

SESS. II.—1897.
NEW ZEALAND.

MINES STATEMENT.

BY THE HON. A. J. CADMAN, MINISTER OF MINES.

Mr. SPEAKER,—

In placing before you the Statement showing the condition of the mining industry it is my pleasing duty to announce that the progress consequent on the impetus given to gold-mining during the year 1895-96 still continues. The demand for a field for investment has resulted in a large number of claims being occupied, and in many cases mining properties have been acquired by agents representing well-known English and Continental investors. A great addition to the number of mining companies has been made, and on their behalf extensive mining operations are carried on to open up the older, as well as the newer mines, by the sinking of shafts, driving long tunnels or adits, and the construction of water-races for the development both of quartz-mines and alluvial workings. In the prosecution of these works new and improved machinery—some being on a very large scale—has been introduced for winding, pumping, milling, ventilation, &c., in quartz-mines; also for dredging, elevating, cement-crushing, and hydraulic sluicing in alluvial drift and river-bed workings. The expenditure upon works of this kind had hitherto been beyond the resources of many of the New Zealand mining companies, and it is only since the investment of outside capital has been directed to the colony that these necessary works could be undertaken. Prospecting work in search of reefs containing gold and silver has been vigorously carried on throughout the Auckland District, especially in the dense and hitherto unexplored and almost inaccessible bush localities. Numerous new lines of reefs have been discovered, and hundreds of men are already engaged in exploration works to open up the lodes. Samples of quartz tests, which in many instances have given very encouraging results, tend to show that many of these newly-discovered reefs are valuable.

In the Middle Island goldfields prospecting for reefs is pursued with favourable results. The alluvial drifts containing gold are being further tested, and river claims have been taken up in localities that were not previously deemed suitable for working by means of dredges.

Although the tables and returns attached to the Statement have, as usual, been compiled to the 31st of March last, I have, however, owing to the late period of the ordinary meeting of Parliament this year, endeavoured as far as possible to furnish the latest information procurable as to the position of the mining industry at the present time. It will accordingly be found that the results to be obtained from the returns are in some instances supplemented by more recent information in the Statement itself.

MINERAL PRODUCTION.

The quantity of gold, silver, coal, and other minerals, including kauri-gum, produced for the year ending the 31st December last will be found in Table I., annexed. The total production of gold and silver was 358,001 oz., representing a value of £1,052,017, compared with a value of £1,172,843 for the preceding year. This shows a decrease of £120,826.

Of other minerals, including coal, 800,205 tons were produced, representing a value of £862,224, as against 734,693 tons, of a value of £826,048, for the previous year. The production of kauri-gum was 7,126 tons, valued at £431,323, as compared with 7,425 tons, valued at £418,766, for 1895.

The quantities and values of the chief mineral productions for the year ending 31st December last were as follow :—

Product.	Quantity.	Value. £
Gold	263,694 oz.	1,041,428
Silver	94,307 "	10,589
Antimony-ore	21 tons	450
Manganese-ore	65 "	205
Mixed minerals	37 "	1,335
Colonial coal exported, including that used by Home steamers... ..	79,524 "	71,984
Coke exported... ..	105 "	263
Colonial coal consumed in New Zealand	713,327 "	356,664
Kauri-gum	7,126 "	431,323
Total value of production for 1895		1,998,891
" " 1896		1,914,241
Total decrease		<u>£84,650</u>

The total value of the gold, silver, coal, and other minerals, including kauri-gum, exported up to the end of 1896 was £66,759,584.

GOLD-MINING.

The decrease in the yield of gold during last year may be accounted for in several ways, and is not altogether due to the scarcity of the precious metal. As, for example, the increased demand for mining properties by English companies and the consequent change of ownership of many of the gold-producing mines, together with an alteration of policy in preparing for extensive exploring operations, with the object of the more efficient working of the mines in the future, led to a contraction in the quantity of ore mined. Many crushing-plants were thus left comparatively idle, not for want of material to operate upon, but because it was deemed more advisable to let the ore remain in the ground until improvements in gold-saving appliances were effected than to continue mining and milling on the hand-to-mouth principle of the past. This applies both to the Hauraki district and to Reefton, which is the chief centre of quartz-mining on the West Coast goldfields. The alluvial fields of the West Coast and Otago also show a decrease in the yield, chiefly owing to the scarcity of water. A satisfactory yield of gold will, I have no doubt, however, be maintained in the near future when the new quartz-crushing mills now in course of erection are completed and kept fully employed.

