..	..	..	3,500
Ahaura	480	1	320	1	..	..	..	..	..	..	..	..	..	..	..	..	..	6,500
WESTLAND—																					
Waimea
Totara†	4	40	8	40	6	..	..	..	..	..	..	1	4	1	3	1	..	..	..	14,000
Hokitika and Kani- nieri	2	40	70	..	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,500
Greymouth ..	1	1	4	1,700	1	300	15	..	30	..	13	..	..	..	..	..	..	..	..	..	5,000
Arnold†	1	6	765	7	119	..	1	..	..	..	..	..	..	..	..	..	..	..	..	6,350
Kumara	8	2	60	2	60	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,000
Goldsborough and Stafford	1	1,000	..	250	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,000
Greenstone	1,500	..	35	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,000
OTAGO—																					
Hindon	9	..	1	..	..	..	..	..	..	1	20	2	20	1	..	..	..	4,000
Tuapeka	1	..	500	15	10	30	2	..	125	..	..	..	3	..	20	4	1	..	..	11,750
Clyde, Alexandra, Cromwell, Rox- burgh, Black's Orepuki and Long- wood	4	2	650	11	5,360	17	7	41	5	..	2	20	9	..	71	2	2	..	..	41,080
Waikaia (Switzer's)	2	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	250
Arrow (Wakatipu Goldfield)	200	6	70	1	..	..	..	..	..	..	5	..	45	5	2	..	2	15,500
Naseby	150	..	70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,500
Kyeburn and Clarke's	70	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	500
Hamilton's, Sow- burn	40	..	25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	400
Hyde and Fuller- ton's	15	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	200
Macrae's, Strath- Taieri, and Shag Valley	50	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	150
Maerewhenua	20	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	150
Serpentine	20	..	5	..	..	..	..	..	..	1	5	1	..	..	..	..	..	600
St. Bathans, Ida Valley, and other localities	60	..	40	..	..	..	..	..	..	1	16	1	10	..	..	..	..	2,500
Queenstown	45	..	..	..	..	..	..	..	..	3	58	2	..	..	..	10,500
SUMMARY.																					
AUCKLAND	34	870	35	526	24	..	..	..	172,000
MARLBOROUGH	130	2	100	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1,545
NELSON	827	12	526	1	1	50	..	13	..	18	295	25	300	15	2	3	55	149,990
WESTLAND ..	1	15	93	5,103	50	800	15	1	30	..	13	1	4	1	..	3	1	..	..	..	38,850
OTAGO	5	2	2,164	46	5,918	66	9	48	5	125	..	5	61	24	224	15	5	..	2	90,080
Totals ..	1	20	95	8,224	110	7,344	84	11	128	5	138	13	58	1,230	85	1,053	55	7	3	354	452,465

* 1 steam-engine, 12 horse-power, quartz-crushing.
engines, 13 horse-power, quartz-crushing.

† 5 water-engines, 220 horse-power, quartz-crushing.

‡ 2 steam-

No. 13.

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, 1885.

