

SESS. II.—1897.
NEW ZEALAND.

REPORTS OF WARDENS AND OTHER OFFICERS ON GOLDFIELDS.

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

No. 1.

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

SIR,—

Warden's Office, Thames, 22nd April, 1897.

In reply to your circular of 9th March, I have the honour to furnish the following report on the Puhipuhi Goldfield, near Whangarei. There are eighteen claims in existence, which pay £875 per annum rent. The area occupied is 1,790 acres, and there are twenty-five miners at work. I had hoped from the prospects of the field when last reporting that there would have been a little more vitality by this time. The British Gold and Silver-mining Company owns six special claims, and consists of gentlemen who are prepared to expend a considerable sum of money in working and developing their mine, but up to the present they seem to have met with many disappointments. Several thousand pounds have been spent on and about this property, but, so far, with little benefit. There is a considerable quantity of silver ore on this property, which it is stated should pay well, but owing to the want of a something, no return worth mentioning has yet been obtained; whether the fault is in the management, or want of knowledge in the treatment of the ore, I am not in a position to say. This company deserves better fortune.

Another property I understand has been floated on the Home market, but the bulk of the claims have had more or less protection to give the licensees' time to procure capital to enable them to develop the ground. I believe a time will come when a process will be discovered which will enable these ores to be satisfactorily treated, when, I believe, it would pay to work some of these claims. Under the present known processes it is very difficult to save sufficient silver and gold to pay.

The British Company have a battery, tram-line, and reservoir in connection with their claims, also a water-race. It is to be hoped the next year's report may show some improvement on this field, in the shape of one or two of the mines there employing the full number of men, and being able to pay working expenses from results obtained.

I have, &c.,

R. S. BUSH, late Warden, Puhipuhi.

The Under-Secretary, Mines Department, Wellington.

No. 2.

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

SIR,—

Warden's Office, Thames, 7th July, 1897.

I have the honour to submit the annual report of the Hauraki Goldfield:—

THAMES COUNTY.

The prospects of this portion of the mining district have never been so bright as at present. During the past year a most beneficial change took place in the prospects of the mining industry. To the introduction of large sums of foreign capital to assist in systematically developing the large areas of auriferous back-country which the county possesses may this change be attributed, and not to any actual increase in the output of gold. During the past year the amount of bullion won has shown a decrease as compared with the previous twelve months, as the works carried out have been more of a developing than of a productive nature. With the assistance provided by the outside capital large and more systematic works have been commenced in the old-established mines, and new and hitherto almost unknown portions of the district have been prospected. The result of this prospecting goes to prove that a large and highly auriferous back-country exists. Several mines containing rich reefs have been opened up, notably the Broken Hill (Tairua) and Whangamata Proprietary.

The trouble with the Kauri Timber Company, *re* the right to mine upon their leaseholds and freeholds at Tairua and Pakirarahi has retarded the opening up of these localities, which are said to contain large payable lodes.

At Thames proper a work of great importance that will eventually have a beneficial effect upon the future of the town was commenced—*viz.*, the preliminary operations for the testing of the deep levels. The point chosen is the old Queen of Beauty shaft. It is intended to continue this to a depth of 2,000 ft. The foundations for the pumping machinery are being prepared, and everything pushed ahead. When completed the public will have the right to use the shaft from which to start operations on the low levels.

At Great Barrier Island, the latest addition to the mining district, thirteen special claims have been granted, and mining operations of an extensive character are being carried on. The ore found carries silver principally, and is said to be payable.

In the office, the past year has been an unusually busy one, and it is doubtful if ever before it had such a busy time receiving and dealing with applications. The following returns will show how busy the office has been: 1,157 licensed holdings and special claims applied for, 481 granted; 293 water-races applied for, 78 granted; 40 machine sites applied for, 38 granted; 198 residence sites applied for, 69 granted; and 1,319 different rights and privileges registered.

The sum of £36,332 has been passed through the deposit account, and £11,707 paid to Public Account, making, in all, the sum of £48,039 passed through the office.

Thames-Hauraki Goldfields (Limited).—This is an English company, formed to develop the Queen of Beauty, Deep Sinker, and Deep Levels Consolidated Special Claims. The old Queen of Beauty shaft is being enlarged, and is to be continued to a depth of 2,000 ft. This shaft will act as a main shaft, from which the deep levels can be worked—in fact, will be the key to the flat. Powerful pumping and working machinery is to be erected, and the foundations are now in an advanced stage. A shaft is also being sunk in the Deep Sinker section. Efficient pumping machinery has been erected here. A prospecting drive has been driven into the hill in the Deep Levels Consolidated section, but nothing of importance has been discovered.

Moanatairi Mine.—This mine has been taken over by the Anglo-Continental Syndicate, which is making large alterations and improvements to the crushing-plant. When finished it will be a most complete and thorough plant, fitted with the latest gold-saving appliances. These improvements will, it is claimed, enable the low-grade ore, of which large bodies are known to exist in the mine, to be treated economically, and thus become payable. The returns for the past year have been good.

Kuranui-Caledonian.—This includes Comer's Kuranui, and the Hazelbank; the latter includes the once famous Caledonian ground. An English company has taken over this property and is going to carry on operations on a large scale. Very encouraging prospects have been met since operations were started. The 20-stamp battery which belongs to the mine has been repaired, and a tramway to convey quartz from the mine to the mill erected. Enough payable ore has been met with to keep the mill going for the last month.

Victoria Mine.—Work has been steadily carried on in this mine during the year. A new reef was discovered early in the year which has given good returns. A considerable quantity of ore has been taken out, and the mine well opened up. It is now under offer to an English syndicate and if taken over, capital, which is all that is required to make it payable, will be available.

May Queen Mine.—This is another mine that has been worked consistently, with favourable results. Payable returns have been to hand almost every month. The mine has recently been taken over by the Anglo-Continental Syndicate, and we may look forward to further developments which should prove highly remunerative.

Waiotahi Mine.—This mine still continues to be the most consistent gold-producer. Operations have been successfully carried on for years past, and payable monthly returns of gold have been banked almost without a break. The prospects, judging from the present, are likely to continue as good as ever. Something like £24,000 has been paid in dividends since 1877.

Cardigan Mine.—This company is now sinking a shaft from which to work the mine, instead of working from the May Queen shaft, which it has been doing in the past. The site has been chosen so that the shaft will intercept the reef of the May Queen and Thames-Hauraki Companies which strikes across the mine. This should prove a valuable property if gold is found when the Queen of Beauty shaft reaches the deep levels.

Fame and Fortune Mine.—This mine has been taken over by the Hauraki Golden Age Company, of London. The new company has commenced to develop the property. An aerial tramway to carry quartz from mine to battery is to be erected, and battery put in thorough repair and improved.

Alburnia Mine.—This property is now owned by an English company—the New Alburnia Gold-mining Company (Limited). Operations have been very satisfactory during the year. The principal works have been the sinking of the main shaft and re-opening old workings. The company looks forward to the time when the developments can be proceeded with at the deeper levels. Plans for the erection of new reduction plant are now being prepared in anticipation of these operations being successful.

Adelaide Mine.—This company has during the year carried on work continuously and systematically with fair results. The reef discovered has not proved as payable as was anticipated, but indications are such as to lead one to believe that improvements will shortly be met with.

Gloucester Mine.—An English company now owns this property. Prospecting works have been going on for some time, with results such as to induce the company to sink a shaft. Plans of a battery, to cost £850, of the latest pattern, have been prepared, and it is intended to erect this as soon as the prospects met with on the surface are proved when the shaft is finished.

Anchor Mine.—This is being worked by an English syndicate and thoroughly prospected and opened up. Parcels of the ore from each reef are tested at the small battery owned by the syndi-

cate, with fair prospects. The McIsaacs, Nonpareil, Occidental, May Queen Extended, Karaka Mines, Karaka Queen, Manchester, Thames, and Fortuna Mines are all being prospected, with fair results. The Karaka Mines and Fortuna have been disposed of to English companies, who intend carrying on work on an extensive scale.

Tararu Creek Gold-mining Company (Limited).—This company has had very good results during the year. Payable ore has been met with, and at present the future of the mine looks very bright. The battery has been kept going with ten head of stamps almost all the year. A complete cyanide plant has been added, which will materially increase the output of bullion. A new high-level water scheme is to be commenced at once, which, when completed, will enable the full head of stamps to be kept going all the year round.

City of Auckland Mine.—This ground was formerly worked by the Sylvia Gold-mining Company (Limited), who took out a considerable quantity of ore, with highly satisfactory results, but the company was wound up through want of capital. The City of Auckland Company is now engaged in sinking a shaft, and intends to open up the lower levels. It is expected that the reefs worked by the old company so satisfactorily will be met with, and, if so, this will prove a valuable property.

Scandinavian Mine.—A company to work this ground has lately been formed in London, and is now engaged in opening up the mine. Payable reefs have been worked by the old company, and a good quantity of ore crushed. The new company is now opening out on these reefs, and the prospects continue to be satisfactory. There are a number of miners working in the vicinity of this mine, engaged principally in prospecting operations. Some good discoveries have been made in the Kaiser, Argosy, and Vulcan Mines.

Puru District.—A large number of mines are operating in this district, which is rapidly coming to the front. The Puru Consolidated Company continues to open up large blocks of reefs in which gold is freely seen. A considerable quantity of quartz is to grass and ready for crushing. It is intended to commence the erection of a battery when the roads are sufficiently good to enable the material to be carted to the machine-site. This is one of our most important new mines, and should soon be well up our list of good producers.

The Big Reef Company is opening up its ground extensively, and good prospects are being obtained. The lodes are large, as is generally the case in this portion of the district.

The Grand Triple, Waipuna, Queen of Puru, Ulysses, Bendigo, and Orion Companies are in every instance conducting useful prospecting operations, some of which are attended with very satisfactory results.

Waiomo District.—The Monowai property has been taken over by an English company, which is pushing on permanent development works to intersect the reefs at a depth, when, if it is found that the payable ore continues, a new plant will be erected.

The Anglo-Continental Syndicate are opening up the reefs in the Broken Hills property, and are conducting extensive works in the Comstock. The company hold options over both these mines.

Tapu District.—The Mahara Royal property is being developed by the Austin Friars Syndicate, of London, and is opening up well. Excellent prospects are being met with in all parts of the mine. Contracts have been let for the erection of a ten-stamp mill, and the construction of a water-race, which are now being proceeded with.

The Sheridan Mine has had a good year. Payable ore was met with, and some hundreds of pounds of specimens obtained. A low-level tunnel is being put in, and it is expected that the reef will come again. An English syndicate is working the ground, and prospects are improving.

The Shannon Mine has been prospected extensively, and good reefs, showing gold, met with. A trial crushing at the School of Mines proved highly payable.

The Golden Point Gold-mining Company has been reconstructed for the purpose of obtaining capital to prove the reefs at a lower level.

The Mata Reefs Company has been prospecting, with encouraging results. The Golden Horn, Club, Golden Band, and Jessie are all carrying on prospecting operations, and in some instances with good results. Several sluicing claims, a class not often met with in this district, have been taken up in the Mata and Tapu Creeks, but I have not heard of anything of importance being discovered.

Whangamata District.—The Whangamata Proprietary Company (an English company), which has taken over the Luck at Last, Luck at Last Extended, and the Wharekawa special claims, is carrying on extensive development works upon the different lodes found, and, so far as these works are advanced, they are considered to be highly satisfactory. Extensive development works are going on in the Golden Mount, Phoenix, Inca, Ptolemy, Prince Charlie, Mikado, Herald, King of Whangamata, Moa, Sybil, Wairoa, Golden Falls, Three Star, and Flemington, all with good results, but nothing sensational has been discovered.

Tairua District.—The Broken Hills Mine, in which last year very rich ore was found at the surface, has been taken over by an English company, and developments of an extensive nature are fairly under way. The reef has been proved to go down, and the works now going on are for the purpose of intersecting the lode which yielded such rich assays at the surface. The level is favourably situated for carrying on operations on a large scale, and also as far as the battery is concerned. The company is doing its utmost to develop the property as speedily as possible. Preliminaries are now in progress for the construction of a water-race and a large reduction plant of the latest pattern.

The Albert, Tairua Proprietary, and New Year Mines, which will adjoin the Broken Hills property, are prosecuting extensive prospecting works.

A great many other claims are being prospected, with more or less success. There is no doubt that this district possesses many valuable lodes which will be worked in the near future and add considerably to the yield of bullion. The class of ore is generally free-milling, and the gold easily saved.

Puriri District.—The Bewick-Moreing Syndicate has been prospecting the Hit-or-Miss property, and good prospects have been met with.

The Apakura Syndicate has been prospecting the Apakura and Fair Alice Mines, but has not met with much success.

The Dover Castle Company is prospecting its property. Two reefs were discovered, and are now being opened up. The prospects are good.

Omahu District.—This is a new district. A great number of claims have been taken up, and the owners are carrying on prospecting operations. Several reefs carrying gold have been discovered, but work has not far enough advanced yet to say whether or not they are payable.

Kirikiri District.—Work at Fleming's (the Horse-shoe, Filly, and Chester special claims) has been carried on by the New Zealand Exploration Company (Limited). Good prospects were met with at first, but the reef was lost, and the company gave up the option. Since then the men engaged by Mr. Fleming have put in a cross-cut, and discovered the reef a few feet away. Rich specimens were taken out, and the reef is stronger than ever. This property is well worth developing. Several other claims have been taken up, and prospecting is going on.

Pakirarahi and Upper Tairua.—Several claims have been granted in this locality, and a great many more applied for, but the difficulty with the Kauri Timber Company has prevented the majority being granted. Prospecting work has been going on with success enough to warrant the expenditure of capital to open up the different lodes discovered.

Kaueranga District.—Large lodes have been found in this locality, and several claims applied for. This district is worth prospecting.

Ohui District.—Work has been going on in several of the claims in this district, but nothing payable has been unearthed. The Maori Dream property has been disposed of to an English company, which is prospecting the ground thoroughly.

OHINEMURI COUNTY.

Gold-mining in the Ohinemuri County has made great strides during the preceding twelve months, and unquestionably the county has a great future before it as a gold-producing district. The major part of the county has already been pegged out, and there are now existing 622 special claims and licensed holdings, of a total acreage of 44,895 acres 2 roods 38 perches. The population has gone on steadily increasing, and there are now large towns at Waihi, Waitekauri, and Karangahake, and in addition I have had to give instructions to the Government surveyor to have townships laid off without delay at Waikino, Komata, and Maratoto. During the year 1936 residence sites were applied for, and in many cases very good and substantial houses have been built on them.

The Waihi, Crown, Woodstock, Waitekauri, and Talisman Mines have sustained their great reputations as gold-producers, whilst the Silverton, although slightly disappointing, promises to come back, when properly developed, to the opinion previously formed of it. In addition to the above-mentioned companies, which are now in full going order, the following new batteries are in course of construction, and should considerably add to the output of gold for this and the following years: Waihi Company, 100 head of stamps, at Waikino; the Komata Reefs, Waitekauri Extended, and Royal Standard, 40 head of stamps each; the Alpha and Jubilee, 20 head of stamps each; besides which the Hikutaia Syndicate, in the Maratoto District, proposes to erect a 100-head battery in the spring.

From the experiments lately conducted in the Crown Mines battery with a wet-crushing process (particulars of which are not yet to hand) it is believed a new era will be started in the milling process. The experiments have been so successful that the present Crown battery is being converted to meet its requirements. The advantages attaching themselves to this system are so important that it is sincerely to be hoped that it will be the success claimed. It will completely do away with the "dust" evil, which mine-managers have been so much exercised over, and which has been the cause of so many deaths. This alone stamps the process as a blessing; but it will also to a very great extent assist in preserving the timber, which will all be required for *bona fide* mining operations, instead of being ruthlessly cut and burnt in the kilns. The ore will not require roasting in the kiln before going through the mill, thus saving a large amount of money, for the cost of cutting, splitting, &c., and conveying to battery has been a costly matter. But the greatest advantage it claims is that, whilst by the dry-crushing 1 ton of ore per diem can be crushed by each stamp, by the new process double the result can be obtained. Needless to say the practical solution of the process is anxiously awaited, but it is feared that quartz containing fine gold such as that at Waihi Mine cannot be treated with water, because when crushed there is too much clayey substance in the ore.

Maratoto.—A very large amount of prospecting and development works has been done during the preceding twelve months. The Hikutaia Syndicate has acquired three special claims and two licensed holdings, and has already driven 1,300 ft. in the main reef, with such good results that it contemplates erecting 100-head of stamps and a complete cyanide plant in the spring. At present a large low-level prospecting tunnel is being put in, which will develop all the properties belonging to the syndicate.

Karangahake.—The Crown mine has made great progress, and the workings are looking particularly well. This company has under order a large amount of new machinery, including a compressor of 180 horse-power, which will allow the shaft to be put down to the 500 ft. level below the river-bed. This will enable the mine to be thoroughly opened up. Two large chambers have been excavated, one on each side of river, to accommodate the new machinery. To drive this a water-race 110 chains in length down the Waitawheta River is being constructed. The Earl of Glasgow Special Claim has also been acquired, and as the same reefs traverse both properties, it can be worked better and cheaper. This mine has just paid a dividend.

The Woodstock Gold-mining Company has started operations with its new battery of forty heads. The mine itself is well opened up and thoroughly developed, and promises to be as good a

gold-producer as there is in the district. The battery, which is working smoothly and well, is of the most modern type, which can be gathered from the fact that the ore is not touched from the time it is put into the kilns until it has finished the entire course of mill. The first return, which is highly satisfactory, was £4,652 from 1,300 tons treated, and it is expected this standard will be maintained. This company has constructed a water-race, through iron pipes 4 ft. in diameter, at a great cost. This race is to be extended.

The Talisman Gold-mining Company is making rapid progress with the new twenty-head battery, which will be finished in three months' time. Great development works have already been done, and the mine has a splendid future before it.

The Ravenswood Special Claim has lately been acquired by an influential English company, and vigorous prospecting is being done. A low-level tunnel to cut the big reef is being put in from the Ivanhoe ground.

Steady development works have been carried out in the Stanley, Sterling, Ivanhoe, Imperial, Waverley, and Victor Waihou mines, and good results may confidently be expected from them.

All the available ground round Karangahake, extending right up the Mangakino and Waita-wheta Rivers, also right through the Rotokohu Gorge, has been taken up.

Owharoa.—The chief property in this district is owned by the Ohinemuri Syndicate, which holds a large block of freehold ground. Developing operations are being steadily pushed on, and the Government has subsidised the Elliott low-level tunnel, which should thoroughly prospect the ground. In addition to this the company has put down a shaft, for which pumping and winding-gear is now being put in. Here also the Waihi Company is erecting a battery with two hundred head of stamps, with other necessary buildings. A tram-line to connect this battery with the mine at Waihi has already been completed, and a 20 horse-power engine now runs on it. A water-race several miles in length is also under construction, in connection with which there are two bridges also being erected, which will cost about £2,500. The tram-line cost about £1,760 per mile. When these works are completed Owharoa will be a busy place, and its population will be considerably increased.

Waitekauri.—The Waitekauri Gold-mining Company is at work on a main low-level tunnel, 85 chains long, which will thoroughly prospect the intervening country up to the cross reef, and will also give a double line for a tramway to convey ore down to the battery. At the same time two new shafts are being sunk to connect with this tunnel. Rock-drills are being used, and rapid progress is being made. The battery has worked smoothly since it was started, and good returns have resulted until lately, when some slight difficulty arose in treating the ore. This the company propose overcoming by erecting nine additional steel vats. In addition to the forty stamps in use, a Krupp patent ball-mill, which is said to be equal to fifteen stamps, has been added, and has given great satisfaction. In the Te Ao-Marama section of the mine the company is putting in a large low-level tunnel, of the same size as the Golden Cross tunnel, half a mile long, from the east side of the range, which should thoroughly test and cut whatever reefs traverse the ground.

The Jubilee Company is now erecting a twenty-head battery, which should be finished in a few months. The prospects of the company have considerably improved, a better class of ore being obtained from Christie's Reef. They are putting in a low-level tunnel to thoroughly test the whole property.

The Waitekauri Extended Company has made rapid progress, and by next Christmas a forty-stamp battery should be in full swing. The company has constructed a large water-race to their machine-site at the junction of the Maratoto and Whakamoehau Streams.

The Alpha Gold-mining Company has excellent prospects, and a good deal of developing has been done. This company intends to erect a twenty-stamp battery and full cyanide plant immediately.

The Waitekauri United are thoroughly developing their property by means of two main low-level tunnels, one from the south-east and one from the north-west. Although the country is very hard, rapid progress is being made, as the company has an air-compressor at work, and is using rock-drills. Substantial assay-offices have also been erected.

The Grafton, Kathleen, Beehive, Grace Darling, and Central Pilot have done a good deal of work, and should have good prospects.

Komata.—The Komata Reefs Company has erected a fine battery of forty head of stamps, which should be ready by October. The battery is of the most modern type. A large water-race has been laid down the stream. The ground contains several good lodes, and a large amount of work has been done upon them. The Komata Queen, Komata Triumph, Byron Bay, and Key of Komata Companies, have done extensive developing work, and this district promises to rank as a good gold-producing one.

Wharekeraupunga.—This comparatively new district has flourished in a most remarkable way during the last twelve months, and the country around for miles has been all taken up. This is entirely owing to the splendid find made by the Royal Standard Gold-mining Company, and to the energetic manner in which they have pushed on their various works. This company has been employing for months past 180 men. An excavation for eighty stamps has been made, but only forty are to be erected at first, and tenders have already been called for supplying machinery. A water-race three-quarters of a mile long has been finished, and a tramway constructed from the battery site to the Whangamata landing. A large low-level tunnel 7 ft. by 8 ft. has been put in, which will give about 800 ft. of backs. It is expected that shortly after Christmas this mine will be in full working-order.

The Sceptre, Tavistock, Wharekeraupunga, Fiery Cross, Gold Stream, and various other companies, are pushing on their works with vigour.

Considering the short time this district has been started, the amount of work done and activity shown is remarkable.

Waihi.—The Waihi Gold-mining Company still maintains its great reputation, and last year saw more gold taken from it than in any other previous year. The mine itself has been most thoroughly and systematically opened up, and there is enough quartz in sight to last a very considerable time. The company has employed between five and six hundred men during the whole year, and the new works at Waikino have been carried out regardless of expense. The battery site required an enormous excavation, and the new battery, of one hundred head of stamps, will shortly be ready. A tramway, six miles long, for the purpose of bringing the ore to the mill, which is really a light railway, is nearly completed, and a steam crusher, for ballast for the line, is now hard at work. Two large water-races have been constructed, at a cost of £14,000, one from Waihi and the other from Waitekauri. To show the extent of the company's operations it may be mentioned that the new buildings erected by them at Waikino, consisting of dwellings, blacksmith's and fitting shops, offices, battery-house, tank-sheds, &c., completely cover 5 acres, and the money expended in these works, as may be gathered, is enormous.

Waihi-Silverton: Returns from this property were for some time not up to expectations. This was extremely disappointing, as it was anticipated that when the battery was started it would be a second Waihi. However, the property is being thoroughly prospected and opened up, and a main shaft is being sunk to a considerable depth. As a consequence the mine is improving, and returns are getting better, so that if care is exercised the property may yet come back to what was anticipated of it.

The Grand Junction: This company has sunk its shaft 500 ft., and put in cross-cuts north and south, but so far without success. It is thought by many experts that the shaft is not down low enough, and that a greater depth must yet be attained before success can be looked for. A few more weeks should decide this knotty point, as the northern cross-cut has nearly reached that position where the reef should be met with. In the west section of this mine a reef was cut which was thought to be the Martha. But it has since given out, and although the cross-cut has been continued, it has got into pumice country. It would appear as if this shaft was not down low enough, and these remarks would also appear to apply to the shafts in the Waihi South, the Consols, and several others.

The question of the condition imposed on the Waihi residence-site licenses has been gone into, and I hope satisfactorily arranged. Licenses now issued are unconditional, excepting where mine-managers and owners can satisfy the Warden the ground will be required for mining purposes.

Te Aroha.—Very little definite work has yet been done in this district, though of late there is much promise of great things. All available land has been taken up, but the highly refractory nature of the ore hinders progress. A new process, for which the highest results are confidently claimed, is about to have Te Aroha as its place of inception—the thermo-hyperphoric treatment, as developed by the Rev. J. Campbell and Mr. A. A. Lockwood. Experiments in this and neighbouring colonies, and more recently in England, have shown highly satisfactory results obtained by the ore being first treated to a carbon-roast, and then, while hermetically sealed down, to have water-gas injected. An influential company has taken the matter up, two special claims—the Montezuma and the Mount Morgan, close to the town—have been acquired, and just beyond the north-east corner of the township land has been secured for the erection of necessary plant, under the personal supervision of Mr. Campbell. Should the process prove anything like what is promised the gold-mining industry will be revolutionised, not only at Te Aroha but everywhere else.

At the Aroha Mines, at Waiorongomai, under the Exploration Company, work is at present mostly centred upon a large undertaking, a tunnel along the Big Reef, to be, when completed, two miles and a quarter in length, with a width of 8½ ft. and height of 11 ft., to take a tramway with locomotive. A high-level water-race is under construction, with a fall near the tunnel entrance of 630 ft., to drive an air-compressor for two drills.

Work is being pushed on on various other properties, amongst others the Inland Reefs, Tui, Waitara, Cadman, City of Durham, New Munster, Silver King, Great Western, Loyalty Palace, Mayflower, and Ethel Reefs. A large amount of machinery has been brought on to the Ethel Reefs Claim, but owing to discouraging reports it is at present all stored pending further developments.

COROMANDEL.

Commencing at Kauri Block, Coromandel, on which the following mines are situated—the Hauraki, Golden Pah, Welcome Find, Hauraki South, Hauraki No. 2, Zealandia, Bunker's Hill, Hauraki Main Lodes—an immense deal of work has been done.

The Hauraki returns of gold, which for so long averaged 2,000 oz. per month, have for the last few months gone down to a little over 1,000 oz. per month. The Hauraki Company during the last twelve months subdivided its special claim and formed a new company to work the other part named the Golden Pah, which latter company is now erecting substantial machinery on the beach side of Kauri Block for the systematic development of the mine, and this company is sanguine of profitable returns eventually.

The Welcome Find Company has done good work, having a good mining plant for sinking and developing its mine. It is well situated, and has returned some good specimens during the year.

The Hauraki Main Lodes Company is erecting powerful machinery and plant for developing its Foreshore Special Claim, and is sanguine of success.

The Hauraki South Company is erecting machinery for sinking and opening up its mine, but nothing of importance has so far, I believe, been found.

The Zealandia Company has taken in other licensed holdings, and is going in for systematic working.

The Bunker's Hill Company has been in constant work sinking and opening up the mine, and has had some specimens, but nothing of very great value has yet turned up, though the company has great hopes of ultimately striking the famous Hauraki patch.

The Empress, Katie, All Nations, and other claims near the Pukemaūkuku, up Cadman's Gully, have done a good deal of prospecting, and found good and payable reefs; but there are no convenient means of crushing the ore.

The Kathleen Company has erected the most powerful and extensive pumping plant in this district, machinery that would do credit to any mining district in the world. This company's property is on freehold land, without the goldfields boundary.

The Kathleen Crown Company (mine adjoining) has erected machinery for sinking and opening up its ground.

Blagrove's Freehold, adjoining the Kathleen Crown, has extensive plant for sinking and opening up its mine, and lately some good specimens have been obtained from this mine.

The last three companies named are English ones.

The Hauraki North Company, owning a claim in Wynyardton, is working its mine, and the machinery erected for sinking and opening-up has done good work. This company has had a fair amount of specimens from its reef, which is considered a good one.

The Kapanga Company's mine, the oldest in the colony, found gold in payable quantities at a depth of 1,000 ft. a few months ago, and specimens at that, clearly showing that gold does exist in payable quantities at that depth. This is an important matter, and adds greatly to the prospects of the mines in the Hauraki Mining District.

The Scotty's Company's claim, to the north of the Kapanga special claim, is in full swing, and had a good find of specimens some few months ago. Extensive work has been carried on in this mine since the company took it over, and the prospects are very hopeful.

The Britannic Company's claim, to the east of Scotty's, has machinery erected for sinking, and is developing with good prospects. An amount of work and prospecting has been done on the claims surrounding—viz., the Harbour View, Harbour View Extended, Londonderry North, Ruby, New Tokatea, Pride of Tokatea, Great Kapanga, &c.

Tokatea.—The Tokatea and Royal Oak have done considerable work in opening up. These companies are going to reconstruct and amalgamate, and have very good prospects. Some good stone has been taken out during the year.

The Four-in-hand Company found good specimens some time ago, and its prospects are considered hopeful.

The Triumph Company has done a good deal of work, and erected a battery which is now ready for use.

The Queen of the North Company has also done some work, but nothing of importance has yet been found.

On Kennedy Bay side of the Tokatea Range the Bay View Company has a good reef, and something of great importance will yet be developed in this mine, from which good stone is at present being obtained. The prospects of the Evening Star and Morning Star claims are good, and a fair amount of work has been done.

Karaka No. 1 Block.—The Success Company has been at constant work. A useful battery has been erected, and is ready for use, and from all appearances the company has splendid prospects. The Southern Star Company has also been at work, and hopes are entertained that this (also an English Company) will be a success.

Cabbage Bay and Port Charles.—The owners of the mines in these localities have not discovered anything so far of any moment, though the Austral Reefs Company, at Cabbage Bay, has had some good prospects.

At *Tiki* a great deal of prospecting has been done. The Pukewhau and Progress Castle Rock Companies have discovered payable reefs, and the prospects are most satisfactory.

At *Manara* numbers of claims were pegged out, but I have heard of nothing important from that quarter lately.

At *Matarangi* things are very quiet. The Matarangi Company has a good battery.

At *Kuaotunu* the Kapai-Vermont Company has had good crushings of payable ore. The Try Fluke has also been pretty constantly at work in mine and battery.

The Irene and Great Mercury Companies have done considerable work prospecting; also the Jupiter, Invicta, Maoriland, and Waitaia.

At *Mahakirau* there are many special claims granted, but no rich finds have been made, though a great deal of prospecting has been done.

A very great want at Coromandel is that of a public quartz-crushing battery, where the mines could have tests crushed and properly treated, without the expense of sending the quartz all the way to the Thames or Auckland for treatment.

Having only taken over the district since March, I regret I have not that knowledge of it, especially of the remoter portions of it, which would enable me to furnish a more useful and interesting report for the past year. I hope, however, to become better acquainted with the district by next year, although it is a very large and straggling one. I may say that the time at my disposal for seeing the district—i.e., such parts of it as are not in the vicinity of the Court sitting-places—is very limited, owing to my Court engagements every month occupying three weeks of my time, and every third taking the whole month, and even then the Court sittings are not of the ordinary hours devoted, but from 10 a.m. and 9 a.m. till midnight. If these hours are not maintained the work would soon be in arrear. I simply mention this to show that myself and staff have little or no time on our hands to acquire as much information respecting the field as otherwise we might.

I have, &c.,

R. S. BUSH, Warden.

The Under-Secretary, Mines Department, Wellington.

No. 3.

Mr. Warden ALLEN to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,—

Blenheim, 6th April, 1897.

I have the honour to forward you herewith my annual returns for the goldfields under my charge.

I have nothing new to report to you concerning the districts under my charge. Those holding special claims and licensed holdings, as a rule, are apparently simply holding them for sale, no work having been done.

Many of the miners have left Cullen's Creek for Auckland and other districts, and unless some company takes up the flat with the intention of working it I see very little probability of any improvement in this district at present.

If miners and prospectors are not driven off the land by leasing and sale of known rich auriferous country, I have no hesitation in saying that the future prospects of the mining industry in Marlborough are extremely good.

The Under-Secretary, Mines Department, Wellington.

I have, &c.,

J. ALLEN, Warden.

No. 4.

Mr. Warden HEAPS to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,—

Nelson, 5th June, 1897.

I have the honour to forward herewith the annual returns for each of the subdistricts of that portion of the Karamea Mining District within my jurisdiction—viz., Nelson, Motueka, Takaka, and Collingwood—and to report generally thereon:—

NELSON.

There has been considerable stir in mining circles during the past year, and a considerable amount of prospecting has been done; but of actual mining done, and gold won, there is as yet nothing special to report. This subdistrict includes the Sherry, the Wangapeka, and the Baton.

MOTUEKA.

A considerable number of applications for special claims, licensed holdings, and mineral licenses have come before the Court during the past year, but of these only one—a licensed holding of 30 acres—has been finally dealt with. It is intended to work this claim, which consists of alluvial ground, by hydraulic sluicing, the water being brought from Lake Peel. The special claims applied for embrace an area of 700 acres, but have not yet been surveyed. The mineral licenses are to work deposits of asbestos, which are reported to be extensive and of superior quality; but here, again, progress has been delayed on account of the difficulty experienced in getting surveys made. The claims referred to above are all in the neighbourhood of the Mount Arthur table-land, which district I reported upon in detail under date 28th January last. A few miners have been at work on the Leslie River and about the Karamea Bend. I am gratified to find that since I reported as above quoted the track leading to the Mount Arthur table-land is being improved.