Many of the claims taken up are now in the hands of persons who have given evidence of their desire to develop the areas by the expenditure of large amounts upon new works, but there are many claims and water-rights held by persons who have failed to show what work they intend to do, and who are evidently not prepared to comply with the conditions under which they hold their properties. The certainty of tenure depends in a large measure on the holders of rights themselves, due protection being given to all who carry on work in a *bonâ fide* manner, whilst those who neither comply with the conditions nor take steps to obtain protection are liable to have their titles assailed at any moment. It is the policy of the Government to aid in every way by giving security of title and other advantages to those who are developing the mining resources of the colony, but the holding of claims and other mining rights for merely speculative purposes will not be permitted.

The quantity of gold entered for exportation through the Customs for the year ending 31st March last, as shown in Table No. 2 annexed, was 256,913 oz., representing a value of £1,015,742; while the quantity exported for the same period of the preceding year was 302,690 oz., valued at £1,196,081. This shows a decrease of 45,777 oz. Of the quantity exported, Auckland contributed 93,876 oz., Marlborough 789 oz., Nelson and West Coast 74,082 oz., and Otago 88,166 oz.

QUARTZ-WORKINGS.

This important branch of the gold-mining industry continues to make rapid and advanced strides, notwithstanding the fact that the yield shows a slight decrease compared with 1895-96. This decrease has been in the most part from the mines in the North Island and at Reefton, the cause of which has already been pointed out. During last year 113,731 tons of quartz and tailings were treated in the Auckland District, yielding 198,547 oz. bullion, representing an estimated value of £354,256, as against bullion to the value of £378,107 for the former year, being a decrease of £23,851. In Nelson and the West Coast 15,369 tons of quartz was crushed for a return of 10,217 oz. of gold, valued approximately at £40,900.

In the future treatment of quartz for the extraction of gold the new plants erected on the different fields will be in a marked degree superior to those formerly in use. The adoption of labour-saving appliances, stone-breakers, elevators, and self-acting feeders for the mills, the concentration of tailings and slimes, and improvements in the methods of dealing with the pyritous matter will be the means of reducing the cost of extracting the gold and silver from the ore.

The cyanide process, which is already used with success, is being made the subject of exhaustive experiments with a view to improvements in the methods of percolation, filtration, &c. In the Hauraki district 77·7 per cent. of the quantity of gold and bullion produced was won by this process. The quality of the bullion extracted by the cyanide process was, however, of a lower grade than that obtained by amalgamation, the proportion of the value of the former being only 64 per cent. From the increase in the number of plants in which the Cassel Company's patent will be used which are already erected and in course of construction it is evident that this method of gold-saving will be even more extensively used in the future. In view of present importance and the continuance of future great benefit arising from the use of the cyanide process, which is eminently suitable for the extraction of gold from a large proportion of the quartz found in New Zealand, it has been decided, subject to the approval of the Legislature, to acquire by purchase the existing patent-rights within the colony for the use of cyanide in the extraction of gold and silver.

COROMANDEL COUNTY.

The Hauraki Mine continues to produce the richest quartz in this locality. The other mines—namely, the Scotty's, Kapanga, Success, Hauraki North, Tokatea, and Royal Oak—have produced payable quartz, but the returns were limited, the operations carried on being chiefly towards development, and not in working out the reefs. The Kapanga shaft, which is the deepest in the colony, has been sunk to a depth of 1,000 ft., and boring operations have been again resorted to, with a view of further deepening the shaft. The Scotty's shaft is being continued, and has now reached a depth of 325 ft. Other shafts are also being put down in this portion of the district; whilst at Kauri Block, especially where three years ago the probability of mining activity appeared very remote, no less than fifteen engine-shafts may now be seen, in all of which mines vigorous operations are being carried on; and hopes are entertained that the Hauraki reef will be traced through the ground adjacent to that now famous mine. The low levels at Tokatea are also being further worked, and a shaft is now sunk 100 ft. below the adit-level. At Kuaotunu the work of development in the Try Fluke and Kapai-Vermont Mines is steadily progressing, and throughout the Kauri Company's land a good deal of prospecting work is being carried on.