Mining District.	Water-races.				Tail-races.		Dams.		Reservoirs.		Ground-slucies.	
	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	15	10½	47	3,000	..	..	..	..	..	..	..	..
Hauraki South	26	20½	103	85,000	1	80	1	60	1	600	..	..
Te Aroha	3	3½	11	7,500	..	..	..	..	..	..	..	..
MARLBOROUGH—												
Pelorus	32	42	61	4,500	18	1,500	18	400	..	..	..	..
Wairau	7	7	36	700	2	100	2	50	..	..	..	..
West Wanganui .. ..	..	..	..	..	..	..	..	..	..	..	..	..
NELSON—												
Takaka	18	12½	21	570	11	135	4	100	..	..	..	..
Wangapeka	2	8	3	..	14	..	7	..	..	..	..	..
Collingwood	54	61½	130	4,180	29	585	38	1,190	..	..	..	..
Inangahua	131	116	789	28,696	197	10,056	251	7,686	..	..	..	..
Charleston	245	135	287	22,308	187	6,762	417	9,600	1	3,000	70	3,000
Westport	203	181½	759	12,837	57	6,920	109	..	..	3,528	..	..
Lyell	52	40	217	7,087	22	1,656	37	2,708	..	..	15	1,500
Murchison	46	48	141	3,943	14	373	15	635	..	..	30	3,000
Ahaura	65	43	131	5,984	35	3,592	58	1,607	..	..	100	2,500
WESTLAND—												
Jackson's Bay	13	16	39	1,150	4	300	1	50	..	..	..	..
Totara	120	110	300	30,000	130	1,700	49	1,000	29	1,900	60	500
Hokitika and Kanieri	199	119	180	11,000	133	1,200	123	1,200	..	..	..	..
Kumara	115	72	236	14,500	130	15,000	23	2,500	11	7,500	25	250
Greymouth	118	97	161	3,870	93	2,910	91	2,100	..	..	60	2,200
Maori Gully (Arnold)	110	119	155	3,504	86	2,920	84	2,096	..	..	124	6,065
Okarito	33	23	200	1,400	..	..	12	200	..	..	..	..
Greenstone	110	75	220	1,600	75	3,000	40	3,000	..	..	40	1,000
Stafford and Goldsborough	490	350	830	14,200	500	7,500	600	12,000	150	2,500	380	4,500
OTAGO—												
Hindon	10	15	25	750	12	300	16	600	..	..	10	70
Tuapeka	311	1,053	1,054	21,060	658	8,820	249	7,730	..	..	..	..
Clyde	21	102	60	6,500	21	560	25	550	..	..	..	..
Black's	67	600	163	24,000	83	15,600	57	15,000	..	..	..	..
Queenstown	150	175	250	7,500	150	4,000	40	1,700	11	550	..	..
Alexandra	35	130	83	9,000	36	1,100	40	850	..	..	..	..
Roxburgh	46	166	203	17,500	75	15,500	30	1,460	..	..	..	..
Cromwell	142	573	557	52,410	100	7,000	50	2,370	..	..	..	..
Waikaia	66	244	250	4,880	274	3,800	128	3,840	..	..	..	..
Orepuki and Longwood	220	400	550	13,000	..	..	..	..	..	..	50	1,000
Arrow (Wakatipu Goldfield)	141	127	247	10,000	210	5,500	30	1,875	30	..	28	280
Naseby	44	150	132	25,000	..	..	..	..	..	..	..	..
Kyeburn and Clarke's	70	210	230	10,100	..	..	..	..	..	..	..	..
Hamilton's, Sowburn	31	106	80	5,500	..	..	..	..	..	..	..	..
Hyde and Fullerton's	18	90	64	10,150	..	..	..	..	..	..	..	..
Macrae's, Strath-Taieri, and Shag Valley	26	42	43	4,000	..	..	..	..	..	..	..	..
Serpentine	36	88	93	5,000	..	..	..	..	..	..	..	..
Maerewhenua	48	141	161	12,200	28	1,000	18	2,000	..	..	..	..
St. Bathans and Ida Valley	..	..	..	..	..	..	..	..	..	..	..	..

No. 14.

RETURN showing the REVENUE and EXPENDITURE on account of CONSTRUCTED WATER-RACES maintained by the Government, from 1st April to 30th September, 1884, and from 1st October to 31st March, 1885.

Name of Race.	1st April to 30th September, 1884.						1st October, 1884, to 31st March, 1885.						Balance due on Water Account.		
	Revenue.				Expenditure.	Revenue.				Expenditure.					
	Water sold.		Actual Receipts.			Water sold.		Actual Receipts.							
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Nelson Creek ..	484	1	8	484	1	8	427	13	8	506	5	0	506	5	0
Waimea-Kumara ..	5,971	7	9	6,064	7	5	1,409	18	2	5,451	5	11	4,911	10	0
Kumara Sludge-chan.	1,146	5	5	577	5	5	3,936	18	11	1,017	10	11	1,855	9	8
Argyle ..	268	15	11	268	15	11	253	12	2	207	17	7	207	17	7
Mikonui	50	0	0	50	0	0	..			50	0	0	50	0	0

No. 15.

TABLE showing the NUMBER of GOLD-MINING COMPANIES REGISTERED under "The Mining Companies Limited Liability Act, 1865," and Amending Acts, the Joint-stock Companies Act, and "The Mining Companies Act, 1872," upon 31st March, 1885.