TAKAKA.

There has been a good deal of inquiry for mining properties during the year, but the returns show that not more than fifty miners have been at work, and no marked success has attended their efforts; wages, however, up to £3 per week have been earned.

COLLINGWOOD.

It is gratifying to be able to report unmistakable progress in this part of my district. There is evidence that not long hence this will become a busy mining centre and the home of other allied industries.

Since the 1st April, 1896, sixteen special claims or licensed holdings have been issued. This is the largest number ever issued here in any one year, and, in fact, beats the number ever held before at any one time. On the 31st March, 1896, the number held was eleven; on the 31st March, 1897, the number was twenty-seven. The licensees of most of the holdings recently granted are apparently very much in earnest about developing the properties they have acquired, and a deal of preliminary work has been done and money spent, leading up to larger and more active operations in the near future. Among these I may mention Messrs. Fell and Gilmer's properties at the Quartz Ranges and the Golden Gully, which is to be known as the "Collingwood Goldfields Company (Limited)"; also, John Tyler's holding at Coles's Creek, where a very promising reef is being opened up.

The Rocky River Hydraulic Sluicing Company have also commenced preliminary work; and it seems very probable that their plant will be laid and sluicing commenced before the end of the present year.

The Parapara Hydraulic Sluicing and Mining Company are working steadily at their claim, and it is generally believed with satisfactory results, but as they are at present sluicing on private property, I am unable to give the actual result, which you will notice is left blank in the return of registered mining claims, the company not having furnished the information.

A small decrease in the number of miners' rights issued has taken place during the year, and also in the number of mining applications made, the numbers being: Miners' rights—Collingwood, 134; Takaka, 50. Applications—Collingwood, 167. This is easily accounted for by the large number of miners required at Taitapu, West Wanganui, where at the present time fully a hundred are constantly employed in opening up the Taitapu Gold Estates Company's properties, on which a great amount of capital is being expended.

The Johnston's United Mining Company is at present at a standstill, they having obtained protection for all their properties, which expires on the 2nd July next.

The proclamation of the Aorere River as a sludge-channel is being anxiously waited for by a number of persons who intend to take up claims. When the declaration is made, this locality will become one of the most important in the district, as the river is known to be very rich in wash in many parts, and is eminently suitable for dredging.

Coal is being worked at Pakawau, and Taylor and Walker have recently been opening up their coal lease at Puponga.

In conclusion, I may mention that, so far as the Collingwood district is concerned, there are no unemployed. Not only has it found employment for its own population, but a large number of strangers have also found employment.

I have, &c.

WILSON HEAPS, Warden.

The Under-Secretary, Mines Department, Wellington.

No. 5.

Mr. Warden STRATFORD to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,—

Warden's Office, Westport, 18th June, 1897.

I beg to forward herewith goldfields statistics for the past year for the Buller division of my district.

With regard to the gold-mining operations being carried on in this part of the district, I find that there is but little to report upon.

The claims at Addison's and the Northern Terraces, in the immediate vicinity of Westport, which have been continuously worked for more than thirty years, are still giving profitable returns to the respective miners, and, judging from appearances, will continue to do so for many years to come.

A large number of special claims, licensed holdings, and other mining rights have been taken up at Westport during the past year, but, beyond prospecting, little actual work has been done in connection with most of the rights.

The General Exploration Company have a large number of men employed in preliminary works, and the Golden Sand Company are also preparing to work some large cement and black-sand areas at Addison's.

The Britannia Company have driven several prospecting tunnels at Stony Creek, in every one of which gold-bearing quartz has been found. This company is arranging with an English syndicate to work their special claim on an extensive scale.

The Great Republic Company have been engaged in prospecting, and constructing an aerial tramway, battery, and water-races, but crushing has not been started yet.

Some prospecting has been done on the quartz-field at Mokihinui, and auriferous stone has been found on several claims there.

Payable quartz has also been found at Cascade Creek, where two or more parties are engaged in driving prospecting tunnels.

A number of special claims have also been taken up at Karamea and Oparara to work alluvial deposits, and I am informed that prospects considered to be payable have been found on some of these areas.

I admit this is a meagre report, but as I only took charge of the district at the eleventh month of the year, I have been placed at a great disadvantage on that account.

I have, &c.,

H. A. STRATFORD, Warden.

The Under-Secretary, Mines Department, Wellington.

No. 6.

Mr. Warden STRATFORD to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,—

Warden's Office, Reefton, 4th June, 1897.

I have the honour to forward to you herewith statistical returns for the year ended 31st March last, and submit the following report on the Inangahua portion of the district under my charge for the same period.

In my last report I mentioned that the output for the then coming year would not be so large as the past year, for the reason that the Globe, Progress, and Wealth of Nations Mines, the properties of the Consolidated Goldfields of New Zealand, would not crush stone to any extent, as the company intended devoting all their energies in development works. Results have borne out the correctness of my anticipations.

From the opening of the district up to 31st March last, 684,019 tons of quartz has been crushed, from which 484,393 oz. of gold has been obtained, representing a value of £1,894,792, out of which sum £593,418 has been distributed in dividends. The total amount of alluvial gold raised for the same period is approximately estimated at 131,672 oz., representing a value of £488,016. The total gold-production of the district is, as far as can be ascertained, 616,064 oz., of a value of £2,382,808.

The following table will show the calls made, dividends declared, &c., by the various companies in the district during the year:—

LIST of DIVIDENDS declared, CALLS made, &c., by various Companies.

Company.	Calls made.			Dividends declared.	Quartz crushed.	Yield of Gold.	Value.		
	£	s.	d.	£	Tons.	Oz. dwt. gr.	£	s.	d.
Globe and Progress ...	...	...	...	...	4,830	2,305 10 4	9,342	16	6
Wealth of Nations ...	...	...	...	...	1,095	259 15 8	1,034	9	1
Golden Fleece ...	...	...	...	...	130	38 2 4	152	11	10
Royal ...	...	...	...	...	158	128 0 0	518	8	0
Cumberland ...	1,200	0	0	...	125	127 16 0	519	3	9
Dillon Extended ...	2,333	6	8	...	90	52 3 0	201	16	3
Success ...	100	0	0	...	...	...	...	...	...
Exchange ...	500	0	0	...	...	...	...	...	...
Inkerman Combined ...	...	...	...	...	60	26 13 0	101	17	4
Inglewood Extended ...	200	0	0	...	...	...	...	...	...
Keep-It-Dark ...	...	...	...	3,000	2,550	2,264 0 0	9,169	0	0
No. 2 South Keep-It-Dark ...	1,000	0	0	...	...	...	...	...	...
Big River ...	...	...	...	1,800	2,000	1,983 10 0	8,030	19	0
Lord Edward ...	600	0	0	...	...	...	...	...	...
Golden Treasure ...	600	0	0	...	...	...	...	...	...
A1 ...	...	...	...	100	48	293 0 0	1,190	14	3
Hercules... ..	1,000	0	0	...	796	306 7 14	1,224	2	9
Golden Lead ...	1,500	0	0	...	*...	8 2 1	31	10	1
Private Companies—									
Victoria ...	...	...	...	...	235	105 15 0	423	0	0
Sir F. Drake ...	...	...	...	...	1,150	447 4 13	1,806	14	3
" ...	...	...	...	...	† 3½	19 6 0	77	4	0
Alluvial ...	9,033	6	8	4,900	13,270½	8,365 4 20	33,824	7	1
	...	...	...	...	...	4,129 5 21	16,134	5	4
Totals ...	...	...	...	...	...	12,494 10 17	49,958	12	5

I submit for your information the following account of the work done by the principal mines in the district during the past twelve months, and some indications of future operations :—

MURRAY CREEK AND CRUSHINGTON.

Keep-It-Dark.—During the first half of the year work in the mine was retarded on account of the heavy landslip which occurred at the end of the previous year. Besides the labour and expense of clearing away the *débris*, new poppet-heads had to be erected, and an engine placed in position for winding. The stone has been stoped out up to No. 5 level. Just a few feet below No. 5 level the reef made a flat bench, and went about 30 ft into the footwall, almost horizontally. At the present time it is being opened out above No. 5 level. The winze from No. 6 level has been sunk to a depth of 130 ft. on stone. The inside winding-shaft has been sunk 130 ft. below No. 6 chamber. No. 7 level is now being driven to connect with winze 180 ft. distant. A new water-wheel for winding has been erected. The head-race has been thoroughly repaired. In a short time the company will be in a position to greatly increase their output. During the year 2,550 tons of stone has been crushed, for a yield of 2,264 oz. of gold, valued at £9,169, out of which £3,000 has been paid to shareholders in dividends. The total output of the mine is 120,299 tons of quartz, which yielded 64,713 oz. of gold valued at £252,620, out of which dividends have been disbursed to the extent of £113,416 13s. 4d., which is equal to £5 13s. 5d. per share. The called-up capital amounts to only £6,208 6s. 8d., or 6s. 2½d. per share.

Hercules.—At the date of my last report No. 9 level had then been driven south 330 ft. During the past year this level has been continued for 289 ft., making the total distance driven in No. 9 south from main shaft 619 ft. The reef which was proved in the winze sunk from No. 8 not having been intersected at this point in No. 9, a rise was carried up for 98 ft., and a connection made with this winze. An intermediate level was then driven south on stone at top of rise, and the reef from this point up to No. 8 level stoped out. 796 tons of quartz was crushed, and yielded 306 oz. 7 dwt. 14 gr. melted gold, valued at £1,224 2s. 9d. Two prospecting cross-cuts were then driven in on the western side of No. 9 level, without any profitable results. A prospecting winze is now being sunk from the floor of this level, and is down about 25 ft. on reef track. A considerable amount of prospecting work was also done on No. 7 level to the north. This drive was extended over 100 ft. further on the track of stone, and a rise carried up for 45 ft., but indications were not favourable for its continuance. A crosscut has been started at No. 9 level from main shaft, and is now being pushed on. It is in about 160 ft., and being driven due east. It is intended to extend it 300 ft. or 400 ft. further, with the view of proving if a parallel line of reef exists east of that now being worked. Should this enterprise meet with success it will open up virgin ground, and give new life to the company, besides encouraging adjoining claims to prospect in a similar manner.

* Tailings.

† Concentrates.

No. 2 South Keep-It-Dark.—During the year No. 3 level has been extended 300 ft. south along the line of reef without anything of a payable nature being discovered. This level is now about 500 ft. in from the shaft. Driving has for the present been stopped, and a rise is being put up above the level on the north-east end of the claim. There is a small well-defined reef about 10 in. thick, and gold-bearing, in the rise, and present indications lead to the belief that it will widen out. The directors contemplate driving a cross-cut to the westward from the bottom level underneath the Inangahua level. There has been a proposal to amalgamate this and the Hercules Company, and so form one strong company, and thoroughly prospect the mines at deeper levels. The prospecting of the two mines could then be much more cheaply carried out.

Wealth of Nations.—This claim is one of the properties purchased by the Consolidated Goldfields of New Zealand, and is the chief mine of what is known as the Wealth of Nations group, which comprises the Wealth of Nations, Energetic, and portions of the Gladstone, Beaconsfield, and Undaunted. The work on this property has been purely of a developmental character. The battery level has been extended 380 ft., and a connection made with the old workings in the Energetic Mine, which were successfully tapped, there being 150 ft. of water in them. The 200 ft. level has been driven 330 ft., and a cross-cut 177 ft. The 350 ft. level has been driven 100 ft., and a cross-cut 30 ft. The 500 ft. level has been driven 242 ft. and a cross-cut 40 ft. A winze has been sunk 130 ft. from No. 5 level on ore, and 60 ft. have been driven from the bottom of the winze. A new incline shaft has been sunk 344 ft. for the purpose of working the ore at the lower levels. Altogether, 1,928 ft. of driving, &c., has been done during the year, besides repairing and reopening 1,840 ft. of old levels. Forty men were employed in the mine at the end of March.

Inangahua Low-level Tunnel.—The properties known as the Golden Fleece, Royal, Salisbury, Juno, and portions of the Gladstone, Beaconsfield, and Undaunted are now held in conjunction with the Inangahua Low-level Tunnel Company, from which in the future all will be worked. A boiler and air-compressor to work the rock-drills have been installed, and also an air-winch for hauling. Good progress has been made in pushing ahead the tunnel, 380 ft. of old workings having been reopened, and the tunnel extended 1,089 ft. during the year, the face now being in 3,989 ft. In the Golden Fleece and Royal 964 ft. of driving and cross-cutting has been done. A winze is being sunk from the lowest workings in the Golden Fleece to connect with the main low-level tunnel, and it is now down 145 ft. This tunnel will be 800 ft. below the lowest workings in the Venus, 654 ft. below those in the Golden Fleece, and 886 ft. below those in the Royal.

BIG RIVER.

Big River.—During the last twelve months the shaft has been sunk 150 ft., making a total depth of 932 ft. from the surface. From this level a cross-cut is being driven, which at present is 200 ft. in, to intersect the reef, which, it is expected, will be reached in another 50 ft. A winze has been sunk from this level (No. 5) 90 ft. on stone. A reef was discovered last October on the surface showing gold. A level to cut this reef at a depth of 70 ft. was driven, and a connection made with the surface by rising. The company are at present unable to crush, owing to their race and a good many chains of fluming having been destroyed by floods. It will cost about £300 to repair the damage. During the year 2,000 tons of stone has been crushed, for a yield of 1,983 oz. of gold, valued at £8,030 19s., out of which shareholders have received £1,800 in dividends. The total output of the mine is 13,979 tons of quartz, which yielded 19,317 oz. of gold of the value of £77,760 13s. 8d., from which dividends to the extent of £40,500 have been declared.

DEVIL'S CREEK.

Progress Mines of New Zealand.—This is a company recently floated in England by the Consolidated Goldfields of New Zealand. There are 250,000 shares in the company, with a working capital of £50,000. This mine comprises the following claims—viz.: Globe, Progress, Progressive, Rose, Wedge, Ballance, Larnach, Carroll, and Deep, which contain about 740 acres of ground. In the property formerly known as the Progress the following work has been done during the year: No. 5 level has been extended 99 ft. south, and 225 ft. of cross-cut has been driven. In No. 2 level an uprise of 122 ft. was made to prove what was known as the Dam Block. The level was extended 91 ft., and a cross-cut of 62 ft. driven. From No. 1 level a cross-cut was driven 115 ft. to connect with the new shaft now being sunk to work this and adjoining properties, and a chamber 26 ft. by 13 ft. by 10 ft. has been cut out. In the old Globe Mine the work done has been of a considerable magnitude. No. 4 level has been driven east 286 ft., west 154 ft., and south 106 ft. Bodies of ore have been developed in the east and west drives. The stone in the east drive is the same body of stone previously worked in No. 3 level, but that in the west is not supposed to have any connection with any previously known ore. No. 5 level has been driven 263 ft. east and 231 ft. west. The eastern drive has been on stone the whole distance, with the exception of 30 ft., whilst 80 ft. was on stone in western drive. From the western drive a cross-cut of 11 ft. was put in, a winze sunk 58 ft., and an uprise of 45 ft. was taken up, all being on ore. A winze has been sunk on stone for a depth of 158 ft. from the intermediate level below No. 5. The intermediate level below No. 5 has been driven 34 ft., from which an uprise of 12 ft. was made, and a cross-cut was driven therefrom 11 ft. to the South Reef. No. 6 level has been extended 253 ft. east, and 368 ft. west, and the following cross-cuts have been put in, viz.: No. 1, 44 ft.; No. 2, 32 ft.; No. 3, 16 ft.; No. 4, 27 ft.; No. 5, 22 ft., all being driven south. No. 1 north, 18 ft., and No. 2, 9 ft. All these workings are chiefly on stone. In the south-east a rise has been taken up 78 ft., and in the west another of 206 ft. In the west a winze has been sunk 125 ft. A cross-cut from the bottom of this winze has been driven 32 ft. All these workings are in ore. A cross-cut is now being driven from No. 6 level to connect with the new shaft, and the drive is now in 145 ft. The new main shaft, which measures 13 ft. 2 in. by 6 ft. 2 in. in the clear, and is in three compartments, was started in November last, and was down 625 ft. on the 2nd May ultimo. The company are bringing in a water-race 10½ miles to work

the new crushing-mill. Two miles and a half of the race has been finished, and a contract has been let to complete the remainder. The site for the new forty-stamp mill has been cleared and graded, and the foundation-walls erected. The line for the new aerial tramway has been cleared. Some of the new machinery has arrived, and the balance will be here shortly, and the erection is now being proceeded with. It will take some six or eight months yet to complete the construction of the race and the erection of the works; in the meantime, however, development works will still be carried on, so that when the company is ready to crush this mine will be by far the best opened up and appointed mine in this district. On the 31st March last 177 men were employed in the mine.

PAINKILLER.

Dillon Extended.—This is a new company, formed for the purpose of taking over and developing the mines previously held by the Sir Charles Russell and Dillon Companies. The liability taken over at starting was rather a heavy one, and consequently little has been done beyond making calls to liquidate it. With the object of securing better ventilation and allowing of the better development of the mine, No. 2 level was driven ahead south and connection made with the old Dillon winze, sunk from the surface at a point which was formerly on the boundary-line dividing the two claims. In the low level, which is in 1,300 ft., an extension of 176 ft. from the main pass is being made south to connect with Lawrie's winze, sunk on stone from the intermediate level. There is a well-defined track in good looking country showing in the face, and it is in this direction that future operations will be carried on to develop the property. A small crushing of 90 tons from the old Dillon winze and surface level gave a return of 52 oz. 3 dwt. of retorted gold.

LARRY'S CREEK.

Caledonia and Rosebery.—Owing to the want of a dray-road to this locality the company is unable to take up the necessary winding and other machinery, and consequently no work has been done on this property during the year, and perforce the claim must remain idle until the road is completed. The Inangahua County Council have this road now under consideration.

BOATMAN'S.

Welcome.—Under this name will be worked the Welcome, Fiery Cross, Seddon, and Cadman Claims. The chief work in this mine for the year has been the repairing and reopening of 1,218 ft. of old levels and winzes, with the addition of 496 ft. of fresh driving and cross-cutting. Some very fair stone was recently struck in No. 5 level, but much cannot be said at present concerning it.

MERRIJIGS.

Cumberland.—The operations carried on during the past twelve months in connection with this company's property have chiefly been of a prospecting character. Work, however, has not been altogether continuous, as the mine was idle for a time. Operations up to the interval consisted of the extension of main drive, sinking winze, and cross-cutting; but, although a good show of stone was met with in different places, it proved to be only of a low-grade quality. Future development, however, may lead to the discovery of a continuation of the same high-class stone worked in previous years. Only one crushing took place during the year, a parcel of 125 tons from over the winding level, yielding 127 oz. 16 dwt. of retorted gold. Some repairs and retimbering throughout the mine being necessary, nothing more will be done pending their completion; but after that operations will be extended to prospecting for and, if possible, tracing a continuation of the stone above the winding-level.

Sir Francis Drake.—This mine is now owned and worked by a party of miners, who during the past year raised 1,150 tons of stone, which yielded 447 oz. 4 dwt. 13 gr. melted gold, of the value of £1,806 14s. 3d. The mining operations have been confined to work stone between level at bottom of main shaft and the brace, and lately between what is known as the "smithy" level of the surface. Stopping on the reef from main shaft low level was carried up for 130 ft., and a connection has just been made with the "smithy" or "brace" level by means of a winze 70 ft. deep. The battery is now reducing quartz which is now being stoped above the "smithy" level. The reef is from 4 ft. to 6 ft. wide, and is of good quality. The result of the year's operations has been very profitable, and has enabled the party to complete some extensive repairs to the engine boiler at the battery; in addition to which one of the mortar-boxes for crushing, which had been damaged, has been replaced with a new one. All the appliances at the mine and battery are in a thorough state of efficiency. It is proposed to shortly commence development work to open up deeper levels. A winze has been sunk from the main shaft low level to a depth of 30 ft. on the reef, which is from 3 ft. to 4 ft. wide, and of payable quality.

Golden Lead.—The driving of the low-level tunnel has been steadily proceeded with. The tunnel is being driven through very hard country, and a large quantity of water is continually flowing from the face. These drawbacks render the work slow and expensive. It is anticipated that when the tunnel has been extended another 200 ft. it will drain the whole of the hill above the tunnel-level, which will facilitate and cheapen prospecting.

Inkerman Combined Mines.—This is a new company, floated some little time ago in England by the New Zealand Consolidated (Limited) (as distinguished from the Consolidated Goldfields of New Zealand). The Inkerman Company has a working capital of £25,000. The property consists of the mines formerly held by the Inkerman, Rainy Creek, Supreme, and other ground, all of which had been abandoned, but were taken up again by local people soon after Mr. David Ziman commenced operations here. Under the management of Mr. George T. Dickson work has been vigorously pushed on. Necessarily a very large amount of dead work has been done in effecting repairs to machinery and in reopening old workings. In what was known as the old Inkerman

claim the low-level tunnel has been picked up and retimbered for 1,000 ft., and that tunnel is now being extended. Sinking has been resumed in the new Inkerman shaft, and a tunnel is now being driven from the Rainy Creek side to connect with the bottom of this shaft. This tunnel will be about 4,000 ft. in length, to expediate the driving of which rock-drills are being used. The company is driving for the Supreme reef, and the tunnel is now in 380 ft. Seventy men are employed by the company.

GENERAL.

The very highest credit is due to the efficient staff of the Consolidated Goldfields of New Zealand for the expeditious and substantial manner in which all the works under their charge have been carried out. At the Inangahua low-level tunnel, the tunnel is being pushed ahead at the rate of about 40 ft. per week. When the company took this tunnel over it had been driven about 2,800 ft., which had occupied the old company some eight or nine years, working spasmodically, and with hand-drills. The new company, with rock-drills, have driven 1,089 ft.—a marked contrast, indeed, to the old style. The work done at the Progress Mines is surprising. They have driven 3,931 ft. during the year, re-opened 1,450 ft. of old workings, and, between 11th November last and 2nd May, sunk their main shaft (which is 13 ft. 2 in. by 6 ft. 2 in. in the clear) 625 ft., which establishes a record in this district at least, if not in the colony, and at the present time the shaft is being sunk at the rate of 90 ft. a month. The advent of the Consolidated Goldfields of New Zealand has brought about a very material improvement in the prospects of this district, and this improvement is aided by the New Zealand Consolidated Company.

Towards the end of last year Mr. William Kirwan was sent out prospecting by a Reefton syndicate. He commenced prospecting in hitherto untried ground, about four miles south-east (as the crow flies) from the Boatman's workings, and known as the Victoria Range. He was soon rewarded by finding rich boulders on the surface. It is estimated that there are from 200 to 300 tons of stone exposed on the surface that would yield 3 oz. to the ton. Four special claims, containing about 185 acres, have been granted to the prospectors. On one of these—the Lord Brassey—a tunnel has been driven at a depth of 70 ft. below the surface, to endeavour to find the reef from which these boulders came, but, so far, the reef has not been found. On another claim belonging to the syndicate—viz., Earl Brassey—what is supposed to be a payable reef has been found, but nothing definite can be said concerning it at present. The whole of the prospectors' property is now under offer to the Anglo-Continental Syndicate, of which Mr. H. A. Gordon, late of the Mines Department, is the New Zealand representative. The offer is for twelve months from the 1st October next, the purchaser paying a deposit of £1,000, and to spend £200 per month in prospecting. If the syndicate purchase the property at the end of twelve months, the price to be paid will be £32,000 in cash and £32,000 in paid-up shares. The new company will comprise 280,000 shares at £1 each, with a working capital of £30,000, and £30,000 in reserve shares. There was considerable excitement occasioned by the find, and a large number of claims were applied for. Six special claims, containing 243 acres, and twenty-two licensed holdings, containing 587 acres, have been granted. Much time has been lost owing to litigation in connection with a number of applications, and little or no work can be done until after the winter.

As a lot of development work still remains to be done in a number of the mines before crushing can commence, I do not anticipate that the yield of gold for the current year will show much, if any, improvement on the past year.

In conclusion, I have to thank managers of companies for much information kindly given.

I have, &c.,

H. A. STRATFORD, Warden.

The Under-Secretary, Mines Department, Wellington.

No. 7.

Mr. Warden STRATFORD to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,—

Warden's Office, Greymouth, 5th June, 1897.

I have the honour to forward herewith the statistical returns, and to report upon the district under my charge. The report and returns for the Buller and Inangahua divisions will be sent separately.

Greymouth.—As in other parts of my district, a considerable number of licensed holdings and special claims have been taken up during the past year. In the locality of Rutherglen, near Greymouth, the intention apparently is to work the old beach leads, which are composed of cement-beds from 4 ft. to 10 ft. deep, consisting of black sand cemented with oxide of iron, said to be carrying good gold. In the early days this ground, wrought by most primitive methods, driven out, burned with open wood fires, and crushed with wood mauls—yielded £20 per week per man, and it is confidently hoped that with a good supply of water and improved system of working profitable results will be obtained. On the South Beach, also near Greymouth, several special claims have been granted. The ground is of comparatively recent formation, containing free fine gold in layers of black sand. Some of it has, in places, been worked to a depth of 28 ft. The Leviathan Claim is a good example. This claim has been in constant work for twenty years, and has paid about £4 per week per man.

At *Barrytown* there is a large area of auriferous sand similar in character to that of South Beach, but far more swampy and difficult to work. The swamps, which are situate just inside of the beach mound, prospect very well, and gold is obtained from the roots of the grass to a known depth of 20 ft. It is intended to work the ground by means of hydraulic elevators. The Barrytown Flat Gold-mining Company, recently floated in Ashburton with a capital of £20,000, are now engaged in bringing in a race from Baker's Creek to work their property. The capacity of the

race is thirty-five heads, and the siphon will deliver the water at the claim under a pressure of 600 ft. It is intended to work the claim continuously in eight-hour shifts, and an electric-light installation will be effected to enable this mode of working to be carried out.

The Inverness Gold-mining Company are having a race surveyed from Deadman's Creek, in this vicinity, with a capacity of 100 heads and a pressure of 500 ft., to work their special claim of 100 acres. Near Barrytown there are several terrace sluicing-claims, chiefly formed of angular glacial drifts, containing payable gold. These claims have been worked for years, paying wages. A plentiful supply of water should render them remunerative.

The miners generally in this portion of my district appear to be doing better than in former years; the number of men on the field has increased, and a much more hopeful tone prevails.

At *Coal Creek*, north of Greymouth, Gifford and party have taken up a licensed holding of 20 acres of alluvial sluicing-ground, worked by means of a small head-race from Fiji Creek, and it promises to pay wages.

At *Maori Gully* there are about one hundred and forty Europeans and one hundred Chinese at work, earning bare wages. The proposal referred to in my last report to form an association for prospecting purposes unfortunately fell through, and I have nothing new to relate. The population remains about the same.

QUARTZ-MINING.

On that portion of the Paparoa Range known as Langdon's a number of special claims have been taken up since my last report. The field is not new, large sums of money having been spent in the locality fifteen years ago, but nothing payable was then found. Curtis Brothers, the owners of the Victory Mine, have continued stoping in No. 1 level, and have six men employed. They have been sinking a winze in the same level, and have reached a depth of 93 ft. They have also driven a distance of 260 ft. in low level to cut the reef. The number of tons of quartz crushed has been 258, and the yield of gold from the same has been 745 oz. 2 dwts. The gold is valued at £4 1s. 2d. per ounce.

In the Julian Claim the owners have crushed 12½ tons of stone, yielding 1 oz. 5½ dwts. to the ton.

Gold has recently been found in the Kanui, Paparoa, and other claims, but they are not sufficiently developed to allow an opinion to be expressed as to their merits.

COAL-MINING AND TIMBER.

The Greymouth-Point Elizabeth Railway and Coal Company have completed over three miles of their railway formation work from Greymouth to their mine at Seven-mile, and it is estimated that it will take another five months to complete the same. The bridge over the Grey River connecting the company's line with Greymouth was put in hand in May last, but delays in the delivery of ironbark piles prevented the commencement of actual operations until October. The flood of the 9th March last caused the company considerable loss, the whole of their pile-driving plant and 150 ft. of staging having been swept down the river. The permanent piers, however, successfully stood the test of the flood, which was the heaviest on record but one—viz., that of 1887. The company hope to have the bridge completed in August. Although active operations are not yet commenced in the Coal Creek mine itself, extensive surface surveys have been made, and a number of miners are engaged in preliminary work. This company still draws its supply of coal from the Brunner mines, which continue in active operation, the output for the year being 90,155 tons.

Blackball Company.—The output of coal from this company's mine during the year has been about 49,000 tons; the partial destruction of their aerial tramway during the big flood having delayed operations.

Timber.—I am pleased to say the export of timber from Greymouth has largely increased. During the past year the following quantities have been shipped: New Zealand ports, 6,461,786 ft.; foreign ports, 2,492,270 ft.: total, 8,954,056 ft. In addition to this quantity, 69,157 sleepers (1,607,900 ft.) have been exported.

Return of cases disposed of in the Magistrate's and Warden's Courts at Greymouth for the year ending the 31st March, 1897: Civil, 179; criminal, 258; Warden's, 18.

The revenue for the year amounted to £2,600 4s. 8d., made up as follows: Warden's department, £2,347 2s. 8d.; Magistrate's department, £203 5s.; licensing fees, £49 17s.: total, £2,600 4s. 8d.

Particulars of revenue collected in the Warden's Court, Greymouth, for the year ending 31st March, 1897:—

	£	s.	d.
Miners' rights	368	11	0
Water-races	30	12	6
Registrations	25	0	0
Rents	1,191	10	6
Fees and fines	15	9	0
Miscellaneous	715	19	8
	£2,347	2	8

Number of applications lodged during the above-named period, 389.

AHAURA DIVISION.

Blackball.—The population of this district has increased during the last twelve months, and mining generally in the locality has been active. Fifty-five special claims have been granted during the year, but beyond the applicants paying the first half year's rent, doing a little

prospecting, and causing a considerable increase in the mining population, I cannot say that much has been done to develop the reefs. The Cresus claim is the most favourably spoken of. This property has recently been taken over by a limited liability company, with a capital of £37,500, in 60,000 shares of 12s. 6d. each. The work done at present consists of a winze sunk to a depth of 90 ft. from the surface, on a reef 3 ft. in width, which is reported to show gold freely. The reef has been trenched upon for 600 ft., and a low-level has been started to strike it at a greater depth. Arrangements have been made to provide capital to equip a battery of ten heads, and to erect an aerial tram a mile and a half in length, to convey the quartz from the mine to the battery. Eight men are at present employed, and the company expect shortly to increase that number to thirty.

With regard to "alluvial," this portion of the district maintains about its usual average.

Moonlight.—The population of this subdivision, which includes Healey's Gully, has also considerably increased. Along the slope of the Paparoa Mountains, from the head of Moonlight to Blackball, a large area of alluvial ground is known to exist, but, unfortunately, the difficulty of obtaining and carrying a supply of water at a sufficiently high level to command the ground is a great drawback. At Healey's Gully the Republic Company hold a special claim of 35 acres, and, at considerable expense, has brought in a race capable of carrying 40 Government heads of water. I understand the prospects of this claim are favourable, but it is not yet sufficiently developed to enable me to give an authoritative opinion. About forty men are employed on the field.

Granville, Duffer's, and Noble's Creeks.—There have been no new finds during the past twelve months, and the mining population remains stationary. Judging from appearances, the miners seem contented and satisfied with their earnings. Some are engaged tunnelling and others sluicing.

Orwell Creek.—Here also the population remains about the same, most of the miners being engaged tunnelling. The scarcity of water precludes sluicing to any extent, although it is well known that large areas of payable ground exist.

Ahaura.—The claims on the north bank of the Ahaura River prove to be remunerative, and are now in full work—*i.e.*, so far as the limited supply of water from Orwell Creek will permit. Great hopes were entertained that the construction of the Randall Creek Water-race to Napoleon Hill would put a considerable body of water into Orwell Creek, and thus enable the river-banks to be worked; but the scheme has for the present been abandoned, owing, it is said, to the depression on the London market and the very large sum required.

Nelson Creek.—This subdivision continues to support about ninety miners, who seem to be as well off as in any other portion of my district. A small rush set in on a terrace north of Try Again, and some of the claims opened are giving fair wages. The sluicing claims of Donnellan and Larkin are still in operation, and appear likely to last for a number of years.

No Town.—This place, like Nelson Creek, employs more miners sluicing than tunnelling. The creeks carry a fair supply of available water. The claims opened out at Cronin's Terrace, Sunday Creek, are still in work. The terrace, however, shows signs of exhaustion, and unless new ground is opened to the northward will soon be worked out. The terraces in this locality and towards Nelson Creek offer strong inducement to miners for prospecting.