In this district 18,748 tons of quartz and 100 tons of tailings were treated during the year, yielding 35,846 oz. and 40 oz. of gold respectively, representing a value of £100,911. The number of miners in this district was 1,329, of which 750 were employed in connection with the gold-producing mines.

Dividends.

The Hauraki Gold-mining Company, since the date of registration on the 5th December, 1894, sold gold to the value of £220,866, and paid dividends up to date amounting to £136,000.

THAMES.

This portion of the district, where the rich ore-deposits yielded such marvellous returns in the past, is now receiving the attention of English companies, and the low levels are about to be again opened up. The Queen of Beauty and the Deep Sinker shafts are being sunk in the southern end of the field, whilst in the Moanataiari and Kuranui-Caledonian Mines shafts are being sunk and workings extended to develop the low levels at the northern end. To the eastward the Adelaide and New Alburnia shafts are being sunk to test the reefs at greater depths, and the Moanataiari low tunnel is also being extended. In the other parts of the district low-level tunnels are being driven to prospect ground lately taken up, as well as in the older claims where reefs were formerly worked, with very profitable results.

During the past year 15,694 tons of quartz were crushed, yielding 10,829 oz. of gold; and 11,367 tons of tailings yielded 2,612 oz. of gold: representing an estimated value of £34,254. The number of miners in this district was 1,527, of which 572 were employed in the gold-producing mines.

Dividends.

The Waiotahi Mine during the year paid £2,250 in dividends, and since the incorporation a total of £34,500 has been paid in dividends by the company.

OHINEMURI COUNTY.

The returns from the mines that have given continuous yields are again most satisfactory. A vast amount of work has been carried on in the Waihi district by the Waihi, Union, Waihi-Silverton, Waihi Consolidated, and other mining companies in the development of their reefs. In the Waitekauri district, and also at Komata, Maratoto, Wharekeraupunga, Owharoa, and Karangahake, important reefs are being explored and additional milling machinery erected, which are evidence that the yields will be largely augmented in the near future.

During the past year 64,463 tons of quartz and 2,522 tons of tailings yielded by amalgamation 91 oz. and by cyanide 148,535 oz. of bullion, making a total of 148,626 oz. of bullion, representing a value of £218,068, which is equal to about £1 9s. 4d. per ounce: as against 147,500 oz. of bullion, valued at £174,355—equal to £1 3s. 7d. per ounce—for the previous year. During the year the number of miners in this district was 1,820, of which 1,018 were employed in the gold-producing mines, compared with 1,726 for last year.

Waihi Gold-mining Company.

During the four weeks ending the 24th July the Waihi Gold-mining Company crushed and treated 3,120 tons of ore, for bullion valued at £11,668, the average being £3 14s. 9½d. The present return shows enhanced value of the ore on that of last month, when 3,240 tons gave £11,823, the average being £3 12s. 1½d. per ton. That in its turn was also an advance on the month before, when £11,297 in value was extracted from 3,294 tons, the average being £3 8s. 7d. per ton. The grand total won from the mine, corrected to date from the figures absolutely realised in London, now reaches £571,040, the following table being the return from this famous mine since 1890:—

	Bullion won.	Tons.	£	s.	d.
In 1890	21,112	13	6
In 1891	23,935	5	11
In 1892	...	18,236	44,888	2	4
In 1893	...	19,805	61,900	10	11
In 1894	...	24,864	82,827	2	2
In 1895	...	33,670	120,334	2	2
In 1896	...	34,400	137,321	8	2
Period ending 6th February, 1897	...	4,140	14,010	14	1
Four weeks ending 6th March, 1897	...	3,120	10,585	7	4
" 3rd April, 1897	...	3,150	10,033	2	0
" 1st May, 1897	...	3,060	9,303	16	5
" 29th May, 1897	...	3,294	11,297	0	0
" 26th June, 1897	...	3,240	11,823	0	0
" 24th July, 1897	...	3,120	11,668	0	0
" 21st August, 1897	...	3,120	11,757	1	10
			£582,797	6	10

The number of dividends paid since the inception of the company was seventeen, amounting to £228,500.