Mining District.	Under "Mining Companies Limited Liability Act, 1865," and Amending Acts.			Under Joint-stock Act.			Under "Mining Companies Act, 1872."		
	No.	Nominal Capital.	Paid-up Capital.	No.	Nominal Capital.	Paid-up Capital.	No.	Nominal Capital.	Paid-up Capital.
AUCKLAND—		£	£		£	£		£	£
North Hauraki* ..	..	..	..	24	397,800	100,550	..	..	..
South Hauraki ..	..	..	..	..	..	..	17	345,000	14,000
Te Aroha ..	..	..	..	..	..	..	..	..	..
MARLBOROUGH—									
Pelorus ..	..	..	..	1	3,000	2,000	5	27,000	5,000
Queen Charlotte Sound ..	..	..	..	..	..	..	1	11,000	9,000
NELSON—									
Collingwood ..	..	..	..	..	..	..	4	88,000	23,200
West Wanganui ..	..	..	..	..	..	..	..	..	..
Westport ..	..	..	..	..	..	..	11	315,000	143,366
Inangahua ..	1	28,000	24,596	..	..	..	57	998,750	379,088
Lyell ..	..	..	..	..	..	..	18	455,000	243,360
WESTLAND—									
Hokitika ..	..	..	..	..	..	..	..	..	..
Greymouth ..	2	12,000	9,500	1	4,480	4,480	..	..	..
Totara ..	2	180,000	156,600	..	..	..	6	127,000	46,800
Kumara ..	..	..	..	..	..	..	1	16,000	12,500
Greenstone ..	1	6,000	6,000	1	4,480	4,480	..	..	..
Waiuea ..	..	..	..	..	..	..	..	..	..
Stafford ..	..	..	..	..	..	..	1	15,000	8,000
OTAGO—									
Hindon ..	..	..	..	..	..	..	1	1,200	900
Tuapeka ..	11	40,975	18,602	..	..	..	8	80,200	40,000
Cromwell ..	2	18,000	15,000	..	..	..	2	13,000	6,300
Clyde, Black's, Alexandra, and Roxburgh ..	..	..	..	..	..	..	6	62,300	16,200
Orepuki and Longwood ..	..	..	..	..	..	..	1	1,100	1,000
Arrow (Wakatipu Goldfield) ..	..	..	..	..	..	..	24	308,150	150,246
Naseby (Mount Ida) ..	7	44,220	44,220	..	..	..	8	66,700	56,880
Queenstown ..	..	..	..	1	24,000	12,600	2	33,000	24,450
Totals ..	26	329,195	274,518	28	433,760	124,110	173	2,963,100	1,179,290

* No register kept.

No. 16.

RETURN of the NUMBER of MINING LEASES and AGRICULTURAL LEASES in Force on the 31st March, 1885, the EXTENT of GROUND LEASED, and RENTAL per ANNUM.

Mining Leases.				Agricultural Leases.			
Mining District.	No.	Gross Acreage.	Rental per Annum.	Mining District.	No.	Gross Acreage.	Rental per Annum.
AUCKLAND—		A. R. P.	£ s. d.	AUCKLAND—		A. R. P.	£ s. d.
Hauraki North ..	..	..	..	Hauraki, Ohinemuri ..	94	4,476 3 2	321 5 0
MARLBOROUGH—				NELSON—			
Wairau and Pelorus ..	4	54 0 11	56 0 0	Nelson ..	1	46 0 0	5 15 0
Qn. Charlotte Sound ..	3	23 0 24	24 0 0	Collingwood ..	11	622 2 5	63 17 0
NELSON—				Inangahua ..	47	2,871 3 6	344 10 6
Collingwood ..	15	185 1 31	185 0 0	Charleston ..	23	542 2 24	45 11 6
West Wanganui ..	..	..	..	Westport ..	33	2,424 3 6	261 18 0
Inangahua ..	74	1,561 1 34	1,339 7 6	Lyell ..	40	2,162 1 21	246 10 0
Charleston ..	26	150 1 24	144 0 0	Ahaura ..	74	4,268 1 9	471 7 6
Ahaura ..	17	143 2 4	150 0 0	WESTLAND—			
Westport ..	31	396 2 32	407 10 0	Greymouth ..	9	776 1 38	77 12 0
Lyell ..	17	347 2 28	352 0 0	Arnold ..	20	889 0 7	102 15 6
Murchison ..	2	31 0 28	32 0 0	Greenstone ..	1	89 0 0	11 2 6
WESTLAND—				Totara ..	2	22 0 0	2 15 0
Kumara* ..	1	10 0 0	10 0 0	Kumara ..	2	69 2 13	8 15 0
Totara ..	33	390 2 21	405 0 0	OTAGO—			
Greymouth ..	5	55 1 0	57 0 0	Waikaiti ..	2	90 0 3	11 7 6
Arnold ..	4	28 0 0	18 10 0	Tuapeka ..	48	5,312 2 33	750 6 0
OTAGO—				Cromwell ..	43	5,018 1 14	629 12 6
Waikaiti ..	..	..	..	Clyde, Alexandra, Black's, Roxburgh ..	24	3,774 3 21	473 7 0
Orepuki and Longwood ..	3	11 0 0	11 0 0	Mount Ida District ..	43	7,122 0 14	892 15 0
Hindon ..	3	49 0 0	50 0 0	Arrow (Wakatipu Goldfield) ..	43	2,210 1 0	275 17 6
Tuapeka ..	34	238 0 15	208 0 0	Queenstown ..	45	1,333 2 0	165 7 6
Cromwell ..	9	124 0 9	131 0 0	Totals ..	605	43,623 0 16	5,162 7 6
Clyde, Alexandra, Black's, Roxburgh ..	28	294 3 5	307 0 0				
Naseby ..	52	394 0 0	394 0 0				
Arrow (Wakatipu Goldfield) ..	51	374 1 10	384 0 0				
Queenstown ..	45	343 1 25	348 0 0				
Totals ..	457	5,206 0 21	5,013 7 6				

* Exclusive of special claims.