Revenue received at Ahaura for the period ending 31st March, 1897:—

	£	s.	d.
Miners' rights	322	0	0
Water-races	30	5	0
Registrations	43	10	0
Fees and fines	7	5	0
Rents	766	11	0
Miscellaneous	121	8	6

£1,290 19 6

During the year there were lodged six hundred and sixty ordinary applications, fifty-three applications for special claims, two applications for licensed holdings, and nineteen residence site licenses were issued.

I have, &c.,

H. A. STRATFORD, Warden.

No. 8.

Mr. Warden MACFARLANE to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,—

Hokitika, Westland, 21st May, 1897.

I have the honour to forward herewith the mining statistics for the year ending 31st March, 1897, together with the annual report on mining matters in the portion of the mining district of Westland, at present in my charge.

HOKITIKA.

No new discoveries of importance have been made during the year, but the gold won from the various claims at work has given about the same returns as the previous year, the increase being so small as to very slightly affect the general returns. A considerable number of men are at work in the back gullies, whose earnings it is not easy to ascertain, but I presume they manage to make something more than a living. Many of our old miners, although only making a bare living, prefer their independence to working for wages. A number of the claims in Back Creek and Seddon's Terrace continue to give handsome returns, and the same may be said of Craig's and the University Reserve Claim, as also claims in the same line to the north. A considerable

amount of work is being done on what may be termed the southern extension of this old beach deposit by McBeth and party on the Shanghai Lead, and by Phillips and party near the entrance to Lake Mahinapua, where they purpose putting on a powerful steam dredge to work the ground near the outlet of the lake, where fairly good prospects have been obtained, and if the lead can be picked up no doubt success will attend the venture. To the south and east of Ogilvie's the Rimu Miners' Association have a party out prospecting on the terraces, but nothing payable has so far been found.

At Blue Spur and neighbourhood fairly good returns are being obtained, especially in the Arahura Fall, but considerable expense has to be incurred in bringing up drainage tunnels to drain the ground before the drifts can be profitably worked. In cases such as Dwyer and party, where such tunnel will be a public benefit, the Government are assisting by subsidy.

Humphrey's Gully Company: The operations of this company have for the last year been merely tentative, but now having possibly satisfied themselves by careful and exhaustive prospecting of the value of their various claims, they are, in addition to other work, proceeding vigorously with the survey of a new race, as well as an extension of the old one, and no doubt a large number of men will be employed in race-construction at an early date. Everything points to extensive mining operations being initiated during the coming spring and summer by this company.

The Kanieri Lake Water-race Company are gradually extending their operations, and they anticipate being able shortly to have water running in the whole of the old race, when a much-needed water-supply would be available for Constitution, Tucker, and Kanieri Flats.

Some time ago Messrs. Grimmond, McKay, and Davey secured a second valuable water-right out of Lake Kanieri, with the intention of supplying a long-felt want on Back Creek and Seddon's Terrace. In the early part of the year the Mining League had a reconnaissance survey made, to determine whether the water in the lake was high enough for Back Creek and Seddon's Terrace. The report was adverse to the undertaking, and so the scheme was dropped by the League. Later on the matter was taken up by Grimmond and party, who, after securing the water-rights, had a careful survey made, shortening the line by some two miles. The levels have been carefully checked by Mr. Lord, C.E., of Greymouth, as also the estimated cost, and the whole scheme appears to be a practical solution of a water-supply for Back Creek and Seddon's Terrace. The estimated cost is considerable (£55,000 to £60,000), owing to the fact that the valley of the Hokitika will require to be crossed by an inverted siphon and the river by a substantial bridge. The promoters are quite satisfied that this water will command the terraces referred to, and have no doubt whatever about the payable nature of the ground, its extent, and the natural facilities for working it, seeing that there is over 160 ft. of fall for tailings into the Hokitika River, and a pressure of 140 ft. at the nozzle to work with. There can be no doubt as to the benefits that would accrue to those already on the field, and to others who are prepared to open up new claims whenever water is available. This goldfield is only one of many all along the west coast of the Middle Island that, with a plentiful supply of water, would carry thousands of men, who, by their labour, would enormously increase the output of gold and bring renewed prosperity to this part of the colony.

It is vain to expect that the enormous deposits of auriferous drifts that bulk so largely on the West Coast can ever be worked except by large combination and a large outlay of capital; so that where the Government is not prepared, or think it inadvisable, to undertake such works as water-supply to the goldfields, every encouragement should be given to parties willing to undertake the work.

Ross.

Mining matters in this district show no signs of revival. The excitement in connection with Cedar Creek reefs has all but died out, there being only one claim—the Alpha—doing any work, and that is merely of a prospecting character. I am informed this company purpose putting up a five-stamp battery, to practically test the reef in their claim. The reefing country about Constitution Hill and Donnelly's Creek gives sufficient indications of payable reefs to warrant further exploration expenditure. Mr. Antonio Zala and others deserve success for their persistent efforts to find payable reefs in this district. Some time ago an outcrop of mineral ore was uncovered on the northern face of Mount Rangitoto, and a number of claims were marked off and applied for. However, although the ore looked promising, the laboratory test showed only traces of gold, a few ounces of silver, combined with galena, iron, and gangue matter. Sinking on this lode might lead to better results. In hydraulic mining the Mont d'Or claim stands first, and continues to pay fair dividends; but for the purpose of enlarging their operations the company placed their property under option to an English syndicate, but, so far, nothing definite has been done.

The Ross United Gold-mining Company, one of the largest and most valuable mining properties on the Coast, is still endeavouring to raise additional capital to further develop their mine, and are sanguine of the result. The company has a number of men at work on tribute on Ross Flat, at the Prince of Wales, Donoughue's, where they have struck good gold under the level of the present workings, but they have a difficulty in keeping the water down. This company's property is on one of the few deep leads of the colony, the depth of the main shaft being 380ft., with doubtful bottom. In this shaft there are eight distinct layers of auriferous drifts, that, with proper appliances, will pay to work. The contents of the shaft taken out in sinking measured 1,620 cubic yards, and when washed gave 15cz. of gold, or equal to 8.4d. per yard. The chief difficulty the company has to contend with is the water met with from the old workings, and that met with at the different levels; and to enable them to overcome this additional capital is required, the company having expended the whole of their capital in endeavouring to develop and work their mine with defective and inadequate machinery—to provide a cheap motive-power for pumping, hoisting, haulage, and other purposes connected with the working of a mine of such magnitude. The Mikonui Water-race, commenced and partly constructed by the Government, was at the time looked upon as the cheapest and most reliable power to work Ross Flat with, and efforts have from time to time been made to get this

important work completed, but without success; and it is now a question whether a cheaper power is not obtainable. The unfinished portion of the Mikonui Race, about $10\frac{1}{2}$ miles, of which a mile and a half is tunnelling through very hard country, and the construction of headworks, &c., where the water is lifted, is estimated to cost £25,000 before the water can be brought on to the company's claims, and I am informed that motive-power more than equal to that obtainable from this race could be supplied for half the money. The steady advance in electrical science in the production of power, and the improvements in the machinery and the appliances for the transmission of power, points to this as the best and most economical method of working the deep leads on Ross Flat. There are several sources of water-supply within reasonable distance available for the purpose. Out of the 350 acres held by the company only about 8 acres have been worked, and a great portion of this only as far as the water would allow. I am certain the property will bear the most exhaustive examination, and the result will fully confirm all that has been said about the gold that has been and yet remains to be won by well-directed effort.

Having only recently taken charge of the Kumara, Goldsborough, and Stafford districts, I am unable from direct personal knowledge to say much in connection with the districts mentioned; but I am indebted to Mr. Aitken, water-race manager, Kumara, for his very interesting and valuable report on Kumara, Waimea, and a portion of the Stafford district, which I have embodied in my own. As regards Stafford, I have been furnished with the following particulars by Mr. Hennah, the Mining Registrar for the district, as also notes on the Taipo goldfield.

Stafford.—The most noteworthy feature in this part of the district is the claim, held by Mr. Batchelor, formerly known as the Wheel of Fortune. The present owner is said to have expended in purchasing and improvements some £4,000, but I have not been able to ascertain the returns of gold won during the time he has been at work—some two years. I understand he is now in England endeavouring to raise more capital, so as to enable him to carry on operations in a more wholesale manner. On the old back lead, at Auckland Beach, Black and party are opening up a new run of payable ground that may lead to more important results. Unfortunately, this lead is likely to run into private property, the whole of the terraces at the back of the beach having been parted with by the Crown.

The Taipo.—Active operations are being carried on at the Seven-mile Creek, where there are from forty to fifty men employed by a Christchurch syndicate in constructing a large water-race and other works in connection with a large hydraulic-sluicing claim held by them near the junction of the Seven-mile with the Taipo. I understand sufficient prospects were obtained before the company undertook the works they are now constructing to warrant them in going to this expense. Seeing this creek takes the drainage of Kelly's Range, where numerous outcrops of auriferous quartz are met with, there is every prospect of this venture paying well. A number of special claims have been applied for, and some granted, on Kelly's Range, as also a number of extended prospecting areas. Considerable prospecting has been done by Mr. Ziman's men and others, and it is reported that gold has been found in several of the outcrops showing on this range. Nothing payable has as yet been reported to the Warden from any of the prospecting areas, and the winter having now set in work will probably cease for a time unless stone has been found that would warrant tunnelling. From Kelly's Range in the north to Mount Harman at the head of Browning's Pass, near the Wilberforce, where there is an outcrop of payable stone, the country is practically unknown, only that the auriferous belt is unbroken between the two points. Next summer this block should command the careful attention of prospectors.

OKARITO AND JACKSON'S BAY.

Mining in the above-named districts show very little signs of improvement. On the sea-beaches some rich patches of surfacing have been worked during the year, one party netting over £300 for about a month's work. The wholesale working of the inner beach leads is still a matter awaiting the advent of capital, and improved methods of mining the gold that the individual miner cannot reach, but that would well repay properly-directed effort. A rush to the terraces above the forks of the Okarito River promised to open up an extensive field, but, so far, only two claims are on payable gold. The amount of prospecting done has been trifling. The most of those visiting the ground having claims on the Kellery—that can be worked only during the winter months when the river is low—returned to them, and, if the weather proves favourable, they expect to take out a considerable amount of gold during the winter months, and return to the terraces—which are a continuation of the Lake Mapourika terraces—in summer. On the north banks of the Waiho and Kellery two special claims have been granted to the Waiho Hydraulic Sluicing Company. They intend to work the terraces, commencing immediately below the mouth of the gorge of the Kellery. An ample supply of water—forty heads—has been secured by the company for hydraulic sluicing, and, as there will be no difficulty with the disposal of tailings, and seeing that they will have 200 ft. of pressure for the nozzles, and that fairly good prospects have been obtained in the terrace at various levels, there is every likelihood of this undertaking proving a success. If the company succeed in bringing in a larger supply of water than they require for their own use, they can easily dispose of it, as there is a large area on the Waiho River-flats that will pay handsomely for working as extended claims, and would mean a large increase to the population, and a distinct renewal of mining prosperity in the district. Some prospecting for quartz reefs has been done during the latter part of the year on the head-waters of the Kellery, but the party (McKay and Watson) have been driven back by the snow. They report crossing the mica-schist country forming the foot hills and the spurs of the main range, and passing into a good-looking slate-country, showing quartz reefs. In their explorations they appear to have reached a considerable altitude, but the lateness of the season did not admit of more than noting the outcrop and position of the reefs seen by them, and other natural features that will be of use to them in their further explora-

tion of this promising belt of auriferous country—the probable source of Kellery and Waiho gold. From the height of the country about the heads of the Kellery and Waiho, it is only approachable during the summer and autumn months with any chance of seeing bare country, so that nothing further can be done this season. Some small samples of stone were brought down, showing fine gold, so that a further and more extended examination may result in important discoveries.

Tourist Traffic.—Every year greater facilities are being afforded by the Government and the local bodies to tourists visiting Westland. The road from Lake Mapourika to the Waiho is being widened, and made fit for wheeled-traffic; and the bridle-track to the Franz Josef Glacier is now in good repair. Wire bridges have been thrown across both the Kellery and the Waiho, so that tourists wishing to visit this magnificent glacier will have no difficulty in getting there. The hot springs, a little lower down, are still in their natural state, without any convenience for taking advantage of their curative properties; but I understand the Government intend putting up, either at the springs or near the terminal face of the glacier, a house that may be used by parties visiting the Waiho, leaving visitors to find their own requirements. There being no hotel nearer than Lake Mapourika, it behoves those who intend visiting the springs or the glacier to provide themselves with all they require. No doubt when the dray-road is completed through from Ross there will be a large increase in the number of tourists, and this might warrant the expense of putting up a good hotel; in fact, a comfortable house to stay at would be a not unimportant means of inducing tourists and invalids to visit the glacier and the hot springs. Without it, one of the grandest sights in New Zealand is practically closed to the average comfort-loving tourist and invalid.

To the north of the Haast, on Sardine Terrace, a special claim of 100 acres has been granted to an Auckland syndicate. This claim is on one of the raised beaches characteristic of the West Coast, and is so situated as to offer great facilities for hydraulic sluicing, the tailings being discharged over the cliffs into the sea. This ground shows fair prospects; and I understand work will be commenced at an early date. To the south of Jackson's Bay very little is being done in mining. The Cascade and Big Bay country offer strong inducements to prospectors, and I have had several inquiries as to the means of getting there, and other particulars. No doubt important discoveries will yet be made in this district, but prospectors are heavily handicapped owing to the isolated position of this part of Westland and the uncertainty of communication. In this block, from the Greenstone Pass, at the head of the Hollyford to the Arawata, the geological mineral features disclosed present conditions of such an interesting and unique character as to warrant the most careful and extended examination of the various outcrops and auriferous terraces. A considerable amount has been expended on the Haast Pass track, and intercommunication is now comparatively easy. Other tracks are being extended for the convenience of the settlers and miners. An abortive attempt was made by a Greymouth company to reopen a valuable deposit of mica, said to have been found years ago, but after a considerable expenditure the work was given up. The search may possibly be renewed next summer.

KUMARA.

Although the yield of gold on the Kumara field has decidedly fallen off, there is still a large quantity being obtained, and the field will continue to yield a large amount of gold for many years to come. There is no doubt the best of the ground so far as at present known has been worked, and the number of really good claims now being worked is very few indeed. The area of ground on the field that will be sluiced away in the course of years is, however, very large, and, although it is comparatively poor, it will, with improved and more economical methods of sluicing, employ a large number of miners, and pay small wages for many years to come.

There are three main tail-races (sludge-channels) at present in work on the field. What was originally known as No. 1 main tail-race has been abandoned for the last seven years, as it was found to be too low for the economical discharge of tailings on the tailing site. No. 2 main tail-race has still four claims making use of it, and there is still an area of known auriferous ground that will take at least seven years to sluice away, commanded by the main tail-race. No. 3 main tail-race is used at present by ten claims, and the area of ground untouched commanded by this main tail-race will not all be sluiced away in ten years. Another party has obtained a right to sluice into No. 3, and their branch tail-race will be driven from the main tail-race to their claim at an early date. No. 4 main tail-race is used by three parties at present, but all of the parties are using large quantities of water—fourteen, fourteen, and twenty-four sluice-heads respectively, and they are in consequence sluicing away about twice the quantity of auriferous wash that the same number of claims washed away six years ago. Another party has driven a branch tail-race connecting No. 4 with their claim, and they will shortly begin sluicing into it. The area of ground commanded by this main tail-race will not be all worked for the next fifteen or twenty years. No. 5 main tail-race is not yet completed, as bad and difficult pug ground was unexpectedly met with in No. 1 section of the work, and the loose ground and large inflow of water was met with in No. 2 section. These difficulties have greatly retarded the progress of this important work. The total length of No. 5 main tail-race will be $62\frac{3}{4}$ chains, and of this $40\frac{1}{4}$ chains has been completed, and $22\frac{3}{4}$ chains has yet to be driven. No. 5 main tail-race will open up a very large area of auriferous ground, and, although the ground is not by any means rich, it will give employment to a large number of miners, and enable them to earn fair wages for the next twenty to twenty-five years.

The number of claims engaged in hydraulic sluicing on the Kumara field are: No. 2 main tail-race, four parties, thirteen men; No. 3 main tail-race, ten parties, thirty-nine men; No. 4 main tail-race, three parties, seventeen men; private tail-races, nine parties, forty men; parties preparing to sluice, three parties, seventeen men. Of the above-mentioned parties, twenty-one are using water from the Government race and five from private races. And of the three parties preparing to work, two will use water from the Government race and one from a private race.

WAIMEA.

The Waimea district still continues to give employment to a large number of miners, and although it has seen its best days, there is a fair hope of a considerable revival when the Waimea main tail-race and the Kelly's Terrace drainage tunnel are completed and working. The number of miners in the district has not decreased during the past year, and the yield of gold will compare favourably with recent years.

The driving of the Waimea Main Tail-race has been completed throughout its whole length—about 2,100 ft.—and the trustees are about to sink a shaft at the upper end of work to connect it with the surface in the large flat in the middle branch of the Waimea Creek, where highly-payable sluicing-ground is known to exist. When this communication is made, the tail-race will be paved with wood blocks, the material for which is now ready. Several parties are ready to drive branch tail-races to connect their claims with the main tail-race, when sluicing operations will be proceeded with. The large area of ground proposed to be sluiced through the main tail-race has nearly all been taken up in claims, several of which have recently been the subject of expensive litigation in the Warden's Court, and some of the cases are still unsettled. This has been the cause of considerable delay in the completion of the main tail-race. The completion of this work, and the starting of extensive sluicing operations in connection therewith, should give a great impetus to mining in the district, as all the old residents have no doubt as to the payable character of the extensive flat commanded by this main tail-race.

The Kelly's Terrace Drainage Tunnel, which, when completed, will be 6,600 ft. in length, is being proceeded with in a satisfactory manner. Before the end of March a distance of 1,200 ft. had been driven by the contractors, and they are now engaged in driving a tunnel for an incline tramway to a gully some 70 ft. from the present face, as they consider it will be more economical to discharge the material produced in driving by that outlet instead of running it to the present tip, a distance of about 1,500 ft. As the country through which this tunnel passes is all auriferous, it is probable that payable gold may be struck long before the intended termination of the tunnel is reached. Some very good ground has been worked in the neighbourhood of Kelly's Terrace, and the tunnel now in course of construction will thoroughly drain the whole of the ground in that locality.

The miners of the Waimea district are satisfied that the new portion of the Waimea Race at Kawhaka, which entirely does away with about a mile of high and expensive fluming that would otherwise require renewing, is a great improvement, as the chance of a breakdown, and consequent stoppage of the supply of water for sluicing, perhaps for months, is now reduced to a minimum.

The branch race to Callaghan's is now completed, and several parties are now sluicing there with water from the race. The probability is that this portion of the district will also have a revival, as there are large areas of auriferous ground at Italian's and Callaghan's hitherto untouched on account of insufficient water-supply.

I have, &c.,

D. MACFARLANE, Warden.

The Under-Secretary, Mines Department, Wellington.

ADDENDUM.

IN addition to the report on the Kumara Goldfield, Mr. McEnnis, Mining Registrar for the district, furnished me with the following particulars: "Nothing of an unusual character transpired in mining matters in the Kumara portion of the district during the past year, and the results obtained from mining operations have been fairly satisfactory. The population is about the same as when last reported on—viz., 2,500 souls. There are about a hundred Chinese in the district, most of whom are at work along the line of the Greenstone Road. They are a very inoffensive body of men, eminently industrious and well behaved, and giving no trouble to their neighbours or the police. There are several parties of Europeans working sluicing claims at Cape Terrace, Hayes's Terrace, Darkies' Terrace, Quin's Terrace, and Maori Point, Greenstone, and they all seem to be doing fairly well. The Greenstone Gold-mining Company, owning the best and largest water-supply in the district (forty heads), has had great difficulties to contend with in opening out, &c. Some few dividends have been paid, but so far the venture has been only a qualified success. It would be well for this company to consider whether an extension of their race would not be advantageous to them, seeing that to the west and north this water commands a very large area of auriferous ground with better facilities for working; but a further extension of the race in either direction means a further expenditure of capital, and at present the company are not in a position to enter upon such a large undertaking, although the outlook in that direction is very promising, and there is the only water available. This is a district that might court inquiry from parties looking for investments that would give a fair return for capital."

No. 9.

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

SIR,—

Warden's Office, Oamaru, 3rd July, 1897.

I have the honour to report, with respect to the Maerewhenua subdivision of the Otago Mining District, that gold-mining has been prosecuted very fairly and evenly, taking into consideration the scarcity of water during the year ending 31st March last.

There have been no discoveries during that period, and nothing has occurred deserving special notice.

The claims are, with few exceptions, worked by the hydraulic-sluicing process, and the water-supply in the best—that is, the wettest—seasons is inadequate for the area of auriferous deposit.

In nearly all instances the wash lies deep, and large quantities of earth and *débris* have to be sluiced away.

In a few claims miners are now tunnelling, and, as the land is "good standing ground," this method pursued by miners of experience and caution is in many cases remunerative, and saves time and labour and the necessity for using so much water in the removal of hundreds of tons of stuff, leaving faces of 30 ft. to 50 ft., and the consequent dealing with an enormous bulk of tailings. Of course, in a district destitute of suitable timber this mode of mining is fraught with danger, and the wash cannot be followed to any great distance into the hills; but in such seasons as the past I have no doubt the return of gold could be materially increased, and the quantity of water required to wash the dirt excavated would be very small compared to that necessary for sluicing.

I beg to forward herewith the usual annual statistical returns.

The Under-Secretary, Mines Department, Wellington.

I have, &c.,

JACKSON KEDDELL, Warden.

No. 10.

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

SIR,—

Warden's Office, Lawrence, 10th May, 1897.

I have the honour to submit herewith the annual statistics of the mining industry in the Tuapeka district for the year ending the 31st March, 1897, and the following report of the various centres, for your information:—

The renewed activity I reported on last year in several localities has been kept going for the whole year, particularly at Waipori and Waikaia. At each of these centres numerous applications for special claims, water-races, &c., have been lodged.

WAITAHUNA.

A good many special claims have been applied for in this sub-district during the year, but otherwise, on the whole, mining has been quiet, and there is very little new to report.

The Waitahuna dredge continues to give satisfactory returns. It was formerly owned by Mr. J. R. Perry, of Dunedin, but sold during the year to Messrs. C. Kreft and party, who are meeting with fair success, and the returns are said to average from 10 oz. to 12 oz. per week.

Waitahuna Flat.—The only mining carried on here now is by a few Chinese.

Waitahuna Gully.—The Norwegian claim, now Thomson and party, employ about twelve men. They are sluicing the old tailings in the gully, and the claim is said to be paying fairly well.

Ferris and party are still working in the cement with fair results.

Callanan and party, formed into the Sailors' Gully Gold-mining Company (Limited) during the year, have gone to considerable expense in enlarging the water-races, constructing a large dam, and laying new pipe-line, and will soon be ready to start sluicing operations on a large scale in the old tailings at the head of the gully.

Hagan and party and Quilter and party are still working in the old tailings, but owing to the dry season most of the mining claims in this locality have been considerably retarded during the summer for want of water.

WAIPORI.

The mining enterprise has been particularly active in this sub-district during the last twelve months. A great many properties have changed hands, some of them at very handsome prices.

The New Zealand Minerals Company have purchased several special claims and large water-races, the O.P.Q. and Canton reefing claims and a right to take eighty heads of water from the Chrystal Falls in the Waipori River being among the principal purchases. With the Chrystal Falls water-right it is the intention of the company to generate electrical power for the purpose of working the two reefing claims mentioned above, and any power over and above that required by the company will probably be disposed of to the adjoining claimholders.

The Bakery Flat Sluicing Company.—This company has been formed during the year, having taken over a large special claim formerly the property of Mr. J. T. Johnson. Considerable expense has been gone to for pipes and plant, and the claim is nearly in working-order.

Messrs. Eaton and party, known as the Golden Key Sluicing Claim, Mitchell's Flat, have been working steadily throughout the year. They have constructed a new water-race from Reidy's Creek over four miles in length, and the party seem well satisfied with the results of the claim. McNeil and party's new dredge, constructed during the year, is working on the Waipori Flat, and is said to be giving satisfactory results.

Mr. Charles Todd has taken up three special claims at the old Bella Reef, and, as considerable outlay will be necessary to develop the mine, he hopes to float a company on the English market.

WEATHERSTONE'S AND BLUE SPUR.

Messrs. Smyth, Donlan, and Adams, who hold a special claim for sluicing on Weatherstone's Flat, have both increased and improved their plant during the last twelve months, and the claim is still yielding good returns.

Mr. James W. Robertson has taken up a special claim adjoining that of Messrs. Smyth and party, and is putting a dredge on to work the ground.

At the head of the gully Mr. James R. Gascoigne has taken up a special claim, part of the ground being what is known as the "Old Cement Claim," and he proposes to bring in a water-race from Waipori, over twenty miles long, to work the ground.

The Blue Spur and Gabriel's Gully Consolidated Gold Company (Limited) have been working continuously during the year (except for a slight break during the summer), the net value of gold taken out being over £14,000, which compares favourably with previous years' returns.

Messrs. Kitto and party, Mills and party, and the Fidelity Company have all been working pretty steadily during the year, with fair results.

The Tuapeka Flat dredge (situated in the Tuapeka River, about two miles below Lawrence) has been working steadily for the last six months, with fair average results.

WAIKAIKA.

The mining industry has been fairly active in this district during the last twelve months. Twenty-eight applications for special claims were lodged and eighteen were granted, besides 290 applications for other mining rights. On the 31st March last 936 acres were in actual occupation as special claims. The following are some of the principal claims taken up and works done during the year:—

The Sew Hoy Nokomai Company, who hold two special claims in the Nokomai Creek, have gone to considerable expense in bringing in a large water-race to their claims, giving employment to over forty men.

The Golden Terrace Company (a private one) have expended about £2,000 in bringing in a water-race from Mount Creek, and have placed a very good hydraulic-slucing plant on their special claim, situate about five miles from Nokomai.

The Argyle Hydraulic Sluicing Company (a private one) have been doing good work on their special claim on the Winding Creek, on which they have placed a most efficient hydraulic sluicing and elevating plant, the pipe-line being 4,800 ft. in length. They have also obtained all the necessary appliances for gold-saving of the latest description.

Messrs. McArthur, Kennedy, and Mears have been engaged in levelling and constructing a water-race about forty miles long from the Leathan and Waikaka Streams to work what is known as the Switzers Freehold, and I understand the property has been taken over by a very strong company, who evidently intend to develop the mine thoroughly.

A prospecting dredging claim has been taken up on the Waikaka River, at the Landslip, and a large dredge is now being built on the ground, at a cost of about £2,000.

WAIKAKA.

Mr. J. R. Perry has taken up a special claim of 40 acres, and has erected a dredge on the ground, at a cost of about £1,500, and he seems to be pleased with the result.

Mr. William McGill has also taken up a special claim at Waikaka, on which, I understand, he intends placing a dredge.

There are still two dredges at work on the Pomahaka River, but I understand they are not giving satisfaction, and it is with great difficulty that they manage to carry on operations.

I have, &c.,

ROBERT S. HAWKINS, Warden.

The Under-Secretary, Mines Department, Wellington.

No. 11.

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

SIR,—

Warden's Office, Naseby, 1st May, 1897.

I have the honour to forward herewith the usual annual statistics of the mining industry in the Mount Ida district for the year ending 31st March, 1897, and the following report dealing shortly with the various centres of the mining population is submitted for your information and consideration. Ere alluding, however, to any special locality, I may say, by way of premise generally, that the past year has been a most unfavourable one for mining operations throughout the whole district. Water—still the great factor towards success—has been lamentably scarce during what is looked upon as the working season—in fact, many of the oldest residents aver it has been the driest known since the opening of the field. My own observations lead me to think that estimate is correct. As a natural consequence, the industry, on the whole, has been seriously retarded, but, notwithstanding this drawback, I am glad to say no actual retrogression is apparent, and the miners generally appear to be determined to persevere, as hitherto, in spite of all difficulties. At the date of my last annual report the outlook for the year now under comment was most promising. An unusually large number of mining areas were applied for, and many of them have since been granted, and taken up for quartz, sluicing on the elevating principle, and dredging—in fact, a larger area has been granted than for many years past. Owing, however, to the great scarcity of water alluded to, and, further, to unexpected difficulties being met with in obtaining the necessary capital for developing the claims, through the depression in mining investments both locally and in Europe, but little progress has been made. Negotiations in this direction are still going on with regard to a number of the proposed undertakings, with promise of favourable issue. If that result is attained many very large operations will be commenced, and I feel assured that the predictions of success expressed in my last report will be quite fulfilled.

The subject exercising the minds of all miners perhaps more than any other has been the conservation of water, the acutely-felt want of it during the past year having naturally intensified the interest in the matter. I have constantly alluded to the question in my annual reports, and again consider it to be my duty to reiterate my recommendation that it may receive the earnest consideration of the Government, more particularly in respect to the long-talked-of reservoir at Eweburn. I feel satisfied that if that scheme were given effect to the results would be eminently satisfactory to the district, leading, I think, to a considerable accession to the number of miners on the field, and the development of large areas of ground which, I fear, will otherwise remain unworked and unprofitable.

From what I can gather, I think more prospecting has been carried on during the past year than for some time previously, and, although nothing of a very startling nature has been reported,

I have reason to believe that in some cases the issues have been favourable. In the neighbourhood of Macrae's and Dunback several quartz reefs have attracted attention, and a considerable amount of exploiting has been carried on. It is probable that works on a large scale will be carried out if the favourable indications now presenting themselves continue to an extent warranting the erection of machinery. European capital has been made use of in the works already proceeded with, and it seems probable that quite a revival may take place in the locality referred to. Some new ground in the neighbourhood of St. Bathans has also been opened up, of a promising nature for sluicing and elevating, and, from what has been brought under my notice, I have every reason to believe that profitable occupation of a considerable area of ground will ensue.

NASEBY, ROUGH RIDGE, KYEBURN.

The supply of water from the Mount Ida Water-race has not, I understand, suffered as great a diminution as might have been expected, and about the same number of miners have been, at any rate, partially supplied from that source. Some of the races held privately have not been by any means as fortunate, and the most of them have been enabled to work only at broken time, with long intervals of compulsory idleness. It is gratifying, however, to find that the general yield of gold for the whole district, in spite of all drawbacks, shows a material advance. No progress has yet taken place in dredging, although reports are constantly reaching me from various sources that arrangements have been made for the commencement of active operations, a result very much to be desired. I believe Messrs. Guffie and party will be the first to actually initiate this new departure in mining in this neighbourhood in placing a good dredge on their special claim, which is situated a mile or two from Naseby, in Main Gully. During the past year they have been elevating, and even with a very broken supply of water—about three heads and a half for probably not more than half-time—have worked an area of about 2 acres, from which I am informed 400 oz. of gold has been secured. Accepting these figures as accurate, the return is most encouraging, not only for the future of Messrs. Guffie and party's own claim, but as to the possibilities of similar operations in the very large area of apparently similar ground in the vicinity, provided always that the supply of water was more permanent. Messrs. Guffie have now the necessary plant ready for a second elevator, and several grants for special claims have been made, in view of similar works being started. It is contended that these claims alone would be able to consume any increased quantity of water which might be made available by the construction of the reservoir at Eweburn. At Upper Kyeburn work has been much interfered with by the cause so frequently alluded to, and perhaps even more so at Hamilton's and Sowburn. Work has been almost at a standstill at the latter places. There is, therefore, nothing worthy of bringing under your notice with regard to those places. I may say the same of the Rough Ridge. Nothing practical has yet come of the long-pending negotiations between the company which took up the special claims for quartz-mining there and the London company which undertook the financial part of it. The local shareholders are still sanguine that the necessary capital will be found within a few months.

Settlement throughout the district is still advancing, although last season has been a very trying one for both the agricultural and pastoral tenants, from the same cause which has so interfered with the mining industry. The subject of water-conservation is attracting great interest in the minds of the settlers. Eight meetings on the subject have been held during the year. It is of grave importance to all.

At Ophir, Matakanui, Ida Valley, and Manuherikia mining remains in about the same condition, the ceaseless complaint being the scarcity of water. There are a few men still working at German Gully, where the ground is shallow, and reported to be very patchy, with no defined lead. The washing is principally being effected with the almost superannuated cradle, so that progress is but slow. At Ida Valley there are but a few men at work, and those who still remain are not, I fear, making more than a bare living. The well-known and long-established companies at Matakanui have been much retarded by the prevailing cause, and prevented from carrying on their large works for anything approaching full time. The Undaunted and Mountain Race Companies have come to some understanding, and have been enabled to use the short supply of water to greater advantage; but their work has been, of necessity, carried on under great difficulty. I have not been placed in possession of any definite information of the actual returns of the claims there, but I am led to believe that, proportionately to the extent of ground treated, the yield continues good. Considerable interest is taken in the work undertaken by a party (of which Mr. Fogarty is a member) who are directing their energies to develop deep sinking. Eight men, I believe, are now employed sinking a shaft, which has already attained a depth of 60 ft., and it is stated to be the intention of the parties interested to carry it down to a depth of 500 ft. It will be a costly work, and, if carried out, will reflect great credit upon the spirited men undertaking a work of such magnitude. It is to be hoped the energy displayed may be suitably rewarded.