Waitekauri Gold-mining Company.

Dividends amounting to £21,450 have been paid from this mine.

Crown Mines Gold-mining Company.

A dividend of 1s. per share on 200,000 shares, or £10,000, has been recently paid by this company.

PIAKO COUNTY.

This district is again receiving a considerable amount of attention. Prospecting works are being carried on at Waiorongomai, where the New Zealand Exploration Company is engaged in driving an expensive tunnel for the development of the reefs. This tunnel, when completed, will be upwards of two miles in length. In the vicinity of Te Aroha Township the owners of the Montezuma and Mount Morgan Claims are introducing the thermo-hyperphoric treatment of quartz, a new process, for which the highest results are claimed in dealing with complex and refractory ores. The Rev. J. Campbell has the conduct of operations, and the necessary plant is being erected under his supervision on a suitable site near the township. At the Tui district the Champion Company is again engaged in taking out quartz from their mine.

The quantity of quartz crushed and treated during the past year was 934 tons, yielding 3,763 oz. of low-priced bullion, representing a total value of £986.

During the year one hundred men were employed on this field.

WEST COAST.

Reefton, which I have already observed is the chief quartz-mining centre on the West Coast, has experienced a decided revival in consequence of a change of ownership in many of the mining properties and the application of capital in developing the mines. The Consolidated Goldfields of New Zealand (Limited), in addition to having undertaken the construction of an expensive water-race and erection of crushing machinery, are carrying on extensive prospecting works, and are sinking shafts and driving tunnels to work the deep levels. This example is being followed by others, while fresh discoveries are attracting attention, notably at the Victoria Range, in the Reefton district, and the Paparoa Range, to the northward of the Grey River. Those reefs being at high altitudes and above snow-line, operations cannot be carried on during the winter months. When the necessary machinery is erected for the treatment of ores the West Coast quartz-reefs will again furnish employment to large numbers of miners. In the Collingwood district the Taitapu Gold Estates Company have carried on extensive prospecting operations, and are about to erect quartz-crushing machinery in the vicinity of the reefs at Golden Ridge. Other companies have also commenced operations in this district, and the locality—one of the pioneer gold-producers of the colony—is experiencing a revival of the mining industry. The quantity of quartz crushed during the year was 15,369 tons, for a yield of 10,217 oz. 10 dwt. of gold, of the value of £40,870.

Dividends.

The following mining companies paid dividends during the year: Keep-it-Dark, £3,000; Big River, £1,800; A1, £100.

OTAGO.

The principal quartz-mines are in the Macetown and Skipper's districts. Mines are also worked at the Old Man Range, the Carrick Range, and Macrae's Flat. At Skipper's the Achilles Company is being profitably worked, and extensive development works carried on. The Cromwell Mine at New Bendigo is also receiving attention, and increased returns are anticipated for next year. The rich returns from the Morning Star Mine, at Long Beach, Preservation Inlet, have given evidence that the development of the resources of the West

Coast Sounds is only commencing, and that a prosperous future awaits mining enterprise in this remote portion of the colony. Attention is also being directed to other quartz-fields in the ranges bounding the Clutha Valley; whilst in the Taieri River district the reefs at Barewood are being prospected with the aid of English capital. In the Nenthorne district also the attention of investors is being given to some promising reefs.

The quantity of quartz crushed during the year was 9,450 tons, for a yield of 10,247 oz. 18 dwt. of gold, and a parcel of 19 tons of tailings treated for a yield valued at £69 14s. : making a total value of £41,061 6s.

ALLUVIAL MINING.

This branch of the mining industry is confined to the Middle Island—in the Marlborough, Nelson, West Coast, and Otago Districts.

MARLBOROUGH.

The principal fields in the Marlborough District are Wakamarina, Mahakipawa, and the Wairau, but at none of these centres is the industry in a very active state. At Mahakipawa the wash in the creek-bed has been worked out, and attention is being directed to working the terraces and deep ground in the flat; a large extent of country where little or no prospecting has yet been done, and which, judging from the formation of the ground, ought to contain auriferous gravels, might well receive attention.