No. 17.

RETURN of the NUMBER of LICENSES under "The Gold-mining Districts Act, 1873," for the Year ending 31st March, 1885.

Mining District.							Number.	Gross Acreage.	Rental per Annum.	
								A. R. P.	£	s. d.
AUCKLAND—										
North Hauraki	..	..	..	..	..	..	20	150 2 7	452	0 0
Grahamstown	..	..	..	..	..	..	102	698 2 20	2,145	0 0
Te Aroha	..	..	..	..	..	..	35	155 2 28	455	0 0
Totals							157	1,004 8 15	3,052	0 0

No. 18.

RETURN of CASES in the WARDENS' COURTS, and COSTS AWARDED, for the Year ending 31st March, 1885.

Mining District.							Aggregate Amount of Value.		Amount of Costs awarded.	Cases wherein Judgment has been given in favor of Specific Performance.
							Number of Mining Disputes adjudicated on.			
								Claimed.	Recovered.	
AUCKLAND—								£ s. d.	£ s. d.	£ s. d.
North Hauraki	..	..	..	..	..	..	17	.. ..	.. ..	3 5 0
South Hauraki	..	..	..	..	..	..	26	2 0 0	2 0 0	38 4 0
Te Aroha	..	..	..	..	..	..	71	616 10 0	386 10 0	23 0 0
MARLBOROUGH—										
Pelorus and Wairau	..	..	..	..	..	..	8	146 12 1	75 12 1	5 4 0
NELSON—										
Collingwood	..	..	..	..	..	..	..	.. ..	.. ..	.. ..
Inangahua	..	..	..	..	..	..	22	1,185 13 0	331 18 7	20 5 0
Lyell	..	..	..	..	..	..	5	25 0 0	24 0 0	7 17 0
Westport	..	..	..	..	..	..	2	.. ..	.. ..	12 5 0
Charleston	..	..	..	..	..	..	17	73 4 8	61 14 8	8 17 0
Ahaura	..	..	..	..	..	..	15	63 15 0	43 15 0	7 11 0
Murchison	..	..	..	..	..	..	1	6 15 0	6 15 0	2 4 0
WESTLAND—										
Hokitika and Kanieri	..	..	..	..	..	..	13	133 0 0	5 0 0	14 1 0
Waimea and Okarito	..	..	..	..	..	..	6	180 0 0	.. ..	.. ..
Totara	..	..	..	..	..	..	7	126 11 0	.. ..	7 0 0
Kumara	..	..	..	..	..	..	17	402 3 0	155 1 0	9 9 0
Greymouth	..	..	..	..	..	..	15	18 1 0	13 1 0	42 17 6
Arnold (Maori Gully)	..	..	..	..	..	..	15	126 15 0	2 0 0	9 5 0
Greenstone	..	..	..	..	..	..	5	19 10 0	9 10 0	9 11 0
Goldsborough and Stafford	..	..	..	..	..	..	13	271 0 0	0 2 0	28 13 0
OTAGO—										
Hindon	..	..	..	..	..	..	3	.. ..	.. ..	1 4 0
Tuapeka	..	..	..	..	..	..	9	321 17 6	292 18 6	5 16 0
Cromwell	..	..	..	..	..	..	45	125 0 0	85 0 0	15 17 0
Alexandra	}	..	..	..	..	..	17	.. ..	.. ..	10 0 0
Roxburgh										
Black's										
Clyde	}	..	..	..	..	..	31	67 0 0	1 0 0	6 9 0
Waikaia										
Orepuki and Longwood	..	..	..	..	..	..	15	348 0 0	125 0 0	15 3 0
Arrow (Wakatipu Goldfield)	..	..	..	..	..	..	8	121 10 3	121 10 3	20 0 0
Queenstown	..	..	..	..	..	..	11	.. ..	.. ..	23 18 0
Naseby	..	..	..	..	..	..	7	224 4 9	145 15 10	.. ..
Maerewhenua	..	..	..	..	..	..	3	59 9 0	2 0 0	16 9 6
Totals							424	1,663 11 3	1,893 3 11	364 5 0

NOTE.—The returns numbered 7, 9 to 13, and 15 to 18, inclusive, are compiled from statistics supplied by Wardens.

H. J. H. ELIOTT,
Under-Secretary for Goldfields.

Mines Department, Wellington, 23rd June, 1885.