The dredge of the Ophir and Ind Company has not, I regret to say, yet succeeded in turning out gold in payable quantities. It has been working in the immediate vicinity of the bridge across the Manuherikia at Ophir, and from thence upwards, towards the township. The result of the first week's work was most promising, being, I understand, about 18 oz.; but immediately after ground which had been worked more than once by Chinese miners was met with, a very much diminished yield being the natural result. Latterly, I am informed, the indications of getting into solid ground are improving, and it is believed and hoped the yields will get much better. The company has invested a considerable amount of capital, and heartily deserve success. The want of it, with regard to this dredge, will, I fear, prove the death-knell to a number of the dredging claims contemplated and applied for along the course of the Manuherikia from Ophir upwards for many miles. In spite of the non-success hitherto met with the company is still determined to carry on, and give the ground a thoroughly good trial; the opinion of the majority of the miners is that the river and the adjoining flats will still be found profitable for dredging purposes. Consider-

able excitement was caused some months ago by the discovery of what promised to be a highly payable quartz reef some two miles and a half from Ophir, in a south-easterly direction, on the range dividing the Manuherikia Valley and Ida Valley. Gold was shown freely in the stone. The discoverer, a Mr. Green, sunk some few feet on the reef, and sent a small quantity of the stone for treatment at the School of Mines, Dunedin. The return was most favourable—viz., at the rate of 7 oz. per ton. A further lot of 30 cwt. was tested, which, with only rough treatment, gave a return equal to 2 oz. per ton. The reef has now passed into the hands of a small locally-formed company, by whom it is intended to take out a quantity of 30 or 40 tons, and treat it at the local battery. I am informed that stone is now being taken from a depth of 30 ft. to 40 ft., and the appearances are still favourable.

Since writing the foregoing I have been given to understand that the Undaunted Company, at Matakaniui, are washing up, and expect to secure about 1,000 oz., which, considering the broken time, must be considered a good yield. In the early part of the year it was thought possible that a very important amalgamation of the water-race properties heading from Thompson's Creek would have been accomplished, and possibly a reservoir constructed in Thompson's Gorge. So far, however, nothing definite seems to have been arrived at, desirable as it may be.

HYDE, MACRAE'S, NENTHORN, ETC.

No change of importance has occurred in these localities, either in the number of men employed or their earnings. There was promise in the early part of the year of a very great revival taking place, but, from the causes which have influenced other parts, matters have gradually assumed their normal condition. A number of large areas were taken up for dredging and quartz-mining, but so far little or nothing has been done to develop them. In the neighbourhood of Fullarton's some good yields have been mentioned, but the actual figures have not transpired. A good deal of solid work, however, has been accomplished, and is still being carried on, in that locality. The dredging operations in the Taieri River have been discontinued—at any rate, for the present—and the dredge, which is but a small one, has been removed to, and is now working at, the Fillyburn, with what returns I am not informed. There are, I believe, about the same number of miners, European and Chinese, scattered among the gullies and flats making a living, both in the Hyde and Macrae's portions of the district. At the latter a number have been unable to wash up, and are waiting for wet weather to set in. At Horse Flat some of the Chinese miners have been doing very well: one party is reported to have secured about 200 oz. in eight months.

Quartz-mining has not advanced as much as I hoped for during the year. Messrs. Donaldson's battery has been compulsorily idle for a length of time through scarcity of water, but I am informed they have a quantity of stone ready for treatment. The Bonanza Company continues to do good work, and, I believe, with satisfactory returns. They have laid down some 900 ft. of rails in their tunnel, which it is intended to carry on for another 500 ft. A number of other holdings have been granted in that locality, but no returns have yet been obtained. Prospecting on a fairly vigorous scale is being carried on at the quartz lodes in the Dunback district, where several licensed holdings and special claims exist.

At Nenthorn some of the old claims are still being worked in a somewhat desultory manner by small private parties, and from information at my disposal it would appear that, at any rate, some 500 oz. of gold have been obtained, some of the yields being at a very payable average per ton. I am informed negotiations are being carried on with a London company with a view to working some of the claims on a large scale. I hope to hear soon of a satisfactory arrangement being arrived at. The contemplated operations would, I believe, include testing the reefs at a very low level by tunnelling. The expenditure would, no doubt, be very large indeed, and might, I think, warrant a proportionately large area being granted, or other concessions being made, for so large an undertaking.

ST. BATHAN'S, CAMBRIAN'S, ETC.

Good and profitable work has been continued on all the large claims in this locality, although the shrinkage in the water-supply has been keenly felt, compelling several of the companies to cease operations at various times during the year, thus reducing the yield of gold and the earning-power of the wages-men, of whom there are a large number in this part of the district.

At Johnstone's Creek, about seven miles from St. Bathan's, near the Manuherikia River, James Kennedy, jun., discovered what at first promised to be an extensive and valuable addition to the auriferous resources of the place. A large number of claims were taken up, and a rush on a small scale took place. It was subsequently found, however, that the payable run discovered by Kennedy was somewhat contracted. His party is now the only one working. They obtained about 50 oz. for six weeks' sluicing, but find now there is too great an amount of superincumbent stuff to remove, the thickness of payable gold-bearing wash being only 6 in. to 8 in.; but a water-race has since been granted to them from the creeks adjoining, and they are still in great hopes of striking a more extensive run of payable wash. Eagle Brothers have been engaged prospecting at the upper part of Dunstan Creek, and continued their search across the range to the watershed of the Lindis. I am informed they found gold in almost all of the places tried, but whether payable or not I cannot say, as the approach of winter has compelled them to cease work at that place. I believe they are now trying ground nearer St. Bathan's. Messrs. Dillon and Lynch have secured the co-operation of some very practical and energetic partners possessed of capital. They have during the last six months effected great improvements in their property, known as the Shamrock Claim. They have obtained further grants of water, enlarged their race, and erected some very valuable plant for their elevating works. The prospects lead to the belief that the claim will prove to be both very valuable and lasting.

Another apparently satisfactory discovery has been made by Slater and party at Surface Hill, which is in the immediate vicinity of St. Bathan's. Somewhat extravagant returns have been

spoken of, but I am without reliable confirmation as to the actual figures. I have reason to believe, however, that the prospects are very good.

The Scandinavian party has carried out some extensive improvements in connection with their water-race which will insure to them an increase to their already excellent supply, and enable them to increase operations either on their own behalf or by letting it to others.

I regret to learn the Muddy Creek Channel is not in a satisfactory condition, through the cessation of work by the M. and E. Company at Surface Hill diverting the water from Muddy Creek, which, losing the benefit of it, shows unmistakable signs of silting up. Probably Government aid may be invoked to assist in keeping it clear.

The workings at Kildare Hill are being most vigorously prosecuted, those of Mr. Ewing more particularly so. They are assuming really gigantic proportions. He is now elevating about 150 ft. in his now celebrated claim, and still, I am gratified at being able to say, with highly payable results, showing how very rich the deposit must be to permit of such immense bodies of stuff to be moved, at great cost, and still to be remunerative. The untiring energy and capability displayed by the proprietor in connection with this and his many other large undertakings is deserving of all praise and complete success. Mr. Ewing is, and has been for a number of years, the largest employer of labour and investor of capital in the district.

Others of the long-established claims in the St. Bathans basin continue to be worked with, I believe, good returns, notably Eagle and Gray, the M. and E. Claim, and others—the two named have now been worked for thirty years or more with good records. The St. Bathans Channel is almost threatened with what I have mentioned as happening to the Muddy Creek Channel. I am given to understand that the Government either has been or is about to be applied to for assistance to keep it clear. This is a matter of grave importance to the welfare of the place, and worthy every attention at the hands of the Government.

At Vinegar Hill and Cambrian's excellent work has been carried on by Messrs. Ewing, Morgan and Hughes, Excell and Coulson, Fordham and Gay, also Davis and party, all of whom, I am informed, are on payable ground. Mr. Ewing has two extensive claims opened up and in good working-order in this locality, besides the well-known one on Vinegar Hill. I am glad to hear the results, so far, have been most satisfactory, and every indication of even higher returns in the future. His expenditure in opening out these claims has been very large, and his success is again well merited.

Dredging in the Dunstan Creek has not yet been actually started, but there appears to be every probability of Messrs. Beattie, Black, and party making an active commencement in the near future. I believe a small company has been over-subscribed for the purpose. It is also understood that dredging will, ere long, be started by a company near the foot of Muddy Creek.

Altogether, the future of St. Bathans may, I consider, be looked upon with satisfaction, and hopes of permanent success and advancement entertained. Certainly, if dredging turns out to be at all approaching the triumph predicted for it, then this part of the district must advance.

In conclusion, I may say that, taking into consideration the very exceptionally unfavourable season, the past year will bear favourable comparison to many which have passed, and I see no reason to think unfavourably of the future.

The approximate estimate of the yield of gold I put at 21,000 oz., which is an increase of 2,000 oz. for the year, and speaks volumes for the future.

The amount of business transacted in the Courts under my charge has not altered materially, and the amount of revenue collected shows a satisfactory result.

Wardens' Courts: Number of complaints, 50; number of general applications, 580; number of general applications opposed, 147; applications for licensed holdings, 49; total area in same, 1,156 acres; applications for special claims, 48; total area in same, 3,030 acres; number of miners' rights issued, 672; number of water-race licenses, 328; number of general registrations, 692; total revenue collected, £1,802 2s. 6d.; deposits for surveys, £1,285.

I have, &c.,

The Under-Secretary, Mines Department, Wellington.

S. MEAD DALGLIESH, Warden.

No. 12.

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

SIR,—

Warden's Office, Clyde, 31st March, 1897.

I have the honour to enclose herewith the annual statistical returns, and to submit the following report on mining matters in the sub-districts under my supervision, for the year ended 31st March, 1897:—

QUEENSTOWN AND ARROW.

Mining matters in this portion of my district remain in a similar position to that of the three or four preceding years. The revenue has substantially increased in the Queenstown office, and slightly at Arrow, the figures being £1,100 as against £805 for 1895, and £500, as against £450 respectively.

Alluvial.

In this branch of the industry there is nothing of importance to chronicle. The returns of gold keep up, and are, if anything, in excess of last year. Occasionally rich patches in a small way are heard of, but nothing of sufficient importance to warrant any influx of population.

The Moonlight Sluicing Company is the only one in full working-order, and lately it has had a good washing-up, enabling a substantial dividend to be paid. The company has a large extent of virgin ground ahead of its workings, and, should the present prospects continue, it will take many years to work it out.

Dredging.

There are only two companies dredging at present—viz., the Sew Hoy Company and the Sandhills. Both are paying a little more than working-expenses. Several other dredging claims have been taken up, but nothing more than preliminary work has been done.

Quartz.

During the past year no new ground has been opened up. Three claims are in full work—viz., the Achilles, the Glenrock Consolidated, and the Tipperary. The first named is at present on a very good lode, the stone averaging about $1\frac{1}{2}$ oz. to the ton, with no sign of pinching out. The Glenrock is also bringing out stone averaging $1\frac{1}{4}$ oz. to the ton, but the extent of the lode has yet to be ascertained, whilst the Tipperary is a little more than paying expenses.

About a dozen special claims have been granted during the year, but, as the titles have only lately come to hand, no work of any magnitude has been done in connection with them. The general prospects of the district are decidedly good, and I am of opinion that if the holders of claims here would rely more on their own efforts, instead of courting the assistance of the foreign capitalists, more prosperity would be the result.

CROMWELL.

During the year ending the 31st March, 1897, very little change has taken place in alluvial mining in this locality. The summer having been exceptionally dry necessarily meant a correspondingly short supply of water. Hence no startling returns could be expected, nor were any obtained.

At Bannockburn many of the claims and other mining privileges are under offer to a syndicate who have secured a water-right of fifty heads from Deep Creek and fifty heads from Doolan's Creek for the purpose of working any properties that may fall in to them. They have also had granted to them a special claim of 50 acres on the Deep Lead, Bannockburn, which will be commanded by the same water.

A few claims at Quartz-reef Point still continue to pay fair wages, and, although things seem quiet there as well as at Roaring Meg, Five-mile Creek, Lindis River, Mid Run, and Criffel, yet those owning claims in these several localities still keep plodding steadily on.

At Fatboys the El Dorado Company have thrown up their old claims, and have applied for a special claim of 50 acres.

Of the many dredging claims applied for, the greater number have been taken up as fast as the surveys could be completed, but a considerable number have yet to be surveyed.

At the Nevis River the Nevis Gold-dredging Company have put up a 10-horse power dredge, which, for the short time it worked before the frost set in, got fairly good returns. Two other dredges are being built on the Nevis, and are expected to be ready to start work in the early spring.

On the Kawarau River the Electric Company's No. 1 dredge, of 12-horse power, has been giving phenomenal returns from their upper claim, and their No. 2 dredge only awaits her engine being fixed, when she will at once proceed to work their middle claim.

On the Clutha McLay's dredge, of 12-horse power, has had good yields, whilst Crookston's dredge, of 10-horse power, and Kloozli's current-wheel dredge, of 5-horse power, have both made at least wages; and Hotop and party, at Bowman's Flat, have their dredge ready to receive her engine, and are expected to commence work in a few weeks.

In quartz-mining nothing exceptional has been done, although at the Carrick Range the Lawrences are obtaining fair returns from their claim, while Talboys and party have had excellent prospects from their 100-acre special claim; and at Bendigo the Cromwell Company have had only moderate success, and the claim is now being worked on tribute.

As one result of the activity displayed in dredging, many persons have taken out coal licenses at Lindis, Kawarau River, Bannockburn Creek, and Nevis River, and from several of the areas thus granted coal of a fair quality is being got out and delivered at prices satisfactory to both parties.

Notwithstanding the fact of several deaths having occurred the population has slightly increased.

During the year thirty-three special claims and licensed holdings were applied for, ten coal leases and licenses and 373 general applications were dealt with, nineteen cases were set down for hearing, 544 miners' rights were issued, while the total revenue (including deposits) amounted to £2,037.

CLYDE AND ALEXANDRA.

During the past year there has been a decided improvement in mining matters, and more particularly does this apply to Alexandra and its surroundings. The dryness of the season has to a great extent hampered sluicing, but dredging has been carried on with uninterrupted success.

Since my last report Messrs. Nicholson and party, who were working on the Dunstan Commonage in rather a large way with the Golden Gate water, ceased operations in an insolvent condition. No doubt the continued drought to some extent brought this state of affairs about, but I think the ground was poor and the management expensive.

There are about twenty-five profitably employed in this locality, quite as many, probably, as the limited supply of water will permit.

About the same number are engaged along the banks of the Molyneux between the two townships as heretofore, who are, it is said, making fair wages. In consequence of the want of fall, only the top seams can be worked, and were it not for the excellent supplies of water from the Fraser I question whether the ground could be made to pay by ordinary sluicing. Several parties are working at Springvale, and, although they shift about from place to place several times during the year, most of them seem satisfied with the results of their labour.

The little rush that took place at the Manorburn a year or two ago has not resulted in anything permanent being discovered. Two or three parties still remain there, but I think a bare living only is obtained.

Jackson, Campbell, and party, at Tucker Hill, who spent many years of labour, were compelled, through shortness of water and through being hampered by borrowed money, to give up, and the property was purchased by Messrs. Rivers and J. Gartley. The ground is said to be undoubtedly good, but, until a more reliable supply of water can be obtained, I fear the new purchasers will have difficulty in making it pay. Several parties are working in the various gullies and creeks adjoining, notably Conroy's, Blackman's, Aldinga, and the Fraser, and from appearances are quite satisfied.

Dredging.

Rapid strides have been made in this industry, and to it the permanency of the district must greatly depend. There seems to be practically no limit to the ground that can be worked by this method. Beaches, banks, and flats which years ago could not be approached by a dredge are now being operated upon with the greatest ease.

The Manuherikia River, with its adjacent flats, has been pegged out from Alexandra to the mouth of the Chatto Creek, a distance of about eleven miles. As yet only one dredge is working—viz., the Manorburn Company. The returns of this dredge are not made public, but I am informed from a reliable source that the results are highly payable. Two other dredges are in course of construction, one of which will soon be completed.

In the Molyneux River there are twelve dredges in active operation, and one undergoing conversion from a current-wheel to steam which will soon be at work in the Victoria Company's claim at Clyde.

The Molyneux Hydraulic Company's claim at Alexandra, which for some considerable time had been worked unsuccessfully by means of hydraulic sluicing, has now upon it what may be termed without doubt the most commodious and efficient dredge upon the river. She is only just completed, and therefore nothing can be said as to her future prospects, except this: that should the ground turn out to be anything approaching the quality it is supposed, with such a complete dredge to work it success must follow. The following is a description of the hull and machinery: "The dimensions of the dredge are as follows: Length, 95 ft.; breadth of beam, 27 ft. 8 in.; depth, 6 ft. 6 in.; width of well, 5 ft. 6 in. The hull is very substantially built of timber, having blue-gum frames planked with kauri. The bow gantry is especially strong, in order that the mooring-lines may be carried over it when working the high banks on the company's claim. The hog-posts and the rods are very massive, and serve to support the high elevator and prevent hogging of the portion. The dredging machinery is the heaviest yet made for gold-dredging, being upwards of 90 tons weight, and in strength is only surpassed by the Dunedin Harbour Board's dredge '222.' The ladder is 63 ft. long from centre to centre of tumbler shafts. The buckets have each a capacity of $4\frac{1}{2}$ cubic feet, and when running full will deliver 2 cubic yards per minute, or 120 cubic yards per hour. The upper and lower tumblers are of steel. The buckets deliver into a hopper-plate lined with steel, having two branches (which divide the material) leading into two revolving screens or cylinders running parallel. This is the first occasion two screens have been used, and another new feature is the use of a worm in the screws, of angle steel. This worm or thread brings the material along at a regular rate, and keeps the wash in the screen a definite time, thus insuring perfect treatment. Great interest was manifested in the working of these screens, as it had been freely predicted they would be a failure. They, however, worked perfectly. The screened material is treated in the usual manner on side-tables. The rough gravel or tailings slide down a delivery-plate into the elevator-buckets. The elevator is the longest yet made, being over 60 ft. in length, and capable of stacking the tailings to a height of 40 ft. above the water-line. Great improvements have been made in the elevator buckets and links. The tumblers are seven-sided, and the power is applied to the lower tumbler, thus saving the extra weight of gearing on the outer end of the elevator. So easy does the elevator work that we saw the elevator turned by one man at the driving pulley before the belt was put on. For the mooring-lines a powerful steam-winch of improved design is used, and the trial showed it to be very powerful, quick-acting, and handy, while the gear is made very strong to avoid breakages. A duplex steam-pump is placed in the pontoon, delivering water through a hydrant at the starboard bow in order to break down the high banks. The water for the tables is supplied by a centrifugal pump, which, together with the duplex pump, were supplied by Tangye Brothers (R. B. Denniston, agent). Steam is generated in a 20-horse power boiler, built by Morgan, Cable, and Co., Port Chalmers, who also supplied the winch. The engine is one of Marshall's 16-horse power compound (F. R. Manning, agent). All the dredging gear (buckets, ladder, and elevator) was supplied by Messrs. R. S. Sparrow and Co.; the buckets and links by the New Zealand Engineering Company; the driving belts (Dick's) by John Edmond and Co.; the tables and ironwork for the hull by J. W. Faulkner and Co. (Limited); timber for the hull by Murdoch and Co.; labour for the hull by Ritchie and Co.; bolts, galvanised iron, and wire ropes by the New Zealand Hardware Company (Limited); steel tumblers and steel gearing by Fried Krupp, Magdeburgh, Germany. The whole of the machinery and timber was carted from Lawrence by Mr. W. Paul. The plant has been erected by Mr. John Scott, of Port Chalmers, who has carried out his work faithfully and to the complete satisfaction of the designer of the dredge—Mr. Edward Roberts, consulting engineer, Dunedin. Mr. Roberts prepared the whole of the detail drawings and specifications, and superintended the contracts for the company. A record in boiler-making was made of this company's boiler by Morgan, Cable, and Co., who turned it out in three weeks and four days."

The Moa dredge is now working a bank claim at Poverty Beach, adjoining the Golden Beach party's ground, with most excellent results. When the river gets low it is expected that she will experience some difficulty with her tailings, and probably will have to cease working, in which event no doubt she will be removed to her owners' claim higher up the river.

Leijon and party, the Ngapara, the Earnsclough No. 1, Chicago, the Enterprise, and Findlay's two dredges have all been doing well for the past year, whilst Hyde and party's dredge is now undergoing repairs and enlargement of her buckets.

BALD HILL FLAT.

With the exception of a little more than the usual loss of time through scarcity of water, mining here maintains a prosperous condition. Hesson and party, having the largest and most lasting water-supply, obtained fully their average yield, whilst Ewing, Carroll, and Lynch and G. Wilkinson were very little less. Several parties are working on the side of the range and in Mr. Butler's freehold with satisfactory results.

Quartz.

Two claims are being continuously worked—viz., White's Reef, owned by Robert Symes, and the Excelsior, owned by F. W. Gray. Several good crushings were obtained from both during the year, and each of the holders has pegged out more ground.

The Excelsior has been offered to a syndicate, which has done a considerable amount of prospecting. The men were knocked off some little time ago, but this, I am informed, was not in consequence of unsatisfactory prospects—indeed, the reverse has been the result—but from a temporary shortness of funds.

During the year 2,817 acres has been applied for under special claims and licensed holdings, deposits upon which amounted to £763, whilst 88 acres was applied for under coal leases and licenses; 500 miners' rights were issued; 307 ordinary applications were dealt with; twenty-six cases were entered; and the goldfields' revenue amounted to £1,068.

ROXBURGH.

Very little alteration has taken place here during the past year. The United Hercules Company has gone into liquidation, but the property has been sold to Mr. John Ewing. The Roxburgh Amalgamated Company is still doing very well, although the returns were not quite up to those of the previous year. There are several other sluicing claims in this locality doing fairly well. Lower down are the Island Block Company, Golden Run (late Island Block Extended), R. Stewart and R. Kitto and party, besides others of less importance. These claims were working fairly steadily up to about the end of December, when shortness of water caused them to experience a considerable amount of broken time.

Dredging.

Dredging generally has been successful during the last year. Two or three have met with reverses, whilst others have got exceedingly good returns. In some reaches of the river the running drift is almost insurmountable, but where this has not to be contended with the amount of gold obtained clearly indicates that the river is by no means worked out. The dredges that may be said to have had the best season are the Golden Gate, the Ettrick, the Otago, Pringle and party, and Bennet and party.

WAIKAIA AND CAMPBELL'S.

A considerable revival in mining has set in in this locality during the last year, and several special claims have been taken up over ground to be worked both by hydraulic sluicing and sinking and driving for quartz.

This country lies at the back of the Mount Bengier Range, and is attainable from Switzer's as well as Roxburgh, although most of the business for many years past has been done at the latter place. It is very high, and the working seasons consequently short, and probably no material results will be accomplished from the late stir until some time in the spring.

Twenty-five special claims and licensed holdings were applied for during the year, embracing an area of 1,132 acres, upon which deposits were made of £443; 225 ordinary applications were dealt with, sixty-four of which were opposed; eighteen cases were set down for hearing; 345 miners' rights were issued; and the total revenue amounted to £908.

I have, &c.,

The Under-Secretary, Mines Department, Wellington.

S. ERNEST MCCARTHY, Warden.

No. 13.

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

SIR,—

Warden's Office, Dunedin, 5th June, 1897.

I have the honour to forward herewith the annual mining statistics for the Hindon portion of the Otago Mining District.

About the usual average number of miners, spread over the district, have been engaged in alluvial mining in and about the neighbourhood of the old workings, earning a livelihood, and in some cases a little more.

The Deep Stream Amalgamated Hydraulic Sluicing Company (Limited) has started a mining venture, the success of which will be a matter of considerable importance to the district. The company hold special claims and licensed holdings extending for three or four miles along the Deep Stream, which it is intended to sluice on an extensive scale. The large quantity of water in the ground prevented it being worked without a considerable expenditure of capital on preliminary works. The company have commenced operations with considerable energy, and, besides letting several contracts for ploughing and scoop-work, have seventy wages-men employed in constructing a water-race from the upper part of the Deep Stream to carry twenty heads of water, and this, I understand, will be only a portion of the water intended to be used when the claims are in full work.

In quartz-mining the Barewood reefs are the principal attraction. These reefs have been traced and prospected for a considerable distance, but hitherto have been worked in a comparatively small way, without much success; but I understand the reefs have been favourably reported upon by mining engineers for working on more scientific principles on a large scale. Two companies with large capital have, I am informed, completed arrangements for further prospecting and opening out the reefs preliminary to erecting powerful machinery for quartz-crushing should expectations as to the value of the quartz in the low levels be realised. If these companies are successful it will lead to the mining of other large bodies of low-grade quartz in the district.

The Under-Secretary, Mines Department, Wellington.

I have, &c.,
E. H. CAREW, Warden.

No. 14.

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

SIR,—

Invercargill, 21st April, 1897.

I have the honour to forward herewith the returns for the year ending the 31st March, 1897, and to report as follows on the condition of the mining industry in my district:—

OREPUKI.

This district maintains its reputation as a gold-producing centre, and, although the past year has been a very dry one, the miners seem satisfied.

During the past few months there has been a small rush to a place a short distance to the west of the mouth of the River Waiau. A lead has been found there running parallel to the coast at a short distance from the beach. It has not at present been sufficiently tried to prove its richness, but the indications are encouraging. It appears to be of limited extent, and has been all taken up. Water will have to be brought a considerable distance to work it properly.

The mining population of this district has increased. It is now: Europeans, 150; Chinese, 8. To the west of the Waiau there are thirty miners, all Europeans.

ROUND HILL.

The European mining population has increased, and is now eighty. The Chinese miners now number sixty, a decrease from last year of 50 per cent. The interesting feature of this sub-district is the energetic and successful application of hydraulic sluicing to the low-lying creek-beds and flats.

At my request the manager of the Round Hill Mining Company (Mr. George Lee) has kindly supplied me with the following particulars concerning the operations of his company for the year ending December, 1896:—

“Water-races.

“The company completed the enlargement of Port’s Race some time back, and it now has a carrying-capacity of twenty-seven Government heads of water. The continuation or next section on to the Cascade Creek is also completed, and has a carrying-capacity of fifteen Government heads. The company is now preparing to go on with the next section of nine miles from the Cascade Creek to Granity Creek, and which has already been cleared of bush and scrub for construction. This last section will be commenced with a carrying-capacity of ten Government heads, and, at Granity Creek, with a capacity of six Government heads of water. The company has also enlarged its other races, and those have at present a total carrying-capacity of thirty-six Government heads. The cost of this work—enlargement and new races—has been, to the end of 1896, £3,736. This sum does not include the ordinary repairs to the races. There are four men, on the average, employed on those races permanently.

“Dam or Reservoir.

“The company has a dam-site capable of containing, when completed, 24,000,000 gallons situated in the Ourawera Gorge. Part of the work of construction of this has been done, and the company is preparing to go on and finish this undertaking.

“Plant.

“The company during the year got annealed-steel plates from Home, and has made up on its works 90 chains of 27 in. pipes and 30 chains of 18 in. pipes, the large pipes commencing with 14–13 W.G. at head of line, and terminating with 10–13 W.G. at lower end of line. These are all steel rivetted. The company has a complete outfit for pipe-making here, and makes up all its piping, connecting-pieces, &c. This new plant cost £3,486. The company, in addition to this, has plant which cost £3,865. This includes about a mile and three-quarters of 13 in. 10 in. and 7 in. steel pipes, electrical plant, sawmill, &c. The result of using this very large pipe-line is that the company has now a little over three times the efficiency for operations it had with its old plant, and with ordinary weather can do fully three times the work it formerly did. . . . Either of its elevators will lift, and does lift when fully at work, 10,000 tons per week on an average at the upper paddock to an elevation of 45 ft., and at the lower paddock 46 ft. 6 in. The pressure-gauge at the lower paddock when the plant is all at work registers 132 lb. per square inch.

“Labour employed, and Expenditure.

“There are, on an average, about fifty hands employed about the claims and water-races, and there was paid for wages last year a sum of £6,272 16s. 8d.; for local management, salaries, &c., £519 4s.; for ordinary working-expenses, about £250. The total expenditure for last year for wages, salaries, races, new plant, &c., was £13,712. The company, of course, will not be subjected

to such heavy expenditure in future. I estimate the working-expenses in the future to be about £5,000 per annum.

“Gold recovered for the Year.”

“The return for the last year was 1,238 oz. of gold, worth about £5,000. This was won by one elevator, the new plant not being ready soon enough to get the benefit of the good water-supply.

“The company has a good future before it now. The faces of the claims give fairly satisfactory prospects, and the company will, with a good season’s water, soon recover a considerable sum of the money it has expended.

“I may mention that the company has immense gold-saving tables, their gold-saving area being 1,200 ft. each. This includes the area covered by matting, angle-iron, ripples, plates, &c.”

The other company, which has a claim of 20 acres in the same creek, has got over its initial difficulties, and the manager, Mr. Ramsay, is hopeful of a good year. The shareholders are, I believe, all local residents, and deserve to be rewarded for their enterprise. The country between the Round Hill Mining Company’s special claim and the seashore is more or less auriferous, and may yet be worked by hydraulic elevators.

LONGWOOD.

The long-looked-for reefs have not yet been found, but prospecting is still being carried on. Rich specimens have been found in the past in considerable numbers over a small area on this range, and many practical miners believe that there is a rich reef in the locality. A lot of money has been spent searching for it, but so far without success.

WYNDHAM.

Mining is on the down grade at present in this sub-district. The number of miners has fallen from thirty-six to twelve. The special claims granted for beach-mining were not taken up.

PRESERVATION INLET DISTRICT.

I regret to say that this sub-district has not fulfilled its early promise. It is without doubt a locality of great possibilities. In no part of the colony is there such a vast extent of known auriferous country so little prospected. With the exception of a slight fringe on the coast, it is almost wholly unexplored. The lack of communication with the place prevents its features being known by enterprising investors and prospectors. The track which the Government has decided to make from the Waiau to the inlet will make the district more accessible, and encourage prospecting in the interior, where, I have no doubt, alluvial deposits will be found of greater extent and permanency than those worked on the coast-line or near it.

Mr. Richard Allen, the legal manager of several quartz-claims in the district, has been good enough to furnish me with the following details relating to quartz-mining there :—

“The Morning Star Mine, at Long Beach, is still yielding very satisfactory results, the last return just received being 604 oz. 8 dwt. of retorted gold from 398 tons of stone, for five weeks’ crushing with a ten-head battery, making the total returns from the mine since it started crushing in August, 1895, 4,638 oz. of gold, value £18,837, from 4,809 tons of stone. The gold from the district is all of superior quality, that from the Morning Star assaying at the Melbourne Mint all over 23 carats. The number of men employed on this claim, including timber men, is about sixty.

“A large number of claims have been taken up during the past year in the neighbourhood of the Morning Star Mine, and a good deal of prospecting work is being done, and it would appear most probable that there are parallel lines of gold-bearing reefs (to the Morning Star line), for a reef has been traced to the east through the Last Chance and Geelong Extended claims, which has been shown by testing to carry good gold.

“Syndicates have taken up the abandoned Break of Day, Surprise, Hesperides, and Triangle claims, and are prospecting them.

“On the Chatterton, one of the northern claims in the Wilson’s River, a contract has been let for an adit-level, which is now in about 80 ft., and the owners seem very hopeful of striking the same reef as yielded such good returns from the Golden Site Mine.

“On the west of the Morning Star line the owners of the Jessica and Winifred claims have put in a drive about 60 ft. on the former claim, and have a well-defined reef with true walls, and the stone of which, assayed at the Dunedin School of Mines, gave payable results. This reef is believed to extend through Coal Island, as the owners of two claims taken up there report that they have followed a gold-bearing galena reef for some distance in their claims.

“At Te Whara Beach a claim has been taken up and a drive put in on a reef traced from the water’s edge for 45 ft., and it is reported that good results have been obtained from the mortar.

“Owing chiefly to the reports furnished to the Government by Mr. McKay, Government Geologist, in August, 1896, an Invercargill syndicate sent out a prospecting party, and, following that gentleman’s description of the country, they have succeeded in tracing what is believed to be the Morning Star line of reef for a distance of nearly three miles to where Mr. McKay spoke of striking the reef on the lower Wilson River, and also on the track cut by the Government from Puysegur Point towards the Waiau, a drive put in at this point producing stone which, on assay showed payable gold.

“During the year the Golden Site Company applied for and took up four of the adjoining claims that had been abandoned, and, for the purpose of providing further capital, reorganized and merged with the Golden Site Extended Gold-mining Company (Limited), with a capital of £85,000. 57,888 shares have been subscribed. Under the new management the reef has been traced on the surface for about 1,500 ft., and proved to contain payable gold. The company are putting down a shaft which, it is expected, at about 250 ft., will cut the solid reef under the Wilson River clear of the adjoining broken country. Operations are being proceeded with vigorously, and there were fifteen men all told employed, as shown by the last pay-sheet.”