NELSON.

The principal goldfield in this district is at Collingwood. The Parapara Hydraulic Sluicing Company is still working, but no returns have been made known. A number of men are also engaged on the Takaka and Waingaro Rivers. To the latter a track was constructed by means of a Government grant. On the Baton and Wangapeka Rivers a revival has taken place, and it is expected that the operations on McRae's freehold will be conducted on an extensive scale. At the Mount Arthur tableland a number of claims have been taken up, and the asbestos deposits in this locality are also receiving attention.

WEST COAST.

The West Coast goldfield, which extends a distance of over 270 miles from Karamea to Jackson's Bay, has been one of the best gold-producers in the colony, and will, as the water-supply is improved for working the deeper ground, continue to yield satisfactory returns. The Addison's Flat district affords employment to a large number of men, and it is hoped that the introduction of capital will shortly enable the low-grade cement in the vicinity of Charleston to be profitably worked. Dredging is also carried on in the Buller River at Fern Flat, and also at a place below Lyell.

Grey Valley.

This district has in times past afforded remunerative employment for large numbers of men, but, the shallow levels having been practically worked out, it will be necessary for an abundant water-supply to be provided for the successful working of the deeper auriferous drifts, which can only be done on an extensive scale, and with modern and improved appliances.

Kumara.

The excellent water-supply brought in by the Government in the Waimea-Kumara Race has enabled the miners in this district to profitably work extensive layers of gravel, which without the aid of this water-supply could not have been done. The recent improvements in the storage of water will enable large areas of comparatively poor ground on the low levels to be sluiced away, and will continue to afford remunerative employment for a number of men.

Rimu and Kanieri.

The ground in the vicinity of the Kanieri Forks is being worked by means of the Kanieri Water-race, but at Back Creek and Seddon's Terrace operations are retarded by the lack of an efficient water-supply. Surveys have, however, been

made with a view of ascertaining whether water can be delivered from the Kanieri Lake at a sufficient elevation to enable the large quantities of gravel in this locality to be worked by means of hydraulic sluicing.

Ross.

Efforts are still being made to secure capital to erect pumping machinery to drain the gravel drifts in the deep ground in this locality. The terraces are worked, where sufficient water is available, by means of hydraulic sluicing.

OTAGO.

The principal goldfields of Otago are at Tuapeka, Clutha Valley, Manuherikia Valley, Mount Ida, and the Lake districts. Gold to the value of £20,954,891 has been obtained from the alluvial workings.

Tuapeka.

In this locality the Blue Spur Gold-mining Company still continues to profitably work the vast deposits of cemented gravel found on the schist bottom, while at Weatherstone's and Waitahuna sluicing operations are still being carried on.

Clutha Valley.

The Clutha Valley contains the richest deposit of auriferous drift yet known in New Zealand. The bed of the Clutha River, which has been worked and yielded vast quantities of gold, is still giving excellent returns by means of dredging. The attention of capitalists is being directed to the ancient river-beds now covered to a great depth by a later gravel formation, which, by the introduction of ample water-supplies, can be profitably worked by hydraulic sluicing and dredging.

Attention is also being directed to the Manuherikia district, and numbers of dredging claims are being taken up on the Manuherikia River and its tributaries. The absence of an efficient water-supply has retarded the development of the immense resources of this district.

Lake District.

This district, which was one of the earliest worked in the Otago Province, and from which the yield of gold has been very large, has also experienced the revival of the interest in mining operations so general throughout the colony.

DREDGING.

This method of dealing with the auriferous deposits in river-beds and in deep wet ground has been found to be peculiarly suitable to the requirements of the southern goldfields. On the Cardrona, Shotover, Kawarau, and Clutha Rivers, and in Tuapeka and Waipori districts, dredges are in operation, and a number of claims have been taken up with a view of dredging being commenced. As each of these dredges costs from £3,000 to £6,000, and as it is anticipated that at least seventy dredges will shortly be at work, it will be seen that a very large amount of capital is invested in this branch of the mining industry.

The returns from this source in a marked degree add to the output of gold from Otago.

In addition to the phenomenally rich returns which are stated to be obtained by the Electric Dredge near Cromwell, six dredges have averaged 219 oz. each per month for July and August, or a total return of 2,698 oz. of gold, of the value of £10,500.

COAL-MINING.

This industry continues to expand in proportion to local demands. A new feature, and one that promises to be of very great importance in increasing the demand for the bituminous coal of the Westport district, is that a quantity of 10,000 tons has been directly exported from Westport to San Francisco, Valparaiso, and other ports on the west coast of America. The further development of gold-mining will also increase the demand for the supply of coal.

The total output from the mines last year was 792,851 tons, as against 726,654 tons for the former year, showing the increased output last year to be

66,197 tons. The coal imported from other countries last year was 101,756 tons, while for the former year there were 108,198 tons, showing a decrease in the importation last year of 6,442 tons. The imports were 2,447 tons from the United Kingdom, 99,304 tons from New South Wales, and 5 tons from Victoria. The total export of coal was 86,280 tons, of which 79,524 tons was colonial produce, and 6,756 tons imported coal from other countries. Of the quantity of coal exported, 58,306 tons was for coaling direct steamers trading between the colony and the United Kingdom, and will therefore be treated, as in former Statements, as coal consumed within the colony, as these steamers are wholly employed in trade between New Zealand and Great Britain. Taking, therefore, the output from our mines and the coal imported, we have a total of 894,607 tons, of which 27,974 tons was exported, leaving the consumption within the colony last year to be 866,633 tons, as against 808,701 tons for the previous year, being an increased consumption last year of 57,932 tons. Taking the output of the different classes of coal from the mines in the colony, there was 473,637 tons of bituminous coal, 110,547 tons of pitch-coal, 179,744 tons of brown coal, and 28,923 tons of lignite; which shows an increased production last year of 43,656 tons of bituminous coal, 5,981 tons of pitch-coal, 13,047 tons of brown coal, and 3,513 tons from the lignite-pits.

The districts in which there was the largest increase last year were Kawakawa and Hikurangi, where the increase was 9,006 tons. This was due entirely to the workings of the Hikurangi Coal Company's mine being more developed, the output last year being 27,980 tons. There was also an increased production from the mines in the Waikato district of 6,341 tons. There were large increases from the mines in the Otago district of 11,483 tons, Southland district of 4,285 tons, and Westport 39,553 tons; but there was a falling-off in other districts, the largest decreased production being in the Greymouth district, which was 4,774 tons.

The mines in which there has been the largest output are the Coalbrookdale, 190,975 tons; Brunner, 92,118 tons; Kaitangata, 72,536 tons; Blackball, 45,772 tons; Westport-Cardiff, 40,431 tons; Taupiri Extended, 28,988 tons; Hikurangi, 27,980 tons; Shag Point, 21,097 tons; Granity Creek, 20,543 tons; Ngunguru, 20,233 tons; Taupiri Reserve, 18,660 tons; Nightcaps, 16,905 tons; Walton Park, 16,612 tons; Waikato, 14,233 tons; New Bay of Islands, 13,967 tons; Castle Hill, 12,825 tons; and Allandale, 11,455 tons: the output from all the other mines being under 10,000 tons.

ACCIDENTS IN COAL-MINES.

There was only one fatal accident, whereby a miner was killed at the Fernhill Mine, in South Otago, in addition to the sad disaster at the Brunner Mine on the 26th March, 1896, when, by an explosion, sixty-five men lost their lives. The departmental inquiries made show that in the first case no blame could be attached to the mine-owners or any one connected with the mine. The report of the Royal Commission appointed to inquire into the cause of the disaster at the Brunner Mine dealt with the matter in such an exhaustive manner that any further reference to it need not now be made.

EARNINGS OF COAL-MINERS.

As was observed in the Statement of last year, the earnings of the coal-miners depend greatly on the time they can work in the mines. As far as the bituminous mines on the West Coast are concerned, the men are not steadily employed, the output being controlled by the regularity with which vessels enter the ports of Westport and Greymouth to take away the coal. There is not sufficient storage, either at the mines or the ports, for large quantities of coal, and on many occasions vessels are prevented by stormy weather from entering or leaving these ports, no work being done in the mines in the meantime, unless in making repairs. If the miners could get constant employment they could earn good wages; but, as it is, they are sometimes idle for one and two days a week, and when coal is required to load vessels more men have to be employed than would be the case if sufficient storage of coal was provided at the mines.