On several other claims work is being proceeded with vigorously, but I have not details of what is being done. From all information that I have been able to get, I consider the prospects of Preservation Inlet as a permanent and payable quartz-reefing district are distinctly encouraging.

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

The Under-Secretary, Mines Department, Wellington.

No. 15.

Mr. N. D. COCHRANE, Inspector of Mines, to the UNDER-SECRETARY for MINES, Wellington.

SIR,—

Inspector of Mines' Office, Westport, 26th May, 1897.

I have the honour to report as follows on the gold-mines in the Marlborough, Nelson, and Westland Provinces for the year ending 31st March, 1897:—

WAKAMARINA.

Golden Bar Quartz-mine.—(7/10/97): From the old low-level cross-cut, 224 ft. in length, to the reef driving is being done to north-west on the lode by two shifts of two men each. The face is now 80 ft. in from the cross-cut, and of this about 30 ft. has been driven recently. The width of the vein is a little over 4 ft., and the dip is north-east at 68°. The reef is very hard, and the country strong, so that no timber is required. Air fairly good. No copy of the Act or rules, so I notified the legal manager to provide them. This company has acquired the ground formerly known as the Empire City Claim, but nothing is being done there at present. Five men in all are employed.

WAIKAKAHO.

Ravenscliff Quartz-mine.—(3/10/96): The only work doing is in the No. 2 level of the Waikakaho lease, where two men, who have been working on tribute at the face of this level, are now starting to take out 2 tons of stone as a sample at a point about 100 ft. in from the mine-mouth. This, with like quantities from the Kapai and Southern Cross leases, is to be sent to England for testing. Rules posted. At the Kapai Tunnel there are 200 or 300 tons of stone stacked at the mine-mouth. The reef at this mine cuts through the country, which dips differently on the opposite side of the lode, so the latter probably marks a fault-line.

COLLINGWOOD.

Johnston's United Quartz-mine.—(20/2/97): No work is doing at present, only Mr. Johnston and one man being at the mine, which is under offer to a syndicate.

Golden Ridge Quartz-mine.—(25/9/96): This mine is on the Taitapu Estates, West Wanganui, of which Mr. James Coutts is general manager and Mr. Radford is the mine-manager. An adit has been driven 125 ft. into the hill, and, although bending round, is said to have been in quartz all the way. At the face the width of the lode was about 2 ft. 6 in., but thicker further back. The course was north-east, and underlie to south-east at 45°. A winze is down 47 ft. from a second drive, which branched off from the first. This winze was on quartz for some 35 ft., then 10 ft. of blank ground, and is on quartz again in the bottom. Six men work in the winze and six in the level, in three shifts. Air-current by hand-fan, which gives a strong current when worked; but the fan is to be shifted to a better position outside the mine-mouth. No copy of Act. Report duly kept. A copy of the plan has since been sent me. The country-rock is different from what is usually met with in this province, being quartzite instead of slate, although there are alternating beds of the latter which clearly show flexuring of the strata, and it is in these folds that the quartz occurs. Hence the lode presents the appearance of a saddle reef, and may have great possibilities. The Australian Gold Trust is also mining on this estate, having put in a prospecting drive 85 ft. on the track of a reef, at which two men are at present employed, but this has since been stopped. In addition to mining, a number of men are engaged road-making and other surface work for the company. (18/2/97): Three shifts of two men each are now driving at a lower level to make connection with the bottom of the winze, and at present are in 60 ft. The face is in a banded and jointed slate. No work is doing in the mine above, but a tunnel is being driven through a spur at a lower level for the water-race to supply power for driving the battery. This tunnel will be 1,000 ft. long, and driving has been started at both ends. The eastern drive is in 196 ft., and the air is good; the western end is in 206 ft., and, although a hand-fan is used for ventilation, the air is not as good as in the other, owing to the prevailing wind acting against it. Mr. Radford has since written me that it has been improved by altering the arrangements.

Australian Gold Trust's Mines.—(18/2/97): No. 2 prospecting drive is in about 120 ft., employing three shifts, of two men each. It is being driven with a view of cutting a reef which has been sunk on by a winze to a depth of 125 ft., and which is now stopped. No. 3 prospecting drive cut a bedded reef 5 ft. thick at a distance of 105 ft. in. From this driving is being done on the course of the lode to north, employing four men, in two shifts. The width at the face is only 18 in., but the average may be taken at 3 ft. No rules, but these will be obtained.

LYELL.

United Alpine Quartz-mine.—(16/9/96): No. 9 level is being driven to the south, and the face has just struck the north end of the north block proper, although a short block of quartz has been passed through, and is now being stoped out. This was 50 ft. long in the level, but about 30 ft. higher it is only 25 ft. in length. Two shifts, of two men, are stoping here, the width of the lode being only 2 ft. Three shifts, of two men each, are employed in the level. Timbering all right; air sufficient, but 3 in. pipes are being led from the battery to the mouth of No. 7, in addition to the present line, and this will provide power for a fan if necessary. These pipe-lines convey the com-

pressed air for the air-winch and pump. On the surface a line has been cleared for an aerial-tram from No. 4 to No. 7 levels, and the foundations are being laid for the upper terminal. This will convey the quartz from the upper levels to the trams which connect with the battery. At present the quartz is being stacked at the mouth of No. 1. This level has been enlarged and retimbered. The lode, which dipped at first to west, has been found to underlie to east at a depth of 17 ft. A winze has been put down 60 ft., but the reef split up into leaders. The No. 1 level or cross-cut is being extended to west. The face is in about 200 ft., and at present is in decomposed and rather jointed brown slate. Air sufficient at present. The only other work doing by the company is a connection being made between Nos. 1 and 4 levels, which two men are completing. A party of four tributers are working in one shift in the leader level, 32 ft. above No. 1, and in one stope to the south. Air good, as the face has broken into an old level of Antonio Zala's. The prospects of the mine at present are somewhat uncertain. Twenty-five men in all are employed, including the tributers. (18/9/97): I found the passes from No. 7 to No. 6 level must soon close as a travelling-way. The latter level is worked out, but I notified the manager to have them kept open as a second outlet. This was subsequently objected to, and, in company with Mr. Wilson, the Inspecting Engineer, I revisited the mine in January, but at date of writing the question is not yet settled.

United Italy Quartz-mine.—(17/9/96): Three shifts, of two men each, are employed in this mine on tribute. At present the leader is being worked about 45 ft. below No. 3 level, and is about 2 in. in thickness. A set of timber needed at face; this will be put in. A good current of air circulates from No. 4 level.

Tyrconnel Quartz-mine.—(17/9/96): Stopping out the leader is being continued from the intermediate level, 180 ft. above No. 6. A pass is being put up to the No. 5 level in addition to the present travelling-way, which also provides good air. Only four men are now at work. Rules posted up, but no copy of the Act; one will be obtained. The prospects of this mine, I am informed at date of writing, are considered poor.

Lyell Creek Low-level Tunnel.—(16/9/96): The winze has been sunk to a depth of 155 ft., but in the last 30 ft. of this there is no quartz, it having been passed through, owing to the pitch or dip of the end of the block. At 125 ft. from the brace a drive has been opened out to north, and is in 36 ft. from the winze. This is the only work at present being done. The lode is here about 7 ft. wide, but tending to get narrower at the face. A good current of air at the bottom of the winze, but the pipes are not yet led in the drive; this is to be done. 12 ft. has been driven to the south of the winze, where the reef in the face is 7 ft. wide. The course of the lode is a little west of north, and it dips to east at about 60°, tending to get flatter as it is followed down. The retimbering spoken about at mine-mouth has been attended to. Rules posted up. Plan not at mine, but, as only six men are employed, it cannot be insisted on being kept forward under the Act.

WESTPORT.

Some work has been done in the Swanston Mine. Numerous claims have been taken up in the district, and surface prospecting is being carried on.

Some driving has been done in the Great Republic ground, nearer Westport, and an adjoining claim, the Britannia, has put in a tunnel and cut a reef, from which excellent specimens are shown. Having been fully occupied otherwise, I have not inspected these mines.

REEFTON.

Inangahua Low-level Tunnel.—(20/10/96): Work has been resumed in this mine, which is now the property of the Consolidated Goldfields Syndicate. Rand rock-drills are used for driving, and compressed air is led in in 3 in. pipes for most of the way; then the size is reduced to 2½ in. The pressure at the air-cylinder is about 50 lb., and no receiver is used. The distance in from the mine-mouth is over 3,000 ft. The air is led in the tunnel and out in boxes which exhaust by water-blast, and in addition to this the compressed air is turned on after firing, which keeps the smoke back from the face until cleared by the exhaust.

Merrie England Mine.—(17/10/96): A reef having been exposed by sluicing on the saddle near Soldier's Creek, Messrs. Salter and Gabriel sunk a winze on it to a depth of 66 ft., and half-way down have driven on it for a few yards. The lower half of the winze was standing full of water, but the quartz could be seen in the face over 3 ft. in width. A small subsidy was desired to assist in prospecting, and this has since been granted.

Progress Quartz-mine.—(21/8/96): No stopping is now going on, the only work being development of the mine by driving or cross-cutting and reopening passes or levels which the old company were done with. The old drive past the blind shaft to north has been reopened, but, only broken leaders being found, it has been allowed to close again. Further on in No. 2 level two men are cross-cutting to north. Air fairly fresh. The face of No. 2 has run into the foot-wall, and a cross-cut six yards to south has cut the track of the lode. No work is doing there now, but the No. 4 level in the Globe Mine is at date of writing being extended to connect with it. No. 5 level is being driven to south-east by three shifts of two men each, and is to be connected with the Globe workings. Four men are also cross-cutting to the line of reef, as the present face is off it. Air good. Return signal wanted at No. 5 chamber. About 140 ft. from the face of No. 5 a winze has been sunk 147 ft., and at 80 ft. down two men are cross-cutting towards the hanging-wall in the reef. Compressed air is used for winding, in place of the steam as formerly, and this is an improvement for the ventilation; but the lower levels are not likely to have a uniform current until connected with the Globe or mechanical means adopted. About 450 ft. from the mouth of No. 1 level a drive is being carried on to connect with the new main shaft. Thirty-six men in all are employed.

Globe Quartz-mine.—(19/10/96): No. 6 west level is now over 230 ft. into the Progress Claim. About 60 ft. back from the face a prospecting cross-cut is being driven to south-east. The level has passed through two breaks, or blank ground, 10 ft. and 35 ft. in length, the latter one extending close to the face, but is now in quartz again, about 7 ft. in width. This is now supposed to be a

different reef to the Progress if no faulting occurs, as it is not now in line with the latter. A rise is being put up from this level, and a winze has been sunk 125 ft. in depth on stone which is believed to be payable right through. The main cross-cut has been extended about 20 ft. through the country to a parallel reef, and on this a level has been driven about 60 ft. to where it cuts out. A winze is being put up a few yards to east from the main cross-cut on stone which is about 3 ft. in thickness, but on the level it would run 4 ft. 6 in. in width. The east level face is being driven ahead, although the stone has cut out. A fair current of air comes in the main cross-cut, but it is none too strong in the faces. Two shifts are worked, employing eighteen miners, in this level. At No. 4 level two shifts, of two men each, are driving to connect with the Progress battery level. Air good. To east of the cross-cut four men, in two shifts, are driving about 200 ft. in, of which the last 110 ft. has had no stone. Air not so good here, so I requested the manager to have it improved. He will have it seen to; a hand-fan will be fixed up if necessary. Driving is to be continued, and a connection will be made with the stopes below. In No. 5 level two shifts, of two men each, are driving to the west, and are in about 150 ft., of which the last 20 ft. has been in stone. The width of the lode is not yet known, but it is over 5 ft. A connection is to be made by sinking to meet the rise from No. 6. To the east of the cross-cut in No. 5 level eight men, in two shifts, are stoping abreast of the level, as the lode is wide. Two men are taking forward a leading stope for air, and four are driving on the track of the reef where the stone has given out, and are going to continue right in to the Larnach Claim. The timbering to which I directed notice at last inspection has been attended to. No detaching-hook, but one has since been fitted. Report behind. Ropes tested three weeks ago, and entry made in the report-book. Plan up to 25th June. On the 18th November a miner named William Johnston McLaren had occasion to go out on his own business to the shaft in No. 5 level, and by some unexplained circumstance he fell down to the next level, and was killed. Good and tight-fitting doors were on the shaft, and these were testified to as having been closed prior to Johnston's going out, so the accident can only be attributed to misadventure. (21/11/96): The main shaft is now down 35 ft. Requested that men be lashed to the rope in lowering, as this was not observed. Rising is being done to connect with the sinking. This shaft is being sunk to suit winding from deep levels, and consists of three compartments, two for winding and a man-way. The latter is 2 ft. 6 in. by 4 ft. 6 in., and the others 4 ft. by 4 ft. 6 in., in the clear. The wall-plates, end plates, and corner posts are 8 in. by 8 in. timber, and the centre posts 6 in. by 8 in.; these are backed by 2 in. lining, securely filled and wedged. At date of writing a depth of over 600 ft. has been reached, which is extra quick work, even although rising and sinking from the Progress drive went on at the same time as sinking from the surface. It will be sunk below the No. 7 Globe level before a start is made at crushing, and the sinking will still be continued. The lode should be sunk through at a depth of 1,100 ft. or 1,200 ft. Prior to date of writing connection between the rise and shaft has been accurately made, showing that excellent work has been done in the surveys.

Wealth of Nations Quartz-mine.—(22/8/96): The battery level is being driven north to connect with the old workings of the Energetic Mine, which are 170 ft. ahead. I notified the manager to keep the requisite boreholes in advance, as there was known to be a large quantity of water under considerable pressure in the old workings. Air rather dull; not as good as formerly, the face being 225 ft. ahead of the old filling shaft, so I requested Mr. Watson to have it improved. From the 200 ft. level a prospecting drive to south-east is being put in by three shifts of two men each. This level has been retimbered throughout, and is to be extended to north. In the 500 ft. level driving to south-east is being continued on the lode. A winze is down 130 ft. on the underlie from this level, and six men are at work, in two shifts, proving the width of the vein to the hanging-wall. (20/10/96): Air now led in in boxes in the battery level. A narrow prospecting drive from the 200 ft. level was being driven without timber, and, as there were some loose pieces on the sides, I requested that they should be taken down or secured. A man was put on to take down the bad places, but the drive was subsequently stopped. Ropes tested, and entry made in manager's report-book, which is duly kept. The battery level, where driving to connect with the Energetic, was also inspected on the 21st November, when rising was being done as the level was too low. On the 21st December the water was successfully tapped by the advance borehole, and at date of writing four men are engaged retimbering the bottom level of the Energetic Mine. This will drain the water from the latter, while at the same time providing stronger ventilation in the Wealth of Nations Mine.

Keep-It-Dark Quartz-mine.—When erecting new poppet-heads at this mine on the 26th June a workman named John McLean had his leg broken by a collapse through a guy rope breaking. (22/8/96): Six men are stoping about 90 ft. above the No. 6 level. Some timber requiring renewal in the travelling-passes, but the ladders are all right; the timbering will be attended to. A winze is being sunk from No. 6 level, and is down 78 ft., where the reef is about 3 ft. in width. Act and rules required. Report kept weekly. As the filling shaft, though still permitting a good current of air, has been allowed to become unfit for a travelling-way, I requested that retimbering should be done to maintain a second outlet, and work has been started accordingly. (22/3/97): Six men stoping in the day shift, and four in the afternoon. Timbering right, and air sufficient. Two men are retimbering the winze from No. 3 upwards, and four men are cutting out a chamber. Nineteen men in all are employed. Copies of the Act and rules have been obtained. Manager's report duly kept.

Hercules Quartz-mine.—(24/8/96): Three shifts of two men each are rising from No. 9 level to connect with a winze which has been sunk about 100 ft. from No. 8. They are up 55 ft. above No. 9, and have air led right up in boxes. A single shift of two men is cross-cutting from the No. 9 level to west, and are in some 20 ft. Plan up to 3rd ultimo. Ropes not tested recently, but Mr. Bray will have this done quarterly in future. The prospects of this mine are not very encouraging at present, but prospecting might at any time disclose a different aspect of affairs.

No. 2 South Keep-It-Dark Mine.—(24/8/96): No. 3 level is being driven to south on the track of the reef, which at places shows bunches of quartz. Air very good. Only four men in all are employed, as nothing but the prospecting is being done. No plan, such not being required by the Act. Ropes not tested lately, and no detaching appliance. Reports kept.

Royal Quartz-mine.—(26/8/96): No. 3 level has been extended past the old stoping to the boundary of the Golden Fleece claim, and thence to the north, and connected by winzes with the workings in that mine. The top of the winze requires to be fenced, and this Mr. Martin will have done at once. An excellent current of air circulating. At the boundary-line a cross-cut has been driven to east to the reef, which shows about 1 ft. of quartz. No work is doing in these higher levels, but driving is going on to south from the Golden Fleece No. 5 level, which is 35 ft. across the boundary, employing three shifts of two men each. The reef is rather broken at this point, but it is believed to be between two blocks.

Golden Fleece Quartz-mine.—(26/8/96): From the extension of the Royal No. 3 level a winze is down 100 ft. to the intermediate, and from it at a point 93 ft. further north another winze is down 130 ft. to the No. 5 level, which is 600 ft. in depth down the Golden Fleece shaft. At the old chamber two shifts of two men are cross-cutting to west. Timbering right, and air good. Cover required at brace, and fly-wheel to be fenced. I have since been notified that these have been done. At date of writing Mr. Foster informs me that a winze is being sunk to connect with the low-level tunnel. It is down 140 ft. on the underlie, with about 1 ft. in width of gold-bearing stone in the bottom. This leaves a further depth of 560 ft. on the dip of the vein to the low level.

Inglewood Extended Quartz-mine.—(26/8/96): The only work doing is driving to south in the No. 4 level, at which two men are employed. For about 50 ft. driving has been through a dyke—not determined, but probably diabase—which runs to west-south-west, and they have just got into siliceous slate on the south side.

Victoria Quartz-mine.—Mr. Knight informs me that no work is now doing in the low level, but that a surface tunnel has been driven above the old No. 1. It is in 250 ft., and 90 ft. of the 130 ft. to the surface has been stoped out. The width of the vein is 2 ft., and he states that, although the stone assays $1\frac{1}{2}$ oz. to the ton, they only recover 12 dwt. at the battery.

Sir Francis Drake Quartz-mine.—(22/10/96): No winding is being done now, all the work being done from the No. 1 level, an adit running into the hill on a level with the brace. At about 300 ft. it cuts the reef, which runs south-south-east. One stope is working 13 ft. above the level, on a reef about 2 ft. 6 in. wide. Timbering all right. A fair current of air circulating, as there is a connection with the shaft workings, which are kept baled out. In an old cross-cut to east driven by the Happy Valley Company the ground has come away or fallen and exposed a reef on which driving to north has been commenced. Dynamite on roadside, but this will be attended to in future. Seven men in all are at work, in two shifts.

Inkerman Combined Quartz-mines.—(21/10/96): These mines, which have been at a standstill for some time, have been taken up by an English company, for which Mr. G. G. Dixon is general manager, and the work of reopening is being pushed ahead. A winze is being sunk from the No. 3 level at a point about 70 ft. from the shaft. Air good. Timbering sufficient. As work has just been started several requirements of the Act have to be seen to. A winze from the surface near the main shaft is being reopened with the view of prospecting the lode. Report duly kept. Fourteen men in all are employed, exclusive of those retimbering a level on the Rainy Creek Fall, where nine others are at work. I am informed that the number employed has subsequently been largely increased, and at date of writing seventy miners are at work developing the claims. The low-level tunnel is in 205 ft., and the total distance it will require to be driven is 3,760 ft. It will be connected with the shaft, and will cross-cut several known ore bodies giving backs of 460 ft., 680 ft., and 570 ft. Rand rock-drills are used, driven by compressed air conveyed in a line of 3 in. pipes 1,000 ft. long to a receiver at the mine-mouth.

The Exchange, Cumberland, and Big River Mines were not inspected during the year.

BOATMAN'S.

Fiery Cross Quartz-mine.—(23/10/96): No work is at present being done at this mine.

Welcome United Quartz-mine.—(23/10/96): No. 5 level has been retimbered, also the winzes to No. 6. In the top winze the ladders were at one place overhanging. These I requested to be altered, and I am informed this has been done. Retimbering is being continued in No. 6 by six men, in three shifts, and they have 30 ft. more to go to reach the winze, which it is intended to reopen underfoot. The air comes in No. 6 and up the winzes, where there is a fair current, but it is dull where the men are working. It will, however, be led in in boxes if work is continued. No work is now being done in the No. 10 level, down the Eureka incline, or from the blind shaft, but retimbering is being done a few feet above No. 9. The air is being drawn by the exhaust fan, and, as well as this, compressed air at high pressure led in in pipes to near the work is being forced in, so, although the air is not good, some black-damp being given off, all is being done that can be expected in such a place. Twelve men in all were employed, including two in the Homeward Bound ground. At date of writing I am informed a cross-cut is being driven from No. 8 level.

LANGDON'S.

Victory Quartz-mine.—(1/12/96): Three stopes being worked, employing six miners and trucker, and usually three others at outside work. The lode has been worked out from the top level to the surface outside the cross-cut, and four stopes in height inside of it. From No. 1 level a winze is down to No. 2, and it is 30 ft. below No. 1 that stoping is going on at present. The width of the lode varies from 1 ft. to 2 ft. 6 in., but is very irregular. Rules and Act required.

Julian Quartz-mine.—(1/12/96): No one about. Some retimbering has been done in Vivian's old level, about 200 ft. in. Reef irregular where a stope is being opened out above the level. Usually two men are at work, but to-day they are said to be prospecting other parts of the lease.

GENERAL.

At date of writing the Inangahua Low-level Tunnel is in about 4,000 ft., and the Venus line of reef should soon be cut. Some 700 ft. ahead the line of the Golden Fleece reef should be met, but to connect with the winze being sunk from that mine will require 300 ft. driving to north on the course of the vein.

A forty-stamp mill is to be erected by the Consolidated Goldfields near the site of the old Globe battery, and a water-race for driving-power, which will be $10\frac{1}{2}$ miles in length, is in course of construction. About two miles and a half have been completed, and forty-eight men are at work on the remaining portion.

No work has been done at the Larry's Creek group of mines for want of a dray-road.

Marina prospecting has not turned out as well as expected, but at Jackson's there has been sufficient encouragement to continue.

On the Victoria Range discoveries of rich blocks of stone lying loose on the surface in considerable quantities have induced many parties to take up claims, and a lode in the solid is said to have been recently discovered.

Prospecting has been continued on the Paparoa Range, with results said to be highly satisfactory to some of the claim-holders, and next summer should see important developments.

There have been no returns from the Donnelly's Creek Mine during the year.

Mr. Zala informed me he was doing nothing at his mine, and did not appear to regard the prospects as very encouraging.

ALLUVIAL MINING.

MAHAKIPAWA.

King Solomon Mine.—(5/10/96): This mine has been stopped for about two months, and the water is right up in the shaft. It is intended to increase the capital and work the flat on a large scale.

Barry and Wearne's Claim.—(5/10/96): This is the old Davis and Carr ground. Only two men are at work, sluicing. The prospects are fair, but there is not much ground left to work.

Hibernian Extended Claim.—(5/10/96): This claim has been bought by the tributers, but little or no work has been done on account of the water, and at present they are flooded out.

Boys' Own Claim.—(5/10/96): Only three men working near the shaft, and it is expected to be worked out very soon. Timbering, where working, all right. Lyford and party have held this claim right through from the start of the rush, and since date of inspection they have informed me they have worked it out.

WAKAMARINA.

Wakamarina Gorge Claim.—(7/10/96): The dams have now been erected, and work has been started at the lower end of the claim. The piles have been driven 7 ft. apart, and are 14 in. square. The width at top of the dams is 4 ft. and at bottom 7 ft., Mr. Hill informs me, and between the walls is packed with shingle and puddled-clay. The lining is $2\frac{1}{2}$ in. in thickness. The paddock being taken out is 22 ft. long by the full width of the gorge. The drift is raised in cages running on iron-rail guides up a frame erected for the purpose, but no men are allowed to ride. It is intended to work the upper part of the gorge by driving, and thus avoid handling the overlying drift. Twelve men in all are employed.

COLLINGWOOD.

Parapara Hydraulic-sluicing Company.—(28/9/96): No. 1 face has been opened up, and a cut made through the spur some 700 ft. in length. At the deepest part it was over 100 ft., but now it is in low ground, with a face about 20 ft. in height. The drift is composed of clay, with quartzite and slate pebbles, and at times irregular blocks of hæmatite. The main bottom appears to be the ragged edges of the older limestone, which may render the saving of the gold very difficult, but it is not yet certain if the limestone seen is the solid or only very large blocks. The tail-race, 700 ft. long by 2 ft. 6 in. wide and 20 in. deep, is partly paved with stones, and the remainder is laid with angle-iron ripples at a grade of $5\frac{1}{2}$ in. to the 12 ft. A 4 in. giant nozzle is used, with a head of 300 ft., and Mr. Guthrie informs me $12\frac{1}{2}$ heads of water are at present being used. Three shifts are worked, employing four men in the day and two in each of the others. No men are allowed near the face after dark. No. 2 face, after working some time, has been stopped for want of fall. Both these faces adjoin the Parapara River, and, although a large amount of material has been sluiced away, the expectations formed have not been realised. The elevators are further down on the flat, below Messrs. Washbourne's works. They started some ten months ago, and worked to a depth of 63 ft. The drift is all fine gravel, with alternating layers of clay. Very little gold was obtained at first, but I am informed the face was in payable drift when stopped in February last, by which time the fall for the time being was exhausted. The drift apparently got poorer the further out in the flat. The depth at the elevators is 43 ft., but they were raising the drift 20 ft. higher to get a dump for the tailings.

WESTPORT.

Clapton's Drive, Mokihinui.—(4/6/96): This is a prospecting-drive in the terrace fronting the sea above the worked-out ground which paid so handsomely in the early days. The tunnel runs in south-east, and Mr. Clapton hoped to find a payable back lead, as gold has been found on the terrace, but he has since abandoned the ground.

Halligan and Party's Claim, Addison's.—(17/7/96): Six men in the party are at present sluicing at a face 25 ft. in height. A shaft has been sunk on the upper side of the road 18 ft. in depth. This requires timber, which is to be put in. The intention is to connect with the main tail-race, as a new face is to be opened up here. From the tail-race a rise has been put up 33 ft. to connect with the shaft, but, as there is a layer of running sand to be passed through, all further work is to be done by sinking.

Shamrock Claim.—(30/7/96) : This claim was inspected, as James Hepburn had his jaw broken by a fall from the face. He was boss of the shift, and had been working at the nozzle, but had gone to remove some stones near the face, and had risked too much. Mr. Kennedy, the manager, was not present at the time, but half an hour before had considered the face quite safe. I requested some loose pieces in the tail-race to be taken down or secured, and some timbering to be done, as the reef was soft and treacherous. Mr. Heise was subsequently appointed manager, and I found the tail-race was attended to; but in opening up a chamber for the hopper a new tail-race to north a miner named Frederick John Erickson was killed, on the 24th November, by a fall of reef. The place was driven too far without timber, nearly a set length, which he had been told to put in; there was a set lying prepared at hand. Ten men in all are employed at this claim, but the prospects of late have not been encouraging.

REEFTON.

AI Sluicing Claim.—(10/6/96) : This subsidised tunnel is being driven to prospect a small flat between Cronadun and Boatman's, and is now in 589 ft. Air-shafts are sunk as required, so the ventilation is good. (25/10/96) : Now sinking the sixth air-shaft, and the distance in is 845 ft. to the face. These shafts, as well as providing air, serve to prospect the drift overhead. Gold has been met, and I tried some prospects, which turned out very well, but the party considered it not yet proved payable. Shortly afterwards they informed me they considered, after further prospecting, that the drift would pay, so this subsidy has attained its object, and no further payments were made.

GREY VALLEY.

Sulky Gully Water-race.—(29/10/96) : The tunnel through the spur has been completed in all 483 ft. Thirty chains of the race have been cut, and fully a chain of rock-cutting and extra driving has been done, in addition to the main tunnel; so the subsidy has been fully earned.

GENERAL.

Mahakipawa Creek is now deserted compared with former years, but a good few men at date of my last visit, in October, were still making a living working odd corners of the old claims. Most of these have since left for other fields.

In the Westport district mining has received a great impetus by the advent of the General Exploration Company, represented by Messrs. Pielsticker and Dencker. At Lake Rochfort and Christmas Terrace, near Fairdown, extensive works are under weigh for sluicing on a large scale, and employing at present about sixty men.

At the Four-mile they have taken up 260 acres, and negotiations have been going on for the leasing of the Argyle dam and water-races from the County Council.

Near Addison's, at their Bendigo and other claims, some five miles of head-race and a mile of tunnel tail-race are being constructed; and at Waite's *pakihis* contracts have been let for sinking twelve shafts to more fully prospect the ground. These at present employ about forty men, but a hundred more are advertised for, and are expected to be at work shortly.

I have, &c.,

The Under-Secretary, Mines Department, Wellington.

N. D. COCHRANE,
Inspector of Mines.

No. 16.

Mr. JOHN GOW, Inspector of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.
SIR,— Inspector of Mines' Office, Dunedin, 31st March, 1897.

I have the honour to forward the usual annual report on the several mines visited by me during the year ended 31st December, 1896.

DREDGES.

Eureka Dredge, Alexandra.—(1/5/96) : This dredge was being launched at the time of my visit; it is to work the Clutha river-bed where launched, about half a mile above the Alexandra Bridge. Her dimensions are: 80 ft. long; pontoons 9 ft. wide each, and 5 ft. deep. The ladder-way is 4½ ft. wide, and the ladder 53½ ft. long. She is capable of dredging 36 ft. deep from the water-surface. The capacity of buckets is 3 cubic feet. The gold-saving appliances are—cylinder with ½ in. holes, under which there are tables of 48 square feet surface, and boxes 3 ft. wide and 24 ft. long. The engine is compound, of 12-horse power nominal, made by Marshall, of Gainsborough and London, and is greatly admired for its completeness and beautiful finish. The boiler is 12 ft. by 4 ft., and has forty-eight tubes, of 3 in. diameter. The dredge is to be fitted with a tailing elevator 36 ft. long, capable of stacking the tailings 20 ft. above the water-level. There are erected hog-posts, standing 14 ft. above the deck, and having tie-rods extending from the bow ladder frame to the outer end of the tail elevator. The tailing buckets are made to slide on a smooth iron surface on the frame instead of on rollers, as on those ladders first made. It is said the friction is very light. (12/6/96) : Most of the machinery is now fixed in position, and deck-houses to cover the boiler, engine, and winding gear are now in hand. The gold-saving tables are yet to be made, and various other things to be done, which may be finished in about two weeks' time.

Crookson's Dredge, Lowburn.—(16/5/96) : At the time of my visit the dredge was afloat, and the machinery was put in motion for an hour or two, to see if every part was in working-order. The trial proved satisfactory, after which the housing-in had to be completed, and other preparations made to test the dredging plant, which work was to be done by commencing dredging operations a few chains above where the dredge was launched. The object of thoroughly testing all the working-

parts here before dropping down stream to the claim was the advantage of having the blacksmith's shop and other appliances in good order at hand. (19/6/96): I again visited the dredge, and found it in full swing a few chains above where it was launched. Sufficient work had not then been done to test the value of the ground at that place. I learned from Mr. Crookson that in consequence of the small flow of water in the river there was not sufficient at the island to float the dredge to the claim. He therefore intended winning a little gold, if it is there, till the depth of water will enable him to get the dredge over the shallow part at the island, which is quite handy to his claim.

Clyde Dredging Company, Clyde.—(16/5/96): This dredge is now afloat, and in design is considered by some much in advance of all other dredges built in Otago up to date. She is 93 ft. long by 27 ft. wide over all. The bucket-ladder is 60 ft. long, and remarkably strong. The tail elevating buckets are of an improved shape, and are intended to carry away all sand and gravel washed. A second small set of elevators is to be erected to lift the grit and fine sand passing over the gold-saving tables, which fine sand will be emptied into the main elevators at the level of the deck and discharged with the coarser gravel some distance away from the tail end of the dredge. The object of the tail elevator is to give the dredge plenty of room in deep ground, or where a large quantity of loose gravel has been, or is being, deposited in the river by terrace-slucers. In order to strengthen the dredge, and prevent "hugging," she is fitted with two sets of hog-posts, 28 ft. high, four in each set, diagonally braced, and having long iron tie-rods at top from the ladder-hoisting frame at the bow to the outer end of the tailing elevator. This deck erection so high is quite a new feature in dredge-construction here, and may probably be generally adopted when deep ground is to be worked.

Manorburn Dredge, Alexandra.—(18/6/96): The Manorburn Dredge will be completed and working in about two weeks from date. The pontoons are 75 ft. long and 11 ft. wide each. The ladder-way is $4\frac{1}{2}$ ft. wide. The ladder itself weighs 4 tons, and is 53 ft. long. There are thirty-two buckets, each weighing 3 cwt. 20 lb., and capable of lifting 3 cubic feet each. The washing cylinder is 16 ft. long, which is much longer than any other in the district. The perforations in the cylinder are only $\frac{3}{8}$ in. in diameter, consequently it distributes the material over a much larger surface than others in the field do—viz., 220 square feet of gold-saving tables, from which the sand is discharged directly into the tailing buckets, which in turn cast the tailings some distance away behind the dredge, where, if necessary, they can be stacked to a height of 24 ft. above the water-level. The engine is by Marshall, of Gainsborough and London, and is 12-horse power nominal, or, say, 40-horse power if required. The dredge will be capable of dredging 90 tons per hour. The fall in the gold-saving tables is one in ten, and they are all covered with cocoanut-matting. There is to be a patent "save-all" fixed immediately under the top bucket-tumbler. There are other improvements being introduced on the tail elevator to save friction and wear.

Golden Gate Dredge, near Island Block.—(22/6/96): Dredging operations were started a few chains below the Island Block line of pipes, where some good ground was met with, but it did not prove as extensive as the shareholders wished. Since the good patch was worked out some prospecting has been done lower down the river, but up to the time of my visit no soft bottom or payable ground had been found. I think there is a probability of finding payable ground in the flat on the east side of where the ground is now being prospected. The county road, however, occupies some of the most promising part of the flat. The dredge is in good order, and is capable of doing a large amount of work. The gold-saving appliances are up to date.

Golden Bank Dredge, Glenora.—(20/7/96): This is No. 2 dredge at this place; it is working the adjoining claim to the first dredge here, and is on the lower side of the bridge. Her dimensions are as follow: 90 ft. long, 22 ft. wide (including the ladder-way), and she is capable of dredging to a depth of about 40 ft. The depth of ground at present being worked on the west side of the creek, and close to the hill side, is only 20 ft., with a hard-rock bottom. So far as the ground had been tried up to the time of my visit, the bottom was reached after passing through a body of stiff clay, similar to that found in Nelson's ground—the adjoining claim. This stiff, tough clay, although it is said to contain a small quantity of fine gold, is being put directly into the revolving cylinder, through which it rolls in lumps, and is cast away with the tailings. Some effort should be made to save this fine gold. The buckets are capable of lifting 2 cubic feet each, and the speed of travel is eleven buckets per minute. The buckets, however, are not always full, or even half-full, in consequence of the solid character of the material generally met with. The cylinder, 12 ft. by $3\frac{1}{2}$ in., is somewhat differently constructed to any others used in Otago. Instead of perforated iron plates, it is built of $1\frac{1}{2}$ in. by $\frac{3}{4}$ in. bars, spaced apart, placed lengthwise, and having at intervals of a few inches $2\frac{1}{2}$ in. square bars placed parallel with the others, thus presenting an uneven surface to the material revolving therein, and thereby assisting to some extent to reduce the clay balls on their passage to the tail end. The sluice-boxes, probably 26 ft. in length, are $2\frac{1}{2}$ ft. wide, and the gold-saving tables are 9 ft. by 9 ft. The dredge is fitted with a tailing elevator, which was not being used at the time of my visit; it is capable of depositing the tailings to a height of 12 ft. above the water-level. This dredge plant was designed and constructed by Postlethwaite, of Dunedin. It is said half a ton of Castle Hill coal is used in each eight-hours shift, at a cost of £12 per month. The engine is 12-horse power, and works the plant with three plies of rope. I instructed the manager to at once rail off the belt driving the centrifugal pump, and also to provide life-saving appliances.

Nelson's Dredge, Glenora.—(20/7/96): Since my previous visit Mr. Nelson has added to his plant two puddling-pans, which are placed on each side of, and near the head of, the sluice-boxes. The stuff, when emptied from the buckets, is about equally divided at the drop, and, with the water, passes into the pans, in which there are harrows of the old puddling pattern constantly travelling round. The stuff is being constantly discharged from the puddlers at an opening at the side level with the floor of the sluice-boxes, through which the *débris* passes out to the tailing-dump, where small balls of clay are plentiful, and it is admitted they contain fine gold. If the appliances were perfected there should be no loss of gold. Most of the gold obtained is gathered

from the pans, in which all the clay does not remain long enough to be dissolved. Mr. Nelson admits he is losing fine gold.

G. Foreman's Dredge, Tapanui.—(25/8/96): This small dredge is working in the Tapanui Stream, a few miles above the Conical Hills coal-pit. It is the highest up the stream of the three dredges already started in this locality. The whole plant is certainly a long way behind the times. The length of boat is 35 ft., and width 15 ft. over all. The capacity of the buckets is 1 cubic foot each. The dredge is capable of dredging to a depth of 10 ft., and is being worked in two shifts daily, two men being in each shift. The engine is a Marshall, portable, of 5-horse power. The sluice-boxes are 25 ft. long and 18 in. wide, fitted with perforated plates and matting. The gold is very fine, and not unlike that found in the Molyneux.

G. McKenzie's Dredge, Tapanui.—(25/8/96): This is also a very small dredge. Dimensions: 40 ft. by 20 ft. by 4 ft. The buckets are of two sizes, and their capacity is from 1 to 2 cubic feet. The depth dredged is from 5 ft. to 7 ft. and 10 ft. The shallowest is the richest ground. The sluice-boxes are 20 ft. long by 2 ft. wide. Shaking tables discharge the stones at the end of the dredge. The cost of working the dredge is 10s. per day, and coal is the fuel used. The engine is portable, and of 8-horse power.

Patterson's Dredge, Tapanui.—(25/8/96): Length of dredge, 49 ft.; width, 19 ft.; and depth, 3 ft. 3 in. The depth of dredging is from 7 ft. to 14 ft., and the wash is generally 2 ft. thick; sometimes only a few inches rests on a "lias" bottom. The capacity of the buckets is 1 cubic foot. A portable Marshall engine, of 7-horse power, does the work. The sluice-boxes are 25 ft. by 18 in., with ripples and perforated plates. This little dredge is more shapely than either of the other two on this stream, and is much better equipped.

Electric Gold-dredging Company, Kawarau.—(18/9/96): The dredge has lately been removed from a short distance above the Bannockburn Bridge to a spot much higher up the river, and only a short distance below the gorge. The reason for shifting, the manager said, was that "the work was too heavy." Judging from the size of many of the stones in the wash forming the banks of the river, I can imagine what the bed of the stream is like in places, and therefore do not doubt his statement. There is, however, a splendid bottom to work from, and with care there should be no gold left behind. The dredge is 92 ft. long by 23 ft. from side to side. The capacity of the buckets is 2½ ft. each, and the length of ladder 70 ft. from centre to centre; it is capable of dredging to a depth of 45 ft. The engines are by Marshall and Son, Gainsborough, and are 12-horse power nominal. The centrifugal pump is 10 in. in diameter. The washing-cylinder is 3½ ft. in diameter, and the gold-saving tables are 18 ft. by 9 ft., covered with matting and sheets of expanded metal, which are said to answer the purpose of protecting the matting and saving the gold very well. There has been a suspicion for some time past that gold was being lost from the tail end of the cylinder with the shingle. In order to ascertain for certain if it were so a short box, with matting and longitudinal ripple-bars placed therein, was fitted at the end of the cylinder, and the result is the saving of 1 oz. of coarse gold per week. This is a proof that the cylinder is several feet too short. I think others have quite lately discovered the same mistake in the length of cylinders. The manager intends at an early date to make other improvements by fixing a "catch-all" immediately under the buckets after leaving the tumbler, since much of the sticky sandy bottom of the river in this locality adheres so much to the buckets as to be again cast into the river before they reach the water. The coarse gold found in this claim is, of course, lying in the bottom, and the loss of only a little bottom from time to time may be a serious loss of gold. No time should be lost to remove, by a water-jet or otherwise, all the sand from the buckets while passing over the "catch-all," and the saving so effected should be made known to others, so that they may do likewise. The manager showed me a few ounces of gold which he had obtained where the dredge is now working, and I consider it a splendid sample. I would class the bulk of it as coarse gold. Some of the pieces were angular and ragged, with quartz adhering, indicating that they had travelled only a short distance. This is a clue for prospectors for gold-bearing quartz reefs, which probably exist only a short distance up the Kawarau Gorge, and not far from the river.

REEFS.

Canada Reefs.—(15/4/96): The subsidised tunnel is now following what appears to be two well-defined walls of a lode, filled with laminated schist and small quartz veins. In places a little fine gold has been found by panning the *débris* found between the walls. The men are very hopeful of finding the lode within the distance to be subsidised by the Mines Department. When the tunnel has been driven to a perpendicular line from the crown of the hill immediately under the old workings it will, it is said, be 450 ft. below the floor of the old workings.

Donaldson Brothers' Quartz-mine, Macrae's.—(29/7/96): The stone is still being quarried out near the surface, and carted from the top of the hill to the battery in Deep Dell Creek. The wagon carries 5 tons at a time, and makes four or five trips per day when stone is wanted at the battery. There are ten stampers and a Huntington mill, all of which were in full swing at the time of my visit. The mill should be made to put through five times the quantity it is doing now. There is plenty of stone.

W. Walters, Barewood, Scottie's Gully.—(13/10/96): This mine is situated at the northern end of the Barewood line of reef, in the Museum Reserve, on the west side of the Taieri River, where so many claims have been held for some years past, and little done generally to develop them. Two of them have been worked spasmodically on too small a scale to succeed, so they are now idle. W. Walters, who at one time had the management of one of these mines, never lost faith in finding good payable stone on that line of reef (two miles and a half long). Therefore, when not working for the company, he spent much of his time prospecting, and eventually opened the mine at Scottie's Gully, where the underlay shaft is now down 90 ft. on a very promising body of stone from 3 ft. to 6 ft. thick. At the present level the lode has been followed about 60 ft. on

each side of the shaft, and stoping is going on. The country-rock is hard, and stands well. The stopes are well timbered, and then filled up with *débris*, which filling is very necessary in consequence of the very flat underlay of the lode. The body of stone in the lode is of splendid colour, and well mineralised. The gold appears to be evenly distributed in very fine particles throughout the lode. Walters says it averages 15 dwt. per ton. The stone and drainage are hoisted by a horse-whip. Three hours' steady work in the twenty-four is required to bail the water out. The stone is carted two miles and a half to the Flat Stream battery, and the roads are so bad that it requires three good horses to draw 25 cwt. each load. The small battery of five stampers is driven by a portable engine of 8-horse power, and it is said it crushes from 50 to 60 tons of stone per week, working full time. Five tons of Fernhill coal are consumed every week; it has to be carted five miles on a very bad road. Wages, 8s. per day, and a lump-sum of about £30 is paid weekly.

Saddle Hill Gold-mine, Green Island.—(3/10/96): I understand this mine was in full work about fifteen years ago. It then stopped for a time. The last mining done was about twelve years ago, when all work ceased, as it was found the yield per ton was not sufficient to pay expenses as work was then carried on. Up to the above date the stone treated came from many places on or near the surface along the line of reef or reefs—there are said to be two, running parallel—to a depth at one place of about 60 ft., following the underlay of the lode. I understand that all the stone treated at the battery proved to be gold-bearing to the extent of several penny-weights per ton, but it was then discovered that a large percentage of the gold went away with the tailings. As a proof of this, the purchaser of the tailings gave £30 for the heap and made a handsome cheque out of it. I was told that during the time the mine was being worked 5 tons of the stone was forwarded to Ballarat to be thoroughly tested. This stone was divided into two equal parts and crushed at two batteries (2½ tons each), and the yield was 14½ dwt. and 16 dwt. respectively. The return from similar stone at the company's battery was only 3½ dwt., thus showing a big loss somewhere. Before finally stopping all mining work a vertical shaft was sunk a short distance from, and on the north side of, the lode to a depth of 125 ft.; a few feet above the bottom a chamber was then made to the reef, which had thickened from 3 ft. at the surface to 12 ft. at this level, showing a well-defined lode with splendid smooth walls. The opening here made in the lode shows that a considerable body of stone had been removed, exposing a few yards in height of the foot and hanging walls. The shaft had remained full of water from the time of the stoppage, about twelve years ago, till within a few days of the date of my visit, when it was bailed out in order to procure a few tons of stone from the 125 ft. level to be thoroughly tested by the new crushing plant lately erected at the School of Mines, Dunedin, and 2½ tons were sent there yesterday. The drainage into the shaft is estimated at about 140 gallons per hour. I found the shaft in good order and the timber quite sound. It is, however, too small to be of any other use than that of a bailing-shaft for that or any other level. The standing timber in the mine remains as firm as on the day it was fixed in position. There did not appear to be any loose stone or rock in the floor of the level. The battery plant, of thirty-two stampers, appears to be in good order, but is *minus* the engine, boiler, and gold-saving tables, all of which were removed some time ago. The buildings are in fairly good order. The water-supply in the locality, notwithstanding the several reservoirs constructed in suitable places, is not nearly sufficient to supply such a large battery. There are, however, apart from this, some most favourable facilities for working this mine, which are not equalled in any other quartz-mine in Otago. Coal can be delivered on the spot at a cost of 6s. per ton, and mining timber can be delivered almost on the spot by a branch of the Government railway, which reaches South's brick-yard, within 800 yards of the battery, and to which a tram could be laid at an easy downhill gradient at small cost. The loss of gold in the tailings some years ago is a matter that can now be prevented, and stone that did not pay for working then can be made to pay handsomely now. At the present day it requires a very small yield per ton to pay where the lode is 12 ft. wide. It is said there are several gold-bearing reefs in this locality that are well worth a trial shaft to some depth from the surface, which work could be done at no great cost if the 12 ft. lode were being worked at the present shaft level.

Victor Emmanuel Quartz-mine, Macetown.—(15/9/96): A low-level tunnel in the line of reef started from and on the west side of Bush Creek is now in a distance of 387 ft. on stone going westward, and is to be continued for an indefinite distance to test the value of the reef at a great depth from the surface of the high hill, where considerable mining was done some years ago. Should the reef be found to live at this low level there will be, it is said, about 1,000 ft. of backs. The workmen speak very hopefully of the future prospects of the mine. The tunnel is in good order, and the country-rock generally stands well. Timber is put in wherever thought to be loose. There is in the gully, a few yards below the mouth of the tunnel, an overshot waterwheel which works a four-stamp battery, but, since the wheel is old and likely to break up any day it is being used, it is intended at an early date to replace it with a Pelton wheel capable of working a fair-sized battery. The cost of the new power, when completed, will be very trifling, since the length of race to obtain 140 ft. head will be only 12 chains in fairly good cutting. The men at the mine pointed out to me where there were other reefs on the south side of, and running parallel with, the Victor Emmanuel, all of which are said to be seen on the surface at a considerable elevation, and at present covered with snow.

Premier Quartz-mine, Macetown.—(15/9/96): The adit was examined from end to end, also the dip-tunnel, and found in first-class order. Massive and costly timber is being used throughout the mine. Some stone is being stoped near the end of the main adit, but it is said to be not gold-bearing. At the bottom of the dip-drive a cross-cut is being put in to the south, but at the time of my visit no lode had been found. At the top of the dip-drive is placed a powerful dynamo and very compact winding plant. The power is carried by wire from the battery plant. No stone is being crushed, nor has any been crushed for some months past. I did not see Mr. Stanford; he was said to be at Coromandel.

Tipperary Quartz-mine, Macetown.—(14/9/96): The low-level tunnel reached the line of reef some time ago, but up to date no reef at that level has been found. The supposed lode-line is still being driven on eastward, and will no doubt be continued for an indefinite distance so long as there is money available. There is a tunnel being driven westward on the level of the old workings, and at the time of my visit a small gold-bearing reef was making, but as yet no one can judge of its extent or value. In my opinion the continuation of the reef should be looked for to the westward and not to the eastward.

Sunrise Mine.—There is nothing being done at present on this reef in consequence of the large body of snow lying on the ground.

Lawrence Brothers' Quartz-mine, Bannockburn.—(17/9/96): I found five men at the mine, three of them laying a tram on the surface from near the line of lode to a level a little above the battery plant. The other two men were sinking a shaft from the surface at the lode-line to a level that would admit of a truck being tipped on the battery floor. The shaft will be utilised as a shoot to hold and convey the stone to the battery trucks. The battery was idle at the time of my visit for the want of water, and the main adit on the lode was filled up with stone, so that I could not get into the mine.

Star Quartz-mine, Carrick Range.—(17/9/96): Lawrence Brothers have purchased the old Star reef and battery plant of ten stampers, *minus* the engine and boiler, both of which were removed from the site some time ago. The new owners have already put in a tunnel 240 ft. to the reef at a level which will enable them to dump the stone from the tunnel-mouth into the bin in front of the stampers. The motive-power to be used will be a Pelton wheel, and the water is to be got quite handy, at a considerable elevation, from the Carrick Water-race, which gets its supply from Coal Creek. This creek empties into the Nevis. When the battery was working years ago the cost of coal delivered at the mine was £1 15s. per ton—£19 per week. The cost of water at the present time to do the same amount of work is estimated at £4 1s. per week; therefore, low-grade ore that would not pay to handle at this mine some years ago should now pay handsomely when crushed by water-power.

Golden Gate Quartz-mine, Carrick Range.—This old mine is in the neighbourhood of the Star Mine, and has lately been taken up. Some men are now engaged prospecting, with a view of getting out a trial crushing of a few tons. I did not visit the mine.

McCabe and Sons' Young Australia Mine.—(17/9/96): This mine was worked extensively many years ago, and was eventually abandoned as not payable with a yield of from 6 dwt. to 7 dwt. per ton. McCabe and Sons, of Bannockburn, intend to give it another trial. An adit 60 ft. perpendicular below the floor of the old workings is now in hand, and at the time of my visit was driven 140 ft. in hard rock. The distance yet to drive to cut the reef is estimated at about 200 ft. It is said the lode is from 2 ft. to 3 ft. thick. If this statement be true, the mine should pay these men very well, since they can drive the battery by water-power at a probable cost of 1s. per ton for actual crushing. Timber is very costly delivered at the mine, which is situated on the top of the Carrick Range, where a body of snow was lying at the time of my visit.

Achilles Quartz-mine, Skipper's.—(21/9/96): The working-places in all the levels (four) were examined and found in first-class order. The timbering in the main levels appears to be carefully attended to and renewed whenever found no longer able to stand the weight or side pressure. There is a fine body of stone, 8 ft. thick, at the bottom level, where gold is visible not only in the lode, but also in the laminated quartz schist 1 ft. or 2 ft. thick on the hanging-wall side of the lode, and this was particularly noticeable, I was told by the miners working at the face, where the schist is anticlinal in form. The gold in the laminations is thinly spread over the surface like paint. I could not find a specimen during the few minutes I was there, but the men and the mine-manager (Mr. W. G. Mowat) have promised to put a piece to one side for me, as an exhibit for the School of Mines or for my office in Dunedin. The battery plant is still being worked by the dynamo, but I understand it is the intention of Mr. Evans, the general manager, to utilise the water available in the locality on a turbine wheel, by which he anticipates getting sufficient power during the greater part of the year to drive the battery, and thereby he thinks the present cost of crushing can be very much reduced.

Leviathan Quartz-mine, Shotover River.—(22/9/96): This mine is situate on the south side of Sawyer's Gully, about a mile above its junction with the Shotover, where the lode was opened. The first stone was crushed by the Gallant Tip battery, and the second lot by the eight-stamp battery lately erected on the spot, belonging to the company. This plant is fixed in the gully immediately under the line of reef, and is driven by a Pelton wheel with one head of water, having a pressure of about 300 ft. The outcrop of the lode is about 1,000 ft. above the Shotover, and is quite handy to a small forest of suitable mining timber. The stone is said to yield $\frac{1}{2}$ oz. to the ton. It is of good colour, and I saw gold in it. The stone is said to contain a considerable quantity of pyrites which carry a fair amount of gold. A second reef owned by the same company is named the Crystal Lode, and is situate on the opposite side, higher up the gully, and at a considerably greater elevation. Sixty tons of stone of the outcrop were crushed at the company's battery, and the yield was 12 dwt. per ton. An adit is now being driven to cut the lode, and at the time of my visit was driven 350 ft., which is supposed to be very close to it. The adit is supposed to be 4,000 ft. above the sea-level, and about 1,300 ft. above the Shotover. If the lode be cut by the drive, and if it be of equal value to the 60 tons crushed, it is proposed to erect an aerial tramway, probably half a mile in length, to the company's battery. The fall in that short distance is considerable.

SLUICING

Robert Johnston's Sluicing Claim, Shotover.—(22/9/96): From Stony Creek the outer edge of the open face is about 600 ft. back. Mr. Johnston estimates the depth of gravel to be sluiced away as follows: From the surface, in places, there is 80 ft. of fine sand and gravel; then 40 ft. of fairly

good gold-bearing wash, carrying a quantity of large stones; below this is an 80 ft. layer of fine wash, carrying a little fine gold; and below this again is a heavy wash, varying from 2 ft. to 10 ft. in depth. The head-race empties into a reservoir, which is 4 or 5 chains from the open working-face, and when full from twenty to thirty heads are turned on to the open paddock and allowed to flow till the reservoir is nearly emptied. In this way of utilising the water a considerable quantity of *débris* is removed in a short space of time. The interval between the washings is well spent in breaking the stones to a size to pass through the sluice-boxes, 24 in. wide by 2 ft. deep, having a fall of $13\frac{1}{2}$ in. to 12 ft. The boxes empty into Stony Creek, where they have, it is said, a dump of over 200 ft. I did not visit the tailing-site. The ripples are made of iron bars 2 in. by $\frac{1}{4}$ in., placed on edge and longitudinally, and having 2 in. deep of manuka scrub placed under them. This kind of ripple is said to be very good.

Orwiri Gold-mining Company, Round Hill.—(18/11/96): This company's claim is situated on the upper side of and joining the Round Hill Gold-mining Company's claim, and the open face and workings are about 100 yards from the top working-face of the latter company. At the time of my previous visit this new company was constructing the gold-saving tables and making other preparations to open the claim. Since then a large opening, from 50 ft. to 80 ft. deep, has been sluiced down and elevated to a height of 45 ft., where it is allowed to spread down the flat over a large area which is fast filling up, and now nearly to the level of the tail-end of the gold-saving boxes. From the top of the elevator there are 30 ft. of boxes laid with transverse ripples, from which the *débris* spreads over tables equal to 820 square feet, covered with cocoanut matting. The main water-jet pipe is 13 in. in diameter, the throttle 5 in. to 6 in., and the elevating-pipe 10 in. in diameter. The jet-nozzle is $1\frac{3}{4}$ in. in diameter. The head-race and reservoir are 445 ft. above the workings, to which there is a long line of pipes carefully and well laid in nearly a straight line. I did not observe a leaky joint in the whole length. The reservoir at the head of the pipes appears to be substantially constructed, and the retaining-wall is wide enough to admit of an additional 2 ft. or 3 ft. being added to the top and an additional depth of water stored. In the depth of material being sluiced there are said to be several thin layers of grit carrying a little gold, and at the bottom the gold-bearing wash is from a few inches to 5 ft. thick. In the bottom at the foot of the terrace a deep trench or gutter from 15 ft. to 20 ft. deep was found, but the quality of the wash in it was much the same as that on the higher level. Preparations are now being made to shift the jet plant and boxes to a higher level a short distance along the open face to the northward, where there is more tailing room, the tailings now being nearly at the level of the tail-boxes. The head-race is said to carry from four to six Government heads, and is nine miles long from George Creek. The reservoir is said to hold six hours' water with nothing coming in, or thirty hours' water at two heads and a third with water coming in. The claim is held by a few persons, and is said to be paying very well.

Round Hill Gold-mining Company.—(18/11/96): At the upper part of the company's ground, where sluicing was being done at the time of my previous visit, there are now two jets working and elevating the *débris* 65 ft. Two nozzles are playing on a high face some chains from the jets, along which distance the *débris* passes through sluice-boxes floored with ripples. At the top of the jet column are the first 60 ft. of boxes ($3\frac{1}{2}$ ft. wide), 30 ft. of which are paved with iron ripples laid transversely, $\frac{1}{2}$ in. apart, the other 30 ft. having perforated plates, the perforations being $\frac{1}{8}$ in. and $1\frac{1}{4}$ in. from centre to centre, in which boxes 4 oz. of gold are caught to every ounce saved by the tables, which have a surface of 480 square feet to each jet and set of boxes. The tables have a fall of 12 in. to the 12 ft., and are covered with cocoanut matting placed on top of calico. The tables discharge into other boxes, 36 ft. long by 2 ft. 6 in. wide, furnished with ordinary ripples and matting, in which only 2 oz. of gold are saved during six months. These tables are, in all, equal to 1,250 square feet, and the quantity of water flowing over this surface is estimated at eight and a half Government heads. The working-face is gradually getting deeper as the work advances into the terrace, and is at present from 60 ft. to 70 ft. high. Most of the gold is found near the bottom, which has not been mined on where the nozzles are now working. The boxes having perforated plates have a fall of 8 in. to 12 ft., and the rippled boxes have a fall of 6 in. to 12 ft. The enlargement and extension of the head-race to Cascade Creek, which is distant fifteen miles from the head of the pipes, and is being made to carry, it is said, twenty-seven heads of water. The least quantity of water available in dry weather is said to be eight heads. At the present time there are said to be seventeen heads used by each jet. The size of jet is $2\frac{3}{4}$ in., with a pressure of 125 lb. to the square inch. The gold returns from the two elevators—one of them worked full time and the other three-quarter time, equal to seven weeks for one elevator—was £780, without washing down the open paddock. With three jets in full work the value of the gold returns is estimated at £1,200 per month. The new pipes from the race to the claim are now fixed in position, and for size are the best in Otago. They appear to be well laid, are fairly free from leaks, and look very well. They are said to be made of annealed steel of 10 and 14 B.W.G., and cost 8s. 1d. per foot when placed in position. The main pipe-line has been extended 90 chains south to near the new claim, which is 70 chains below the present workings. The new claim has been lately bottomed at 30 ft. To this jet there are 13 chains of 18 in. pipes, branching into two lines of 13 in. diameter and 7 chains in length, and a third pipe-line off the main line 13 in. to work the nozzle. A third claim, I think, 40 chains lower down the flat, is to be opened shortly by an extension of the pipes to the spot. It is intended to work three jets only when everything is finished. A 4 in. jet is to be used for stripping.

Bluespur Gold-mining Company, Lawrence.—(10/1/96): Accompanied by the manager, Mr. Jackson, I walked round to all the working-faces, and found them in a safe condition. The height of these faces runs from 50 ft. to 100 ft., and the faces are nearly vertical. There were, at the time of my visit, two faces in full swing, running off a large body of gravel in a continuous and steady stream by two shifts of men in the twenty-four hours. The three faces are being worked on three different levels. The bulk of the stuff in the eastern faces is being constantly broken up to

the size of coarse road-metal by hammers and hammer-headed picks. I am pleased to learn that the washings continue to be eminently satisfactory. I hope, for the sake of the shareholders, that it will continue so to the ending of the claim. Everything about the claim is in first-class order.

Roxburgh Amalgamated Gold-mining Company.—(11/6/96): There are three hydraulic plants in position on this claim, but only two were working at the time of my visit, in consequence of an insufficient supply of water. I think the water is frequently a little slack at this time of the year. Since my previous visit the main pipes across the old workings have been shifted up nearer the working-places and covered with sand to prevent as much as possible contraction and expansion, which, however little, sometimes affects the joints and causes trouble and loss of water. The top stripping is well in advance of jets working on the bottom, and the whole of the claim is in splendid working-order.

Bald Hill Flat.—(29/4/96): Mr. J. Ewing's sluicing claim: All the sluicing plant is being moved from behind Kemp's Hotel to the lower end of the flat some little distance below the hotel, and is being fixed in position on the west side of the old creek-workings, where it is intended to sluice off a narrow strip of partly-worked ground in order to test the value of the solid terrace, which, if found to be payable, may lead to an important development of sluicing, since there is a very large area of untried hillside of made ground. On this side of the creek in the early days some of the coarsest of the gold on this field was found. I was shown quite a nugget, which was said to have been found near where Ewing is about to commence operations. I think the nugget was found about thirty years ago. The ground in the flat is very shallow, but should payable gold be found in the terrace or hillside the depth of stuff to remove may in time reach 100 ft. or more. The elevation of the head-race is probably from 200 ft. to 320 ft. This plant to work well requires seven heads, which are not always available, and therefore much valuable time is lost.

The Last Chance Gold-mining Company, Bald Hill Flat.—(29/4/96): This company has generally about seven heads of water, and the hydraulic plant lifts the *débris* about 27 ft. The ground is comparatively shallow—perhaps 20 ft.—carrying a little gold all through. The pressure head is about 320 ft. In this claim, from time to time, blocks of angular quartz containing large specks of gold have been found, a sure indication of a good reef existing only a short distance up the small stream. This is a most promising place for some quartz prospectors to spend a few weeks or months reef-hunting. The width of flat now being sluiced off is about 2 chains, but a strip of similar width will at some future time be worked on the west side of the present workings.

Carrol and Lindo's Sluicing Claim, Bald Hill Flat.—(29/4/96): This party has a hydraulic plant lifting the *débris* about 20 ft. It is working a face probably 3 chains wide. The payable ground is much wider, but cannot conveniently be worked the full width at once, in consequence of the creek, which cannot be disturbed till there is room to turn it through the worked-out ground on the east side of the flat. All the Bald Hill Flat claims have a splendid sandy bottom to work on. There is no gold lost in the washing-up.

Sew Hoy's Hydraulic-sluicing Claim, Nokomai.—(20/4/96): The head-race takes its water from Foster's Creek, on the Mataura side of the range, and north-east from Garston probably three miles. The race follows the range south to a saddle opposite the Nokomai railway-siding, and crosses this saddle to the Nokomai side of the range, which it follows to a suitable pipe site near the claim. I could not get any definite information as to length and fall or gradient of race. It was suggested as approximately twelve miles in length. As this gives a very poor supply, and was hardly worth the money expended on it, something more must now be done to increase the supply of water. It is therefore intended at an early date to extend the race upward about five miles to Diggers' Creek. In order to reach the stream in that distance a very long syphon will have to be laid across a depression in the side of the range, for which purpose 40 tons of steel plates have been ordered in London. They are expected to arrive in New Zealand at an early date. At the time of my visit I estimated the quantity of water in the race at twelve heads, which was sufficient to work the smallest of the two plants on the ground. I think there is much of the race that could not with safety carry any more water. I observed at the Nokomai Saddle that the fall in the race was very uneven. The head at the claim is 570 ft. Since the hydraulic started to work—December, 1894—up to date the plant has only worked six months. The expenditure on the claim to date was stated to me to be £9,000. The gold returns to date are very satisfactory. The present mining is at the mouth of a narrow gorge, where the flat is probably from 4 to 6 chains wide, and the depth varies from 25 ft. to over 30 ft., but I cannot say how much over that depth it will be as the work advances. It is generally thought there is deeper ground in the flat ahead, and, I fear, not so good as that now being worked. All the wash is entirely local, as is also the gold—a heavy sample. The schist wash is coarse and flat, easily broken, and hungry-looking stuff. So far most of the gold is found in the fissures in the hard bottom to a depth of from 12 in. to 18 in. Twenty chains or more upward from the present paddock the flat widens out very much, and is not likely to prove payable from side to side—probably a narrow strip only near the centre of the flat. I am told that the wear-and-tear in the plant is not so great as at Roxburgh and the Island Block claims. There is room for several more claims at the Nokomai, and I think it may be possible to get water to the ground at a sufficient elevation to do the work. No doubt some of our enterprising men will shortly visit the locality to see what can be done.

Nevis Gold-mines.—(19/4/96): On the west side of the township at the foot of the hill there are two or three hydraulic-sluicing claims working in solid ground where the wash is principally schist, although on the lower side of the vertical white wash, similar to that at St. Bathans, from which I presume most of the fine gold came. A considerable area of ground about the Nevis Township has lately been taken up by several parties of miners and others as dredging claims, and two dredging plants are said to have been ordered, to be delivered on the ground by way of Garston at an early date. The earliest date to do any heavy carting on that road will be next summer, and everything to be carted should be ready and arrangements made for transit before that time. Some of the ground to be worked by dredging was turned over by the miners more than thirty years

ago, at which time miners generally, when stripping the top gravel off, threw behind them much stuff containing fine gold that was at that time thought to be too poor to wash with the appliances then in use. Living in those days was more costly, tools more costly, and miners could not afford to waste their time gathering up stuff that it is now thought should pay handsomely by the dredge system. Some of the ground to be worked at the township is said to be from 16 ft. to 18 ft. deep only. Much of the wash, however, is coarse, flat schist, which is not the best for dredging. I am told the bottom varies very much, and that it is not all through in favour of the dredge. It consists of coal, white wash, clay, and schist-rock; I think the bulk of it will be the latter. I am told there are several dredging claims pegged off at the upper end of the gorge above the township, with a view of prospecting the ground at an early date.