METALLIFEROUS MINES.

The attention directed to gold-mining has to a great extent diverted attention from the search for other metals. A small parcel of 21 tons of antimony exported during the year was the product of the mine situated at Endeavour Inlet, but the owners have for some time past ceased operations on account of the low price ruling in the market. Manganese working was also suspended on account of the counter-attraction of gold-mining, the 65 tons exported being the result of operations during the preceding year. The export of 17 tons of mixed minerals is also recorded. The total value of metalliferous exports amounted to £1,955.

A small quantity of stream tin was obtained at Pegasus, in Stewart Island. A party of miners report having 5½ tons ready for shipment, but no export was made by them during the year.

No quicksilver has been yet recovered at Ohaeawai, as work has been stopped in consequence of litigation amongst the owners.

OPAL-MINING.

Opals of a valuable kind have been discovered at Tairua, in the Hauraki district, North Island. Licenses to prospect for opals have also been granted over the Mount Peel and Ackland districts, in Canterbury, where discoveries of stones were made which, in the opinion of the prospectors, warranted further development. From what can be learned the production of opals may yet become an important industry. Applications have been received for six leases, covering an area of 239 acres.

PETROLEUM.

The bore-hole at Moturoa, near New Plymouth Breakwater, was continued to a depth of 1,976 ft. before any supply of oil was reached. In consequence of the difficulty experienced in keeping the hole open and preventing the water from following the bore down outside the tubing, the oil could not be pumped out. Meanwhile the derrick by which the work was carried on was burnt down by an explosion of the gas with which the place was filled, and, after many attempts to pump out the oil, the bore was abandoned, and the machinery moved to a new site for a bore-hole about 500 yards distant. The bore at this place has reached a depth of 1,265 ft., and it is the intention of the owners to continue it to a depth of 2,000 ft.—at least, if oil in payable quantities cannot be got sooner.

The company expects to be successful so far as boring is concerned, having, as they believe, a competent and efficient staff of men, with the best description of plant, which is in excellent order. But the difficulty will be to get some strata sufficiently hard to shut off the water.

KAURI-GUM.

Notwithstanding the large quantity of kauri-gum exported every year, there was very little diminution in the amount exported last year, the quantity being 7,126 tons, as against 7,425 tons for the previous year. Although there was 299 tons less exported last year, the value exceeded that of the former year's produce by £12,557, the value of last year's produce being £431,323, which gives an average value of about £60 10s. 6d. per ton, whereas for the previous year the average value was £56 8s. per ton.

This industry affords a livelihood to a large number of both Europeans and Natives; but the average earnings of persons employed in digging gum cannot be ascertained. No doubt the time is approaching when the gum will be exhausted, but a considerable period will yet elapse before this takes place. The total quantity of kauri-gum exported since 1853 is 183,929½ tons, having a value of £8,114,852.

ROADS AND TRACKS.

The expenditure on roads and tracks has greatly increased. The activity in gold-mining demanded greater facilities to enable communication with new districts which, on account of the discovery of payable reefs, required to be made more readily accessible for prospectors and miners working their claims. I was

therefore determined to ask the House last session for an increased vote under these headings. Some of the works have been carried out on the co-operative system, but the majority have been constructed under the supervision of the County Councils and other local bodies in whose districts they are situated.

The total expenditure by the department during the last fifteen years on roads and tracks for the development of the mining industry amounts to £205,553 5s. 5d. in direct grants and £75,916 13s. 9d. in subsidies to local bodies, out of which £30,720 12s. 7d. and £1,759 6s. 5d. respectively was expended during the year.

WATER-RACES AND CONSERVATION.