Pactolus Sluicing Company.—(19/4/96): This mine is situated about four miles above the Nevis Township, and is on the west side of the stream at the foot of a high made terrace, in which there appears to be a little gold, but not sufficient to pay for sluicing. The flat at the base of this terrace, where hydraulic sluicing is now being carried on by the company, is from 16 ft. to 18 ft. deep. There is a very good head-race constructed to, say, within half a mile of the workings, but the head is only 80 ft. There are a quantity of good-sized pipes on the ground, but I do not think the ground is paying.

ACCIDENTS ON SOUTHERN GOLDFIELDS.

Symes's Quartz-mine, Bald Hill Flat.—(20th March): C. E. Jones was killed while working on the surface, and when stripping the surface off the outcrop of the reef. Jones was working alone at the time. The owner appeared on the spot very shortly after the accident, but too late to save life.

Achilles Mine, Shotover.—(6th June): W. McLellan was injured by a runaway truck as he was approaching the flat shut with a full truck.

Livingston.—(11th August): James S. Yeoman was killed while working in a tail-race, which caved in on him. Twenty minutes elapsed before he was got out, and he was then quite dead.

Fidelity Claim, Lawrence.—(4th October): James McFarlane, manager of the claim, was killed in the open paddock by a fall of cement striking him from behind. It rolled over him. No one was to blame.

I have, &c.,
J. Gow.

RETURNS, &c., from QUARTZ-MINES for the DISTRICT of OTAGO for the Year ending 31st December, 1896.

Name of Company.	Quartz crushed.	Produce of Amalgam.	Retorted Gold.	Melted Gold.	Refined.
	Tons.	Oz. dwt.	Oz. dwt. gr.	Oz. dwt. gr.	Oz. dwt.
Glenrock Consolidated ...	549	561 0	209 16 0	207 13 0	...
Tipperary Gold-mine ...	101	167 10	63 18 0	60 17 5	...
Westralia and New Zealand Gold Explorers	554	434 13	138 0 0	136 10 0	...
Achilles Goldfields ...	5,534	6,221 0	2,113 0 0	2,741 0 0	...
K. T. Symes's Lode ...	206	558 0	238 7 0	232 0 0	...
The Barewood Quartz-mining Company	1,357	2,694 0	899 7 12	...	...
Bonanza Mine (Phelan Brothers)	272	...	250 0 0	...	...
Cromwell Mine ...	488	1,679 10	683 8 12	252 0 0	...
W. and G. Donaldson ...	300	238 0	63 12 0	...	...
Henry Symes (Alexandra) ...	2	3 6	1 10 0	...	...
The Morning Star Gold-mining Company	3,018	8,912 0	3,003 5 0	1,661 15 0	3,149 0
P. A. Lyders ...	146	...	...	43 10 0	...
	12,527	21,468 19	7,644 4 0	5,335 5 5	3,149 0
Glenrock Consolidated tailings ...	...	...	...	44 0 0	35 10
Cromwell tailings ...	...	...	36 10 0	...	...
	...	...	36 10 0	44 0 0	35 10

No. 17.

Mr. ALEXANDER AITKEN, Manager, Waimea-Kumara Water-races, to the UNDER-SECRETARY for MINES, Wellington.

SIR,—

Kumara, June, 1897.

I have the honour to forward the following report on the Waimea-Kumara water-races for the year ended 31st March, 1897:—

WAIMEA WATER-RACE.

The total sales of water from this race for the year amounted to £776 19s. 5d., and the expenditure during the same period for maintenance was £669 6s. 3d., showing a credit balance of £107 13s. 2d. on the year's transactions. The average number of miners supplied with water from this race during the year was 66.25, and the approximate quantity of gold obtained by them was 2,133 oz., having a value of £8,318 14s. The sales of water are £18 14s. 1d. less than during the preceding year, and the yield of gold is 208 oz. more, having a value of £811 4s. The difference in the sales of water is small, and is accounted for by the general scarcity of water during the year, and more especially during the months of June and December, 1896. The difference in the yield of gold can only be accounted for by the ground washed away turning out better than during the preceding year.

The expenditure on ordinary maintenance is £100 17s. 5d. less than during the preceding year. This is due to the flumes on the Waimea and Stafford sections being in good condition, so that very little had to be expended in effecting repairs on them. There was also very small expenditure on the high fluming at Kawhaka, and the recent changes that have been made there will be the means of reducing the expenditure on maintenance of the Waimea Race very considerably in the future. The only expenditure for maintenance during the year was for repairs to some of the tunnels, the removal of a few slips, and cleaning out and clearing scrub and undergrowth from the race.

Besides the sales of water, free water to the extent of about £100 was given to parties who could not afford to pay on account of poor washings; but this did not affect the sales of water, as the water thus given would otherwise have gone to waste. A considerable amount of waste water was also given to parties endeavouring to open up new ground in the district, but this was only given after all the paying parties had been fully supplied.

Besides the parties supplied from the race, there are a large number of miners in the district who have private races, and who are engaged in working ground when water is available, but, as they are dependent altogether on wet weather, the work done by them is of an intermittent character. In the gullies and on the ranges of the district far above the reach of the water from the Waimea Race a great many parties are at work, some of them doing very well; and work in those localities will continue for many years, as there is a large area of auriferous ground in the places referred to still untouched.

DEVIATION WAIMEA RACE AT KAWHAKA.

This work is now nearly completed, and the water is running in the new race, with the exception of about 11 chains at the upper end. The new race acts well, and, as it is all in earth-work, with the exception of about 17 chains of low fluming, the danger of a breakdown and consequent stoppage of water-supply for the district has been reduced to a minimum. The cost of the deviation has been considerable, but only a fraction of what would have been required to reconstruct the high fluming which was beyond repair. The whole of the timber in the new fluming is silver-pine, and will be good for at least forty years without any expenditure on repairs. As soon as the 11 chains of low fluming at the upper end of the deviation is completed none of the high fluming will be used, as it will not be required.

BRANCH RACE TO CALLAGHAN'S.

This race has been completed, and water has been supplied from it during the months of February and March. The sales of water during the two months amounted to £42 15s., and the expenditure during that period was £25 15s. I anticipate that considerable quantities of water will eventually be sold from this race, but for some months very little will be done. Several parties have taken up ground commanded by the race, but it will take some time to prospect and open it up. There are large areas of likely ground in the locality that have not been systematically prospected, on account of water not being available for working the ground, even should fair sluicing prospects be obtained. Now that water is obtainable, all likely places will be prospected.

BRANCH RACE TOWARDS MIDDLE BRANCH, WAIMEA CREEK.

No work has been done on this race during the year, as no water could be supplied from it until the completion of the Waimea Main Tail-race. Now that the Main Tail-race is nearly completed, about 80 chains of race will have to be constructed to supply water to the claims that will work into it. A survey has been made for a high-level race that will eventually become a portion of the main Waimea Race, and out of which it was proposed to supply the claims running into the Waimea Main Tail-race, but on further consideration this high-level race does not appear to be suitable for that purpose, as each claim working into the Main Tail-race will have to provide a dam for the storage of night water. All the claims now supplied from the Waimea Race have dams for that purpose, and the parties can use the water from the dams at any time it suits them. This plan will have to be adopted in the case of the claims using the Main Tail-race. A survey is being made for a race leading from the highest site available for a storage dam that will hold night water and water that would otherwise go to waste on Sundays and holidays, and at the same time give about 100 ft. head in the claims working into the Waimea Main Tail-race.

WAIMEA MAIN TAIL-RACE.

The Waimea Main Tail-race is driven to its proposed terminating point on the flat in the Middle Branch of the Waimea Creek. Its total length is 2,076 ft. It is 7 ft. in height and 4 ft. 6 in. in width, and has a gradient of 3 in. per box (of 12 ft.) or 1.375 ft. per chain, and is boxed throughout. The trustees are preparing to sink a shaft to connect with the surface, and when this is done the channel will be blocked, all the material for that purpose being on the ground. There

is but little doubt that a large area of payable sluicing-ground will be commanded by this main tail-race, and as soon as it is completed branch tail-races will be constructed to connect with the various claims, and sluicing operations on a fairly large scale commenced. Many of the claims in the vicinity have recently been the subject of considerable litigation in the Warden's Court, and some of the cases are still unsettled. This has been the cause of much delay in the construction of the Main Tail-race.

There is a fair hope that a considerable revival in mining matters in the Waimea district will be the result of the completion of this work, as there is little doubt of the payable character of the ground, which would have been worked long ago if the natural facilities for working had been favourable.

KELLY'S TERRACE DRAINAGE TUNNEL.

The Kelly's Terrace drainage tunnel has been driven a distance of about 1,200 ft. The proposed length of the tunnel is 6,600 ft., and good gold has been got in the vicinity of its terminating point, but the quantity of water that had to be contended with caused the ground to be abandoned for several years past. There is no intention of sluicing through this tunnel, it is for drainage purposes only, and the fall is only sufficient to carry off the water, as the lower it is at its upper terminating point the more effective it will be in draining the ground proposed to be worked. The contractors are at present driving an inclined branch tunnel to a gully about 70 ft. from the present face, as they consider it will be more economical to discharge the material by that outlet than run it to the present tip, a distance of about 1,500 ft. As the country through which this tunnel passes is all auriferous, it is probable that payable gold may be struck before the proposed termination is reached.

KUMARA RACE.

The total sales of water during the year from this race amounted to £3,502 17s., and the expenditure for maintenance for the same period was £1,786 15s. 9d., leaving a credit balance of £1,716 1s. 3d. The average number of miners using water during the year from this race was 87·83, and the approximate quantity of gold obtained by them was 5,455 oz., having a value of £21,264 10s. The sales of water amount to £603 14s. 3d. less than during the preceding year, and the yield of gold is 590 oz. less, having a value of £2,301. The reason the sales of water amount to less than during the preceding year is that the price of water was reduced from £2 per sluice-head per week to £1 10s., from 1st June, 1896, so that there was only two months of the year at the higher rate. Although the price was reduced 25 per cent., the sales of water, counting from the 1st June, show a decrease of only 15·25 per cent., and, taking the whole year, a decrease of only 14·69 per cent.

The decrease in the quantity of gold obtained is due to the increasing poorness of the ground being sluiced away. There is no doubt the best of the sluicing-ground, so far as at present known, has been worked, and the number of really good claims now being worked on the field are very few. There is, however, a very large area of ground still unworked that, with improved and more economical methods of working, will pay wages, and extensive sluicing operations will be carried on here for many years to come, even if no new discoveries are made.

Besides the sales of water above referred to, water to the value of £479 3s. was supplied to claims having a succession of poor washings; and water to the value of £133 17s. 6d. was given towards the construction of No. 4 main tail-race. In all cases where assistance was given to poor claims full inquiries were made as to the necessity for so doing, and in most cases, if assistance had not been given, the claims would have been abandoned. When water was plentiful and running to waste down the creeks extra quantities were supplied to the claims using water and to parties prospecting. A considerable quantity of water was also supplied to the trustees of No. 5 main tail-race to sluice away pug and supply two water-wheels.

The total quantity of water supplied from the race during the year had a value of £4,115 17s. 6d., exclusive of water for flushing the channels, washing-down water, water for fire purposes, leakage, and waste.

For ten working-days during the year no water for sluicing was supplied from the race, and for fifty working-days there was no water for the channels, owing to long spells of dry weather. Besides the above, the miners observed five holidays during the year.

One claim was worked out during the year, and one was abandoned, as it was considered too poor.

Water was lost over the dams on sixty separate days, and during that time the total quantity of water lost would have given a full supply to the field for sixty-eight days and a half if it could have been made use of.

A new race for supplying water to No. 4 main tail-race was constructed, at a cost of £106 9s. 3d. and it acts well, and will require no expenditure for repairs.

A considerable amount has been expended on replacing the 30 in. steel syphons, and the removal of them to the proposed new position would reduce the expenditure on the maintenance of the race very considerably.

RAISING BYWASH AT LOOP-LINE DAM.

Authority has been received to carry out the proposed alterations to the bywash at the Loop-line dam, which will have the effect of increasing the capacity of the reservoir to a very considerable extent. I feel certain that the embankments will safely stand the proposed raising of the level of the water in the dam, and that when the work is completed the loss from scarcity of water will be materially reduced. The proposed catchwater-race should also be carried out, as that would still further improve the supply.

No. 5 MAIN TAIL-RACE.

This main tail-race is not yet completed, bad and difficult ground having been met with. Starting from the lower end, the first 7·79 chains has been sluiced out, and is now in open cutting. The next 2·91 chains of tunnelling is in good sound blue reef, and is securely timbered. Then pug was met with, and the channel has been driven through this pug a distance of 73 links. The timbering in the pug is of great strength, and the sets are nearly close together. A great many of the sets broke, and had to be replaced by stronger timber. It is almost certain that the worst portion of the pug has been driven through, and that the difficulties, so far as pug is concerned, are nearly at an end. The next 1·19 chains is not yet driven. When this is completed sections Nos. 1 and 2 will be connected. From No. 1 shaft a distance of 3·76 chains was driven downward and 15·80 chains was driven upward. The whole of this length is in blue reef, with the exception of about 1 chain at the upper end, where the gravels come in on the roof of the channel. The present face shows about 4 ft. of blue reef, with the gravels overlying it to a depth of about 3 ft. The reef is very flat, and the great difficulty here is the loose nature of the gravels and the large body of water coming from overhead.

The whole has to be close-slabbled and face-boards used at the gravel portion of the face. Although every precaution has been taken, considerable runs have occurred, but the channel, so far as it has gone, has been securely timbered, and there is no danger of collapse. There is still 16·05 chains between No. 2 and No. 3 sections not yet constructed. In No. 3 section 9·28 chains had been driven, and from thence to the proposed head of the main tail-race the distance is 5·25 chains. A total length of 40·27 chains has been constructed, securely timbered, boxed, and blocked, and 22·49 chains has still to be constructed.

The following table and attached section shows the position of No. 5 main tail-race to date:—

From	To	Constructed.	Not constructed.	Total.	Remarks.
Chains. 0·00	Chains. 7·79	Chains. 7·79	Chains. ...	Chains. 7·79	Open tail-race.
7·79	10·70	2·91	...	2·91	In blue reef.
10·70	11·43	·73	...	0·73	In pug double timbered.
11·43	12·62	...	1·19	1·19	Not constructed.
12·62	16·38	3·76	...	3·76	Face to No. 1 shaft in blue reef.
16·38	32·18	15·80	...	15·80	No. 1 shaft to upper face in blue reef.
32·18	48·23	...	16·05	16·05	Not constructed (will be in gravels).
48·23	57·51	9·28	...	9·28	In gravels.
57·51	62·76	5·25	5·25	5·25	Not constructed (will be in gravels).
		40·27	22·49	62·76	
Constructed	...	...	...	...	40·27 chains.
Not constructed	...	...	...	...	22·49 "
Total length	...	...	...	...	62·76 "

I have, &c.,

ALEXANDER AITKEN,

Manager, Water-races, Kumara.

The Under-Secretary, Mines Department, Wellington.

No. 18.

Mr. RODERICK MURRAY, Manager, Mount Ida Water-race, to the UNDER-SECRETARY FOR MINES, Wellington.

SIR,—

Naseby, 21st April, 1897.

I have the honour to submit the following report on the Mount Ida and Blackstone Hill Water-races, for the year ending the 31st March, 1897:—

MOUNT IDA WATER-RACE.

The total sales of water from this race during the year amounted to £1,333 11s. 6d., and the expenditure on maintenance and repairs for the same period £1,316 15s. 6d. The total cash received was £1,365 10s. 11d. On account of payment in advance, free water to the value of £87 19s. 9d. was supplied. Free water to the value of £60 11s. 7d. was supplied to assist in opening up new claims, and free water for washing was also supplied to the value of £87 19s. The total value of water supplied from this race during the year was £1,580 1s. 10d. The average number of miners supplied with water from this race was 66·5, an increase of 5·25 over that of last year, and the approximate quantity of gold obtained by parties using water from the race was 3,157 oz., valued at £12,154 9s. I started to clean out the race on the 14th August, and finished on the 10th September. As last winter was an unusually open one, the water for the whole year was only off for twenty-three days. The year has been an exceptionally dry one, the snow being practically gone by the end of November, and from the middle of October to the 18th March there was very little rain to do any good. I may say that for three and a half months—viz., from 1st December

to 18th March—the water-supply in the race was never more than twelve heads, and for most as low as five heads—not anything equal to half a supply. Four elevating claims have been at work in Main Gully during the past year, three of which worked night and day whenever water was available, all I understand with good results. On four others in same locality plant is now being got ready to be placed in position before winter sets in. This gully has now been taken up for fully four miles and a half in length in claims of large area to be worked principally on the elevating principle. Before these extra claims can be supplied with water it will be necessary to widen the main race (four miles in length) from Coalpit Gully to Home Gully dam, so as to increase its carrying-capacity from ten heads as at present to sixteen heads. This, in conjunction with the dam in Mulholland's Gully (built during the year), would enable me whenever there was a full supply of water to keep all hands going during the day-shift. This widening can be done in the spring when the race is being cleaned out. The rush in July at Johnstone's Creek has not turned out as was expected, only one party (McConnochie and Kennedy) having held on to their claim. Owing to the dryness of the season they could not be supplied with water to give it a fair trial as all the water in the race was wanted for Naseby. The race has been kept in a good state of repair during the year by the maintenance men.

BLACKSTONE HILL WATER-RACE.

The total sales of water from this race amounted to £115 19s. 3d., and total cash received was £111 19s. 3d. Free water for assistance was given to the value of £6 5s. The total water supplied was £122 4s. 3d. The total cost of maintenance was £5 8s. 6d. The branch race from the right-hand branch of Hill's Creek to its junction with the main race was cleaned out in May. Like the Mount Ida, this race since December has been very short of water; it will require to get a side-trimming in the spring. W. Wade, in June, ceased to take water, and during the rest of the year there were only four parties using it. The average number of miners supplied with water from this race during the year was 8·75, and the approximate quantity of gold obtained was 183 oz., valued at £704 11s.

I have, &c.,

The Under-Secretary, Mines Department, Wellington.

R. MURRAY, Manager.

APPENDIX.

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 31st December, 1896.

District.	Miners' Rights.	Business Licenses, Machine and Residence Sites.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Totals.
AUCKLAND.								
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Coromandel ..	1,845 12 0	209 0 0	22 15 0	5,840 3 6	63 0 0	77 12 0	188 4 6	8,246 7 0
Te Aroha ..	39 10 0	59 10 0	14 10 0	1,681 11 0	6 10 0	3 6 0	1 10 0	1,806 7 0
Thames ..	978 0 0	64 0 0	20 5 0	7,942 19 3	58 9 0	129 15 6	80 16 6	9,274 5 3
Ohinemuri ..	1,038 10 0	190 10 0	17 0 0	12,316 14 5	35 17 0	131 5 0	811 15 0	14,591 11 5
Puhipuhi ..	53 0 0	5 10 0	1 5 0	580 7 0	2 8 0	0 5 0	1 12 0	644 7 0
Totals ..	3,954 12 0	528 10 0	75 15 0	28,361 15 2	216 4 0	342 3 6	1,083 18 0	34,562 17 8
NELSON.								
Collingwood ..	103 10 0	3 0 0	11 7 6	439 11 5	12 19 0	8 18 0	133 6 0	712 11 11
Westport ..	273 10 0	17 6 0	26 5 0	558 11 8	16 17 0	25 0 0	57 17 3	975 6 11
Charleston ..	113 1 0	1 0 0	13 15 6	48 1 0	7 10 0	6 3 0	18 10 8	208 1 2
Ahaura ..	336 0 0	..	29 15 0	585 6 0	40 7 0	..	163 4 9	1,154 12 9
Reefton ..	313 10 0	14 0 0	17 0 0	3,318 15 0	24 7 0	15 3 0	315 6 3	4,018 1 3
Wangapeka ..	21 0 0	..	0 15 0	0 10 0	0 19 0	..	1 12 6	24 16 6
Lyell ..	47 11 0	..	6 0 0	206 14 0	2 13 0	..	2 9 0	265 7 0
Motueka ..	11 1 0	..	0 10 0	..	0 16 0	..	0 6 0	12 13 0
Murchison and Owen's ..	25 0 0	..	16 15 0	115 3 0	4 4 0	..	4 5 0	165 7 0
Totals ..	1,244 3 0	35 6 0	122 3 0	5,272 12 1	110 12 0	55 4 0	696 17 5	7,536 17 6
MARLBOROUGH.								
Havelock ..	45 0 0	1 0 0	5 5 0	216 3 8	3 1 0	..	0 14 6	271 4 2
Picton ..	1 0 0	..	..	..	..	..	..	1 0 0
Totals ..	46 0 0	1 0 0	5 5 0	216 3 8	3 1 0	..	0 14 6	272 4 2
WESTLAND.								
Hokitika and Kaniere ..	239 10 0	5 10 0	8 12 6	179 12 0	16 9 0	3 14 0	29 1 5	432 8 11
Greymouth ..	398 12 0	1 10 0	34 5 0	2,568 10 10	26 1 0	15 12 0	19 1 4	3,063 12 2
Ross ..	60 0 0	2 0 0	5 17 6	205 10 0	6 1 0	1 2 0	168 11 4	449 1 10
Stafford ..	73 10 0	..	9 10 0	21 9 0	4 10 0	4 12 0	86 0 0	199 11 0
Kumara ..	304 0 0	4 0 0	6 17 6	328 7 11	20 10 0	10 1 6	0 15 0	674 11 11
Goldsborough ..	67 10 0	..	10 10 0	..	7 8 0	3 4 0	3 8 0	92 0 0
Okarito ..	31 0 0	1 10 0	1 5 0	1 17 6	2 10 0	..	..	38 2 6
Totals ..	1,174 2 0	14 10 0	76 17 6	3,305 7 3	83 9 0	38 5 6	306 17 1	4,999 8 4
OTAGO.								
Black's ..	77 0 0	2 10 0	3 5 0	122 5 0	5 14 0	2 18 0	51 18 6	265 10 6
Tapanui ..	8 10 0	..	..	1 0 0	0 11 0	..	..	10 1 0
Hindon ..	101 0 0	7 0 0	5 5 0	325 2 3	6 9 0	1 1 0	0 14 0	446 11 3
Naseby ..	164 0 0	17 0 0	51 2 6	584 6 2	26 18 0	..	246 10 0	1,089 16 8
Roxburgh ..	166 10 0	..	11 0 0	640 4 6	9 4 0	6 15 0	23 9 6	857 3 0
Alexandra ..	238 10 0	14 0 0	15 12 6	643 19 3	17 17 0	17 6 0	12 16 6	960 1 3
Clyde ..	14 10 0	..	0 10 0	5 17 0	0 17 0	4 1 0	0 5 0	26 0 0
Pembroke ..	276 10 0	9 13 0	11 0 0	601 5 3	21 3 0	15 7 6	205 14 0	1,140 12 9
Cromwell ..	190 10 0	20 10 0	7 2 6	714 19 3	14 2 0	20 6 0	123 9 6	1,090 19 3
Queenstown ..	108 10 0	3 0 0	6 5 0	359 19 6	9 9 0	2 17 0	3 18 4	493 18 10
Arrowtown ..	163 0 0	8 10 0	22 15 0	957 9 2	16 2 0	13 5 0	25 9 0	1,206 10 2
Lawrence ..	123 11 0	10 10 0	16 0 0	322 3 9	13 15 0	7 0 0	2 16 9	500 16 6
Waikaia ..	68 0 0	..	..	..	..	..	..	68 0 0
Orepuki ..	120 0 0	4 10 0	14 7 6	439 11 0	12 6 0	13 16 0	2 4 6	606 15 0
Riverton and Longwood ..	5 10 0	..	7 0 0	30 7 0	5 3 0	..	0 19 0	48 19 0
Maerewhenua ..	15 0 0	..	0 10 0	13 10 0	0 15 0	..	..	29 15 0
Wyndham ..	2 0 0	..	..	251 17 6	0 4 0	..	..	254 1 6
Nenthorn ..	..	..	..	..	..	..	..	..
Totals ..	1,847 11 0	97 3 0	171 15 0	6,013 16 7	160 9 0	104 12 6	700 4 7	9,095 11 8
Grand totals ..	8,266 8 0	676 9 0	451 15 6	43,169 14 9	573 15 0	540 5 6	2,788 11 7	56,466 19 4

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, 1897.

District.	Miners' Rights.	Business Licenses, Machine and Residence Sites.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Totals.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
AUCKLAND.								
Coromandel ..	144 0 0	34 0 0	9 0 0	1,693 13 0	23 17 0	19 12 0	53 2 0	1,977 4 0
Te Aroha ..	9 10 0	3 0 0	0 5 0	500 3 10	3 2 0	0 10 0	..	516 10 10
Ohinemuri ..	140 10 0	30 10 0	6 5 0	4,690 2 7	21 18 0	47 1 0	39 11 0	4,975 17 7
Thames ..	153 0 0	1 0 0	4 0 0	2,980 2 3	18 2 0	7 16 0	19 6 6	3,183 6 9
Puhipuhi ..	6 10 0	..	0 15 0	87 15 3	0 14 0	..	..	95 14 3
Totals ..	453 10 0	68 10 0	20 5 0	9,951 16 11	67 13 0	74 19 0	111 19 6	10,748 13 5
NELSON.								
Motueka ..	0 11 0	..	..	..	0 2 0	..	..	0 13 0
Collingwood ..	15 0 0	1 0 0	0 10 0	68 17 6	2 9 0	4 14 0	56 19 0	149 9 6
Westport ..	52 10 0	3 2 0	4 2 6	212 12 11	5 11 0	5 15 0	125 1 6	408 14 11
Charleston ..	28 0 0	..	2 12 6	67 19 0	1 9 0	..	1 7 6	101 8 0
Abaura ..	74 0 0	..	6 2 6	292 0 0	8 13 0	..	1 14 0	382 9 6
Reefton ..	59 10 0	2 10 0	4 0 0	866 18 9	3 13 0	15 15 0	10 5 9	962 12 6
Wangapeka ..	4 0 0	..	0 5 0	..	0 4 0	..	0 12 0	5 1 0
Lyell ..	9 0 0	..	0 15 0	49 12 6	0 13 0	..	0 17 0	60 17 6
Murchison ..	3 10 0	..	1 17 6	41 8 6	0 18 0	..	0 8 0	48 2 0
Totals ..	246 1 0	6 12 0	20 5 0	1,599 9 2	23 12 0	26 4 0	197 4 9	2,119 7 11
MARLBOROUGH.								
Havelock ..	10 15 0	..	1 15 0	10 13 0	1 8 0	..	0 3 6	24 14 6
Picton ..	1 0 0	..	..	..	..	..	..	1 0 0
Totals ..	11 15 0	..	1 15 0	10 13 0	1 8 0	..	0 3 6	25 14 6
WESTLAND.								
Hokitika and Kani- eri ..	43 0 0	..	1 7 6	105 10 0	3 2 0	3 17 0	0 6 0	157 2 6
Greymouth ..	80 10 0	..	4 5 0	316 5 0	5 5 0	3 3 0	4 11 0	413 19 0
Ross ..	11 10 0	1 0 0	1 0 0	140 0 6	1 7 0	..	0 13 6	155 11 0
Stafford ..	20 0 0	..	1 2 6	26 5 6	0 19 0	1 10 0	76 3 6	126 0 6
Okarito ..	11 10 0	1 10 0	..	..	0 2 0	..	..	13 2 0
Kumara ..	74 10 0	1 10 0	1 0 0	113 7 0	3 18 0	1 10 0	..	195 15 0
Goldsborough ..	18 11 0	..	2 5 0	..	2 14 0	..	0 18 0	24 8 0
Totals ..	259 11 0	4 0 0	11 0 0	701 8 0	17 7 0	10 0 0	82 12 0	1,085 18 0
OTAGO.								
Black's ..	19 0 0	..	0 12 6	180 14 6	1 17 0	1 18 0	0 5 0	154 7 0
Tapanui ..	3 10 0	..	..	..	0 16 6	..	..	4 6 6
Hindon ..	33 10 0	..	0 10 0	103 16 0	1 6 0	0 12 0	..	139 14 0
Naseby ..	40 0 0	9 0 0	14 0 0	212 15 0	8 0 0	..	1 11 6	285 6 6
Alexandra } Clyde .. }	57 0 0	1 5 0	3 2 6	168 19 0	5 7 0	9 8 0	26 1 0	271 2 6
Roxburgh ..	19 0 0	..	3 0 0	117 6 6	2 19 0	3 11 0	..	145 16 6
Cromwell ..	81 16 0	0 1 0	3 15 0	135 4 8	7 5 0	7 10 0	236 13 0	472 4 8
Queenstown ..	54 10 0	7 0 0	1 10 0	322 0 7	3 0 0	5 1 0	52 1 0	445 2 7
Arrowtown ..	25 10 0	..	1 10 0	18 8 0	3 0 0	1 4 0	..	49 12 0
Lawrence ..	56 10 0	..	8 0 0	282 0 0	5 17 0	18 4 0	0 10 6	371 1 6
Orepuki ..	45 0 0	..	..	..	..	..	..	45 0 0
Riverton and Long- wood ..	85 0 0	1 10 0	8 0 0	95 10 0	5 13 0	8 3 0	0 4 0	204 0 0
Pembroke ..	10 0 0	..	..	..	..	..	..	10 0 0
Maerewhenua ..	1 0 0	..	0 12 6	27 12 6	1 6 0	..	..	30 11 0
Waikaia ..	31 10 0	1 10 0	4 10 0	70 10 0	2 18 0	1 0 0	3 16 0	115 14 0
Wyndham ..	2 10 0	0 10 0	..	0 3 0	0 10 0	..	..	3 13 0
Nenthorn ..	..	..	..	14 5 0	0 3 0	..	0 1 0	14 9 0
Totals ..	565 6 0	20 16 0	49 2 6	1,699 4 9	49 17 6	56 11 0	321 3 0	2,762 0 9
Grand totals ..	1,536 3 0	99 18 0	102 7 6	13,962 11 10	159 17 6	167 14 0	713 2 9	16,741 14 7

No. 3.

COMPARATIVE RETURN of REVENUE derived from the GOLDFIELDS in the several DISTRICTS of NEW ZEALAND during the Years 1895 and 1896, showing INCREASE or DECREASE under each Head of Revenue.

District.	Miners' Rights.	Business Licenses, &c.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens Courts.	Miscellaneous.	Gold Duty.	Totals.
AUCKLAND—	£	£	£	£	£	£	£	£	£
Year 1896	3,955	529	76	28,362	216	342	1,084	9,902	44,466
Year 1895	2,296	266	21	6,867	64	80	997	11,658	22,249
<i>Increase</i>	1,659	263	55	21,495	152	262	87	..	22,217
<i>Decrease</i> .. .. .	..	..	..	..	..	..	..	1,756	..
NELSON—									
Year 1896	1,244	35	122	5,273	111	55	697	..	7,537
Year 1895	1,027	26	79	2,881	98	43	403	..	4,557
<i>Increase</i>	217	9	43	2,392	13	12	294	..	2,980
<i>Decrease</i> .. .. .	..	..	..	..	..	..	..	..	..
MARLBOROUGH—									
Year 1896	46	1	5	216	3	..	1	..	272
Year 1895	47	1	5	216	3	..	1	..	273
<i>Increase</i> .. .. .	..	..	..	..	..	..	..	..	..
<i>Decrease</i>	1	..	..	..	..	..	..	..	..
WESTLAND—									
Year 1896	1,174	15	77	3,305	83	38	307	..	4,999
Year 1895	1,007	19	70	766	65	36	2,201	..	4,164
<i>Increase</i>	167	..	7	2,539	18	2	..	..	835
<i>Decrease</i> .. .. .	..	4	..	..	..	..	1,894	..	..
OTAGO—									
Year 1896	1,848	97	172	6,014	160	105	700	..	9,096
Year 1895	1,713	82	134	4,556	147	126	692	..	7,450
<i>Increase</i>	135	15	38	1,458	13	..	8	..	1,646
<i>Decrease</i> .. .. .	..	..	..	..	..	21	..	..	..
<i>Total Increase</i>	2,177	283	143	27,884	196	255	..	..	27,677
<i>Total Decrease</i> .. .. .	..	..	..	..	..	..	1,505	1,756	..

No. 4.

COMPARATIVE RETURN of the TOTAL AMOUNTS of GOLDFIELDS REVENUE (exclusive of Gold Duty, collected in the several Districts during the Years 1895 and 1896, and the Quarters ending 31st March, 1896 and 1897 respectively, showing the INCREASE or DECREASE in respect of each District

District.	Years 1895 and 1896.				Quarters ending 31st March, 1896, and 31st March 1897.			
	1895.	1896.	Increase.	Decrease.	1896.	1897.	Increase.	Decrease.
AUCKLAND.								
Coromandel	£ 2,947	£ 8,246	£ 5,299	£ ..	£ 1,124	£ 1,977	£ 853	£ ..
Te Aroha	878	1,806	928	..	161	517	356	..
Thames	2,563	9,274	6,711	..	1,494	3,183	1,689	..
Puhipuhi	40	644	604	..	108	96	..	12
Ohinemuri	4,163	14,592	10,429	..	1,674	4,976	3,302	..
NELSON.								
Motueka	7	13	6	..	3	1	..	2
Collingwood	519	713	194	..	129	149	20	..
Westport	1,278	975	..	303	406	409	3	..
Charleston	165	208	43	..	43	101	58	..
Ahaura	563	1,155	592	..	256	332	126	..
Reefton	1,695	4,018	2,323	..	1,028	963	..	65
Wangapeka	21	25	4	..	5	5	..	..
Lyell	148	265	117	..	84	61	..	23
Murchison and Owen's ..	160	165	5	..	40	48	8	..
MARLBOROUGH.								
Havelock	273	272	..	1	25	26	1	..
Picton								
WESTLAND.								
Hokitika	535	482	..	53	94	157	63	..
Kanieri								
Greymouth	2,464	3,064	600	..	1,127	414	..	713
Ross	169	449	280	..	141	156	15	..
Stafford	208	200	..	8	45	126	81	..
Okarito	66	38	..	28	11	13	2	..
Kumara	626	675	49	..	219	196	..	23
Goldsborough	93	92	..	1	28	24	..	4
OTAGO.								
Hindon	202	447	245	..	51	140	89	..
Naseby and Black's	1,879	1,355	..	524	416	440	24	..
Alexandra	973	960	..	13	175	271	96	..
Clyde								
Roxburgh	736	857	121	..	132	146	14	..
Cromwell	682	1,141	459	..	297	472	175	..
Arrowtown	451	494	43	..	68	50	..	18
Queenstown	805	1,091	286	..	323	445	122	..
Pembroke	26	26	..	..	10	10	..	..
Lawrence	577	1,207	630	..	201	371	170	..
Waikaia	234	501	267	..	37	116	79	..
Tapanui	9	10	1	..	2	4	2	..
Orepuki, Preservation, and Longwood	743	675	..	68	117	249	132	..
Maerewhenua	86	49	..	37	31	31	..	..
Wyndham	39	30	..	9	10	4	..	6
Nenthorn	7	254	247	..	2	14	12	..
Middlemarch	2	..	..	2	1	..	..	1
Totals	27,032	56,468	30,483	1,047	10,118	16,743	7,492	867
Net increase .. ..	..	..	29,436	..	..	..	6,625	..

No. 5.

RETURN of GOLD DUTY credited to LOCAL BODIES for the Year ended 31st December, 1896, and Quarter ended 31st March, 1897.

Local Body.	For the Year ended 31st December, 1896.	For the Quarter ended 31st March, 1897.
COUNTIES—		
Coromandel	£ 2,874 13 10	£ 754 1 11
Ohinemuri	5,740 3 2	1,644 14 6
Piako	5 9 11	7 0 0
Thames	664 5 2	74 16 1
Whangarei	0 2 0	..
BOROUGH—		
Thames	617 3 3	211 4 11
Totals	9,901 17 4	2,691 17 5

No. 6.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND from 1st APRIL, 1857, to 31st DECEMBER, 1896.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31ST DEC., 1896.		ENTERED FOR EXPORTATION TO THE 30TH SEPT., 1896.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31ST DEC., 1896.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Coromandel ..	Auckland	6,952	28,529	2,005,022	7,563,299	2,032,493	7,667,393
" Thames ..		1,080	4,647				
" Ohinemuri ..		17,615	63,489				
" Piako ..		44	184				
Borough of Thames ..		1,780	7,245				
		<u>27,471</u>	<u>104,094</u>				
	Wellington	188	706	188	706
	Marlborough	84,794	330,217	84,794	330,217
	Nelson	1,671,275	6,626,108	1,671,275	6,626,108
County of Buller ..	West Coast	3,452	13,738	4,220,849	16,783,149	4,240,873	16,863,175
" Inangahua ..		3,750	15,003				
" Grey ..		5,252	21,011				
" Westland ..		6,742	26,966				
Borough of Kumara ..		61	242				
" Hokitika ..		150	599				
" Ross ..	617	2,467					
		<u>20,024</u>	<u>80,026</u>				
	Canterbury	24	96	24	96
County of Taieri ..	Otago	517	2,095	5,264,628	20,824,921	5,284,166	20,904,587
" Tuapeka ..		6,255	25,564				
" Vincent ..		5,011	20,520				
" Maniototo ..		1,689	6,931				
" Waihemo ..		209	855				
" Waitaki ..		556	2,293				
" Lake ..		1,756	7,189				
" Wallace ..		1,232	4,929				
" Waikouaiti ..		204	833				
" Bruce ..		383	1,539				
" Clutha ..		14	55				
" Fiord ..		48	192				
" Southland ..		1,639	6,571				
Stewart Island ..	25	100					
		<u>19,538</u>	<u>79,666</u>				
	Unknown	122	484	122	484
Totals	67,033	263,786	13,246,902	52,128,980	13,313,935	52,392,766

No. 7.

COMPARATIVE RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND for the YEARS ended 31st DECEMBER, 1896 and 1895.

PRODUCE OF THE GOLDFIELDS IN THE DISTRICT OF	DURING THE QUARTER ENDED—				TOTALS FOR YEAR 1896.		TOTALS FOR YEAR 1895.	
	31st March, 1896.	30th June, 1896.	30th September, 1896.	31st December, 1896.	Quantity.	Value.	Quantity.	Value.
	Oz.	Oz.	Oz.	Oz.	Oz.	£	Oz.	£
Auckland ..	24,862	16,861	23,152	27,471	92,346	350,691	111,213	430,862
Marlborough ..	478	..	438	..	916	3,588	2,695	10,771
Nelson ..	1,353	32	1,396	..	2,781	10,333	2,460	9,016
West Coast ..	25,672	15,360	18,261	20,024	79,317	317,161	89,429	357,719
Otago ..	24,037	11,955	32,832	19,538	88,362	359,991	87,694	353,796
Totals for 1896	76,402	44,208	76,079	67,033	263,722	1,041,764	..	..
Totals for 1895	67,203	63,927	70,962	91,399	..	..	293,491	1,162,164

* Gold duty abolished in the South Island on the 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

Department of Trade and Customs,
Wellington, 23rd January, 1897.

W. T. GLASGOW,
Secretary and Inspector,

No. 8.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from NEW ZEALAND from 1st APRIL, 1857, to 31st MARCH, 1897.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31st MARCH, 1897.		ENTERED FOR EXPORTATION TO THE 31st DECEMBER, 1896.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31st MARCH, 1897.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Coromandel	Auckland	7,541	31,467				
" Thames ..		1,041	4,272				
" Ohinemuri ..		16,447	60,130				
" Piako ..		70	296				
Borough of Thames ..		1,293	5,442				
		<u>26,392</u>	<u>101,607</u>	2,032,493	7,667,057	2,058,885	7,768,664
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	351	1,392	84,794	330,217	85,145	331,609
County of Collingwood	Nelson	941	3,511				
" Waimea ..		193	691				
		<u>1,134</u>	<u>4,202</u>	1,671,247	6,626,108	1,672,381	6,630,310
County of Buller ..	West Coast	2,826	11,318				
" Inangahua ..		2,459	9,836				
" Grey ..		5,557	22,304				
" Westland ..		5,937	23,826				
Borough of Kumara ..		117	469				
" Hokitika ..		92	368				
" Ross ..	915	3,657					
		<u>17,903</u>	<u>71,778</u>	4,240,873	16,863,175	4,258,776	16,934,95
	Canterbury ..	..	..	24	96	24	96
County of Taieri ..	Otago	494	1,978				
" Tuapeka ..		5,628	22,854				
" Vincent ..		7,465	30,291				
" Maniōtoto ..		2,957	12,041				
" Waihemo ..		250	1,022				
" Waitaki ..		352	1,441				
" Lake ..		3,444	14,105				
" Wallace ..		1,553	6,273				
" Bruce ..		124	501				
" Clutha ..		7	31				
" Fiord ..	768	3,074					
" Southland ..	799	3,226					
		<u>23,841</u>	<u>96,837</u>	5,284,166	20,904,587	5,308,007	21,001,424
Unknown ..	..	..	..	122	484	122	484
Totals ..	..	<u>69,621</u>	<u>275,816</u>	13,313,907	52,392,430	13,383,528	52,668,246

* Gold duty abolished in the South Island on the 31st March, 1891, by "The Gold Duty Abolition Act, 1890."

No. 9.

COMPARATIVE RETURN for the QUARTERS ended 31st MARCH, 1897 and 1896.

District of	Quarter ended 31st March, 1897.		Quarter ended 31st March, 1896.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Auckland	26,392	101,607	24,862	93,731
Marlborough	351	1,392	478	1,910
Nelson	1,134	4,202	1,353	4,991
West Coast	17,903	71,778	25,672	102,678
Otago	23,841	96,837	24,037	98,192
Totals	<u>69,621</u>	<u>275,816</u>	<u>76,402</u>	<u>301,502</u>

Department of Trade and Customs,
Wellington, 24th April, 1897.

W. T. GLASGOW,
Secretary and Inspector.

No. 10.

STATEMENT showing the PRICE of GOLD per OUNCE, PRICE charged per TON for CRUSHING QUARTZ or CEMENT, and PRICES charged for WATER per SLUICE-HEAD per WEEK, during the Year ending 31st March, 1897.

Mining District.	Price of Gold per Ounce.	Price charged per Ton for crushing Quartz or Cement.	Price charged for Water per Sluice-head per Week.	Remarks.
	£ s. d.	£ s. d.	£ s. d.	
AUCKLAND—North Hauraki	£2 16s. to £3 2s. 6d.	.. ..	.. ..	.. ..
South Hauraki	£2 11s. to £2 15s.	0 6 0	3 0 0	.. ..
Ohinemuri	£2 8s. to £3	0 8 0	.. ..	No public batteries. Water not sold.
Te Aroha	£2 11s. to £3 9s.	0 7 6	.. ..	.. ..
Puhipuhi .. ..	.. ..	0 12 0	.. ..	*
MARLBORO—Pelorus and Wairau	3 17 0	.. ..	.. ..	.. ..
NELSON—Wangapeka	3 15 0	.. ..	.. ..	.. ..
Motueka	3 14 0	.. ..	.. ..	.. ..
Charleston	3 19 0	0 1 6	2 15 0	40 in.
Inangahua	£3 18s. to £4 1s. 10d.	8s. to 10s.	.. ..	.. ..
Collingwood	3 13 0	.. ..	.. ..	.. ..
Takaka	3 14 6	.. ..	.. ..	.. ..
Westport	3 19 0	.. ..	.. ..	.. ..
Murchison	3 17 0	.. ..	.. ..	.. ..
Lyell	3 17 0	0 5 0	.. ..	.. ..
WESTLAND—Hokitika, Kanieri, and Waimea	3 18 0	.. ..	3 0 0	40 in.
Totara and Ross	3 18 0	0 12 0	1 10 0	.. ..
Stafford	3 18 6	.. ..	1 10 0	20 in. by 2 in.
Greymouth	£3 18s. to £3 19s.	.. ..	0 10 0	.. ..
Kumara	3 18 0	.. ..	2 0 0	20 in. by 2 in. open- ing. Pressure 6 in. One cubic foot per second.
Ahaura .. ..	.. ..	.. ..	1 10 0	.. ..
Okarito	3 18 0	.. ..	.. ..	.. ..
OTAGO—Hindon	3 17 6	0 15 0?	.. ..	? Nominal.
Tuapeka	3 18 6	.. ..	3 0 0	.. ..
Longwood	3 10 6	.. ..	1 10 0	.. ..
Preservation	4 0 0	.. ..	.. ..	.. ..
Orepuki and Roundhill	3 18 6	.. ..	1 10 0	.. ..
Waiau	3 14 0	.. ..	.. ..	.. ..
Arrow (Wakatipu Goldfield) and Queenstown	£3 15s. to £3 17s. 6d.	12s. 6d. to 15s.	.. ..	.. ..
Mount Ida .. ..	.. ..	.. ..	.. ..	.. ..
Macrae's, Hyde	3 17 0	.. ..	1 0 0	†
Hamilton, Serpentine .. ..	.. ..	.. ..	1 10 0	†
Maerewhenua	3 17 0	.. ..	1 0 0	20 in. by 2 in., and 4 in. pressure.
Cromwell	3 17 0	0 8 0	0 4 0	.. ..
Waikaia	3 14 6	.. ..	1 0 0	.. ..
Tapanui	3 15 0	.. ..	.. ..	.. ..
Wyndham	3 17 0	.. ..	.. ..	.. ..
Roxburgh .. ..	.. ..	.. ..	.. ..	.. ..
Clyde and Alexandra	3 17 6	.. ..	.. ..	.. ..
Black's	3 17 6	1s. per ton for water	.. ..	.. ..

* A small percentage of gold is obtained with the silver; valued together at 3s. per ounce. † Hogburn head = 16 in. by 1 in.; 2½ Hogburn heads = 1 Government head. Private races. ‡ Government head = 40 in. by 1 in. 60 cubic feet discharge per minute. Government race.

TABLE showing the AVERAGE RATE of WAGES per WEEK for the Year ending 31st March, 1897.

Mining District.	General Managers.	Legal Managers.	Mining Managers.	Engineers.	Engine-drivers.	Stokers.	Blacksmiths.	Carpenters.	Miners.	Labourers.	Boys.	Chinese.	Agricultural Labourers.	Domestic Servants.
AUCKLAND—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	6/ to 15/
North Hauraki	£5 to £10	£1 to £2	£3 to £5	2 14 0	2 8 0	2 8 0	2 8 0	2 14 0	2 8 0	2 2 0	5/ to £1 10	..	2 0 0	5/ to 10/
South Hauraki	£5 to £10	1 0 0	3 10 0	2 10 0	2 8 0	2 8 0	3 0 0	3 0 0	2 5 0	1 10 0	10/ to 15/	..	1 10 0	10/
Te Aroha	..	£1 to £2	4 0 0	3 0 0	2 2 0	2 2 0	2 10 0	3 0 0	2 8 0	2 2 0	1 0 0	..	1 10 0	..
Puhipuhi	..	2 0 0	3 0 0	..	2 8 0	2 8 0	2 8 0	2 8 0	2 8 0	2 2 0	..	..	..	..
Ohinemuri	..	£1 to £2	£4 to £5	3 0 0	2 8 0	2 8 0	2 8 0	3 0 0	2 8 0	2 2 0	1 10 0	..	1 0 0	Up to 10/ per week.
MARLBOROUGH—	3 0 0	..	..	..	3 0 0	3 0 0	2 10 0	2 8 0	5/ to 10/	..	£1 and keep	8/-12/ & keep
Waiau	..	2 0 0	3 15 0	..	..	..	3 0 0	3 0 0	2 10 0	2 8 0	..	..	..	..
Pelorus
NELSON—
Collingwood	..	1 10 0	5 0 0	3 10 0	2 10 0	2 0 0	2 14 0	2 14 0	2 10 0	2 0 0	0 12 0	..	1 5 0	10/
Takaka	2 10 0	2 10 0	1 16 0	2 10 0	2 10 0	1 16 0	1 16 0	10/ to 15/ keep	..	£1 and keep	7/
Inangahua	£4 to £10	£3 10 to £4	3 10 0	3 10 0	4 0 0	3 12 0	£2 17 to £3	£2 8 to £3	£1 16 to £2 8	..	£1 to £1 10	10/ to 15/
Charleston	3 0 0	3 10 0	2 10 0	2 14 0	15/ and found	..	£1 and found	10/
Westport	..	0 10 0	4 0 0	3 0 0	8/ a day	8/ a day	10/ a day	12/ a day	9/ a day	8/ a day	1 0 0	..	£1 and found	10/ to 15/
Lyle	..	3 0 0	5 0 0	3 0 0	3 0 0	3 0 0	3 10 0	3 12 0	3 0 0	2 8 0	2 0 0	..	£1 and found	10/ to £1
Ahaura	3 0 0	3 0 0	2 10 0	30/ to 40/	..	..	1 10 0	7/ to 10/
Murchison	5 0 0	3 10 0	3 0 0	2 8 0	3 0 0	3 0 0	2 8 0	2 8 0	2 0 0	..	£1 and found	12/
Wangapeka	3 0 0	2 15 0	2 16 0	2 0 0	0 7 0	1 10 0	1 15 0	8/ to 12/
WESTLAND—
Waimea and Stafford	5 0 0	3 0 0	3 0 0	..	3 0 0	3 0 0	2 10 0	2 10 0	1 0 0	2 0 0	1 10 0	£1
Hokitika and Kanieri	..	1 0 0	£4 to £5	..	..	..	£3 to £4	3 12 0	3 0 0	2 10 0	1 0 0	£1 10 to £2	1 0 0	8/ to 15/
Ross	..	1 5 0	5 0 0	..	..	..	4 0 0	3 12 0	3 0 0	2 10 0	1 10 0	..	..	10/
Kumara	..	1 10 0	4 0 0	3 0 0	3 0 0	..	3 10 0	3 10 0	£3 10 to £3	£2 to £2 10	1 0 0	..	25/ and board	7/ to 10/
Greymouth	..	1 0 0	£4 to £6	£4 to £5	3 0 0	2 5 0	£3 to £3 10	10/ to 14/ 6 day	£2 10 to £3	7/ to 9/	10/ to 12/	20/-30/ found	£1 to £2 found	6/ to 12/ 6
Okarito	£3 to £3 10	8 12 0	3 0 0	3 0 0	0 15 0	..	2 0 0	15/
OTAGO—
Hindon	..	4 0 0	4 0 0	3 10 0	3 0 0	..	2 8 0	3 0 0	2 8 0	2 0 0	1 0 0	..	1 0 0	£12 per ann.
Tuapeka	..	4 0 0	3 10 0	£4 to £5	2 10 0	2 5 0	2 14 0	2 14 0	2 2 0	2 0 0	0 10 0	1 0 0	1 0 0	10/
Tapahui	10/ a day	88. a day	7/ a day	1 16 0	0 8 0	1 10 0	1 0 0	8/
Chromwell	..	5 0 0	4 0 0	3 10 0	3 0 0	2 10 0	2 10 0	3 0 0	2 8 0	2 0 0	1 5 0	1 0 0	£1 and found	9/
Clyde	..	4 0 0	3 10 0	2 15 0	2 10 0	..	3 0 0	3 0 0	2 8 0	2 2 0	0 15 0	1 0 0	£1 and found	7/ to 15/
Alexandra	..	4 0 0	3 10 0	2 15 0	2 10 0	..	3 0 0	3 0 0	2 8 0	2 2 0	0 15 0	1 0 0	£1 and found	7/6 to 15/
Black's	..	4 0 0	3 10 0	2 15 0	2 10 0	..	3 0 0	3 0 0	2 8 0	2 2 0	0 15 0	1 0 0	£1 and found	7/ to 15/
Roxburgh	..	4 0 0	3 10 0	2 15 0	2 10 0	..	3 0 0	3 0 0	2 8 0	2 2 0	0 8 0	1 0 0	£1 and found	8/ to 12/
Wakala	2 8 0	2 8 0	2 8 0	2 2 0	0 8 0	10/ to 15/	17/6 to £1	6/ to 10/
Orepuki and Longwood	..	£40 per year	3 0 0	..	2 10 0	..	2 5 0	9/ a day	2 2 0	1 16 0	0 15 0	1 10 0	1 0 0	8/ to 15/
Arrow	..	1 0 0	5 0 0	4 0 0	3 0 0	2 10 0	3 0 0	4 0 0	2 8 0	2 8 0	10/ to £1	£1 to £1 10	£1 to £1 5	8/ to 15/
Queenstown	..	1 0 0	5 0 0	4 0 0	3 0 0	2 10 0	3 0 0	4 0 0	3 0 0	2 8 0	10/ to £1	£1 to £1 10	£1 to £1 5	8/ to 15/
Mount Ida	3 0 0	3 0 0	8/6 to 10/	7/ to 8/ a day	0 15 0	..	1 5 0	10/
Maerewhenua	..	£40 to £50	3 0 0	..	3 0 0	..	2 14 0	2 14 0	49/ to 48/	1 16 0	0 12 0	..	15/ to £1	6/ to 10/
Wyncharn	3 0 0	..	..	..	9/ a day	9/ a day	8/ a day	7/ a day	0 12 0	..	0 7 0	8/ to 10/

No. 14.

TABLE showing approximately the NUMBER, DESCRIPTION, and VALUE of the WATER-RACES, TAIL-RACES, DAMS, RESERVOIRS, and GROUND-SLUICES in Operation during the Year ending 31st March, 1897.

Mining District.	Water-races.				Tail-races.		Dams.		Reservoirs.		Ground-sluices.		Approximate Total Cost.
	No.	Length in Miles.	No. of Sluice-heads.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	No.	Approximate Cost.	
AUCKLAND—				£		£		£		£		£	£
Hauraki North ..	5	2 $\frac{1}{2}$	5	450	2	50	3	510	2	25	..	..	1,035
Hauraki South ..	16	21 $\frac{3}{4}$	115	55,520	4	280	11	770	2	5,000	..	..	61,570
Te Aroha ..	1	..	10	3,000	..	..	..	..	..	..	..	..	3,000
Puhipuhi ..	9	17 $\frac{1}{2}$	71	1,900	..	..	1	150	..	..	..	..	2,050
Ohinemuri ..	14	18 $\frac{3}{4}$	99	14,550	1	1,000	7	3,000	..	..	..	..	18,550
Totals ..	45	60 $\frac{5}{8}$	300	75,420	7	1,330	22	4,430	4	5,025	..	..	86,205
MARLBOROUGH—													
Pelorus ..	26	42	52	2,400	15	250	14	220	..	..	..	..	2,870
NELSON—													
Wangapeka, Baton, and Sherry ..	14	13 $\frac{1}{2}$	141	10,310	7	650	4	100	..	..	..	..	11,060
Collingwood ..	85	73 $\frac{3}{8}$	640	139,453	62	7,210	50	5,315	..	..	..	..	151,978
Inangahua ..	374	310	3,054	113,682	500	29,329	560	21,685	..	..	..	..	164,696
Charleston ..	245	260	1,250	3,500	130	6,000	400	5,500	2	1,500	39	200	16,700
Westport ..	171	149	1,163	21,036	169	21,677	340	15,850	..	..	..	..	58,563
Lyller ..	49	53	98	6,500	12	450	15	500	..	..	..	..	7,450
Murchison ..	122	101	380	17,000	51	1,600	47	1,150	..	..	..	..	19,750
Ahaura ..	740	850	3,000	150,000	800	70,000	630	18,500	..	..	..	..	238,500
Motueka ..	6	5	20	1,080	1	60	5	70	..	..	..	..	1,210
Totals ..	1,806	1,814 $\frac{5}{8}$	9,746	462,561	1,732	136,976	2,051	68,670	2	1,500	39	200	669,907
WESTLAND—													
Hokitika & Kanieri ..	275	203	585	210,000	270	2,600	295	2,700	..	..	..	..	215,300
Ross ..	141	119	530	55,756	167	1,800	73	1,927	..	..	50	620	60,103
Kumara ..	190	103	380	24,500	185	14,000	70	5,000	11	7,000	40	800	51,300
Greymouth ..	300	280	1,000	60,000	750	17,000	950	9,750	..	..	..	..	86,750
Okarito ..	20	15	150	270	12	150	12	200	..	..	..	..	620
Stafford ..	800	400	16,000	20,000	600	5,000	600	8,000	50	2,500	600	3,000	38,500
Totals ..	1,726	1,120	18,645	370,526	1,984	40,550	2,000	27,577	61	9,500	690	4,420	452,573
OTAGO—													
Hindon ..	65	105	640	31,746	19	970	30	1,110	..	..	35	125	33,951
Tuapeka ..	300	870	1,750	15,000	420	9,000	300	6,250	..	..	..	..	30,250
Tapanui ..	5	8 $\frac{1}{2}$	10	130	3	30	2	30	..	..	..	..	190
Clyde & Alexandra ..	237	573	650	27,885	161	10,615	102	8,410	..	..	..	..	46,910
Black's ..	128	499	541	38,500	113	7,180	83	7,515	..	..	..	..	53,195
Arrow ..	90	175	225	14,000	125	4,500	25	1,400	25	..	20	200	20,100
Roxburgh ..	195	434	1,342	36,225	87	6,385	73	4,710	1	3,000	..	..	50,320
Cromwell ..	436	1,164	1,604	79,267	259	12,590	156	10,920	..	..	..	..	102,777
Waikaia ..	135	390	800	24,000	170	2,200	125	2,080	..	..	23	2,050	30,330
Orepuki and Longwood ..	420	400	650	20,000	160	7,000	160	2,400	4	150	150	2,800	32,350
Queenstown ..	120	200	600	65,000	150	5,000	40	1,700	30	..	..	..	71,700
Naseby ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kyeburn & Clarke's ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hamilton's and Sowburn ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hyde & Fullerton's ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Macrae's, Strath-Tairi, and Shag Valley ..	520	1,600	1,820	144,000	550	20,000	210	6,500	..	..	..	..	170,500
Serpentine ..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Bathans' and Ida Valley ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maerewhenua ..	20	163	62	16,000	85	1,800	39	1,500	..	..	..	..	19,300
Wyndham ..	17	18 $\frac{3}{4}$	77	944 $\frac{1}{2}$	1	..	1	10	..	..	..	..	954
Total ..	2,688	6599 $\frac{7}{10}$	10,771	512,697 $\frac{1}{2}$	2,303	87,270	1,346	54,535	60	3,150	228	5,175	662,827

SUMMARY.

Auckland ..	45	60 $\frac{5}{8}$	300	75,420	7	1,330	22	4,430	4	5,025	..	..	86,205
Marlborough ..	26	42	52	2,400	15	250	14	220	..	..	..	..	2,870
Nelson ..	1,806	1814 $\frac{5}{8}$	9,746	462,561	1,732	136,976	2,051	68,670	2	1,500	39	200	669,907
Westland ..	1,726	1,120	18,645	370,526	1,984	40,550	2,000	27,577	61	9,500	690	4,420	452,573
Otago ..	2,688	6599 $\frac{7}{10}$	10,771	512,697 $\frac{1}{2}$	2,303	87,270	1,346	54,535	60	3,150	228	5,175	662,827
Totals ..	6,291	9636 $\frac{1}{10}$	39,514	1,423,604 $\frac{1}{2}$	4,041	266,376	5,433	155,432	127	19,175	957	9,795	1,874,332

No. 15.

RETURN of CASES in the WARDENS' COURTS, and COSTS AWARDED, for the Year ending 31st March, 1897.

Mining District.	Number of Mining Disputes adjudicated on.	Aggregate Amount of Value.		Amount of Costs Awarded.	Cases wherein Judgment has decreed Specific Performance.
		Claimed.	Recovered.		
AUCKLAND—		£ s. d.	£ s. d.	£ s. d.	
North Hauraki	178	95 3 0	95 3 0	82 17 0	..
South Hauraki	54	655 11 0	124 12 0	125 6 0	19
Te Aroha	6	75 10 0	75 10 0	1 2 0	..
Puhipuhi	7	..	..	..	..
Ohinemuri	250	1,272 4 6	267 11 11	83 2 0	15
MARLBOROUGH	7	..	..	4 0 0	4
NELSON—					
Collingwood	10	169 15 4	85 5 4	17 8 0	13*
Inangahua	30	46 10 0	..	16 11 0	..
Lyell	5	..	..	..	..
Westport	37	150 11 6	39 1 6	28 7 0	..
Charleston	8	57 10 0	1 0 0	5 12 0	..
Ahaura	13	175 0 0	4 10 0	6 8 0	10
Murchison	1	..	..	..	..
WESTLAND—					
Kumara	17	150 0 0	28 0 0	40 8 6	..
Greymouth	16	..	..	15 7 0	1
Hokitika and Kanieri	3	30 15 11 $\frac{3}{4}$	30 15 11 $\frac{3}{4}$	4 8 0	..
Stafford	11	5 0 0	..	1 12 0	..
Ross .. .. .	..	..	..	..	..
Okarito	1	10 0 0	..	..	..
Goldsborough	9	..	..	6 17 0	..
OTAGO—					
Tapanui .. .. .	..	..	..	..	..
Hindon	1	..	..	3 15 0	1
Tuapeka	16	120 0 0	15 5 0	36 3 6	..
Cromwell	42	1,126 13 5	104 1 2	30 16 2	..
Roxburgh	15	4 10 0	4 10 0	30 18 0	1
Black's	5	..	..	2 16 0	..
Clyde and Alexandra	22	566 6 0	40 4 0	46 6 6	1
Waikaia	6	19 15 0	9 15 0	14 1 0	..
Orepuki and Longwood	22	125 4 3	2 19 3 $\frac{1}{2}$	58 19 6	..
Arrow (Wakatipu Goldfield)	8	..	..	2 17 0	..
Queenstown	15	..	..	20 6 0	..
Mount Ida	31	170 16 6	10 1 0	37 19 0	..
Maerewhenua	6	5 0 0	..	18 7 0	..
Wyndham .. .. .	..	..	..	..	..
Totals	852	5,031 16 5$\frac{3}{4}$	938 5 2	742 10 2	65

*Cancellation, &c.

No. 16.

RETURN of the NUMBER of MINING LEASES or LICENSES and AGRICULTURAL LEASES in Force on the 31st March, 1897, the EXTENT of GROUND LEASED or held under LICENSE, and RENTAL per ANNUM.

Mining Leases.					Agricultural Leases.				
Mining District.	No.	Gross Acreage.		Rental per Annum.	No.	Gross Acreage.		Rental per Annum.	
		A.	R. P.	£ s. d.		A.	R. P.	£ s. d.	
AUCKLAND—									
Hauraki North	426	25,327	0 33	7,681 6 0	..	..	..	..	..
Hauraki South	530	36,690	0 11	13,229 12 0	..	..	..	..	..
Te Aroha .. .. .	..	..	..	..	1	100	0 0	1 5 0	..
Puhipuhi	18	1,790	2 12	895 10 0	..	..	..	..	..
Ohinemuri	622	44,895	2 38	20,902 11 6	16	744	0 0	Granted before 1884. No rent payable.	..
MARLBOROUGH—									
Wairau and Pelorus	26	1,335	2 14	304 2 9	..	..	..	..	..
NELSON—									
Collingwood	1	10	0 0	10 0 0	..	..	..	..	..
Inangabua	165	9,683	1 9	4,255 7 6	..	..	..	..	..
Charleston	9	119	0 0	64 10 0	7	147	0 0	4 8 6	..
Ahaura .. .. .	..	..	..	..	..	..	..	..	..
Westport .. .. .	..	..	..	..	..	..	..	..	..
Lyell .. .. .	..	..	..	..	..	..	..	..	..
Murchison .. .. .	..	..	..	..	..	..	..	..	..
Owen's .. .. .	..	..	..	..	..	..	..	..	..
WESTLAND—									
Okarito .. .. .	..	..	..	..	1	50	0 0	1 17 6	..
Hokitika and Kanieri	9	637	3 35	317 0 0	6	242	0 3	14 16 0	..
Kumara	20	235	1 9	167 18 0	3	58	1 3	6 0 0	..
Stafford	5	100	0 0	50 0 0	..	..	..	..	..
Greymouth	39	1,408	0 0	568 0 0	..	..	..	..	..
Ross	23	1,342	0 23	685 0 0	..	..	..	..	..
OTAGO—									
Waikaia	19	936	0 16	375 15 0	..	..	..	..	..
Cromwell .. .. .	..	..	..	..	8	746	3 26	53 17 8	..
Hindon	36	1,041	0 0	520 10 0	..	..	..	†	..
Tuapeka	55	2,560	2 9	1,278 0 0	40	492	0 0	41 5 0	..
Black's	19	680	0 0	264 15 0	14	343	0 0	15 18 3	..
Clyde and Alexandra	38	1,458	0 0	729 0 0	..	..	..	..	..
Roxburgh	27	1,218	0 0	609 0 0	..	..	..	..	..
Naseby	59	1,777	3 36	726 17 6	..	..	..	..	..
Arrow (Wakatipu Goldfield) .. .. .	..	..	..	..	4	154	3 21	§11 10 6	..
Queenstown .. .. .	..	..	..	..	12	209	0 34	¶7 18 3	..
Maerewhenua	1	30	0 12	15 10 0	33	1,164	0 0	¶45 12 8	..
Tapanui .. .. .	..	..	..	..	..	..	..	..	..
Wyndham .. .. .	..	..	..	..	..	..	..	..	..
Totals	2,147	133,281	2 17	53,650 5 3	145	4,351	1 7	204 9 4	

	No.	Area.			Rental.		
		A.	R.	P.	£	s.	d.
* Occupation licenses	5	137	0	27	10	6	0
†	9	385	2	0	21	2	3
‡	37	1,687	3	19	85	18	0
§	17	580	0	2	25	7	0
.. .. .	19	238	1	19	12	13	0
¶	13	361	2	33	19	9	0
	100	3,390	2	20	£174	15	3

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

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