The conservation of water by constructing reservoirs to provide storage for the rainfall, and water the result of melting snow, in many of the watersheds throughout the Middle Island, and construction of water-races to give an increased supply for working the alluvial drifts, are matters of great importance. In order to maintain a population on the alluvial fields water in sufficient quantities to carry on hydraulic sluicing is required, and with this in view the Government has appointed an officer to inspect the various localities and to prepare a report on the question of water-supply and conservation throughout the colony. The provision made for subsidising private water-races to the extent of one-third of the cost still exists. In connection with the scheme for the general conservation of the waters of the colony it may be noted that in order to safeguard the interests of the public generally, and to preclude the possibility of any injurious monopolies, the attention of Wardens has been directed to the inadvisability of granting extensive water rights and privileges without the imposition of such conditions as their discretion may suggest and which they have already statutory power to impose. To that end a circular has been issued suggesting such conditions as experience has shown to be necessary in respect to the granting both of reservoirs and water-races. The subsidy authorised for the Roaring Meg Creek to Healy's Gully water-race, on the north side of the Grey River, has been taken advantage of, and £478 16s. 5d. has been paid on that account.

The race from Randall Creek to Napoleon Hill, on which a subsidy was given for the cost of survey, has not yet been constructed, but it is understood the work will be carried out by an English syndicate.

The water-races constructed by the Government, and worked directly under the control of the Mines Department, are the Waimea-Kumara and Mount Ida Water-races. The gross value of the sales of water from the Waimea-Kumara Water-race last year amounted to £4,322, while the expenditure on maintenance was £2,481; leaving a net profit on the workings of £1,840. The value of the sales of water from the Mount Ida, including the Blackstone Hill Race, amounted to £1,449, while the expenditure on maintenance was £1,322. This leaves a direct profit of £127 on the working of these races during the last year.

PROSPECTING.

In the prosecution of prospecting for gold and minerals assistance was, during the year, extended to the miners, chiefly through the medium of the County Councils and of the Miners' Associations. The following amounts were paid as subsidies towards prospecting in the different counties, viz.: Manukau, £52 2s. 6d.; Bay of Islands, £103 3s.; Coromandel, £121 18s.; Tauranga, £35; Buller, £98 4s. 6d.; Grey, £47 8s.; Inangahua, £40 4s. 3d.; Westland, £683 3s. 1d.; Vincent, £107 9s. 9d.; Wallace, £24; Southland, £7; Bruce, £79 13s. 9d.; Tuapeka, £36 2s. 3d.; Selwyn, £15; Sounds, £39; Lake, £30; and Marlborough, £13 7s. 6d. A subsidy of £25,000 was granted to the Thames-Hauraki Goldfields (Limited) for testing the deep levels at the Thames, out of which £15,348 11s. 7d. has been paid. The money is being expended in sinking the Queen of Beauty shaft to a depth of 2,000 ft. and erecting adequate pumping machinery to drain the deep levels to the seaward of the Moanataiari slide.

At Coromandel the Kapanga shaft is still being continued to test the deep levels, and a payment of £259, on account of the subsidy of £400 promised towards the cost of continuing the shaft below the 800 ft. level, has been made since last statement.

The subsidy of £10,000 granted to the Ross United Gold-mining Company to aid in the further development of the Ross Flat, in the West Coast district, was withdrawn, that company having failed to satisfy the department that its proportion of the cost of the work would be available.

In the South Island several licenses for prospecting outside mining districts have been granted, and one in Stewart Island, while a considerable number of licenses have been issued in various districts in the North Island.

GEOLOGICAL EXPLORATION.

HAURAKI PENINSULA.

During the past season the systematic exploration of the Hauraki Peninsula has been commenced under the direction of Mr. McKay, Government Geologist, and this work has been so far proceeded with that it is possible to indicate the different groups of rock formations in which gold- and silver-bearing lodes have been found, and to determine approximately the areas of these, and their relation to each other. This general information, when placed in the hands of the miner and prospector, will be of great assistance in the future development of this mining district.

It now appears that the vast development of volcanic rocks on the Hauraki Peninsula is of an exceedingly complex character, and consists of four or five distinct groups of igneous rocks, in addition to the fundamental slates over which the volcanic series have been accumulated. It has been a matter of doubt whether gold-bearing lodes exist in the slates of the northern part of the district, and as respects some localities this matter has yet to be determined. At Kuao-tunu the richly auriferous character of the slates has been demonstrated. In the lower levels of the Tokatea Mine the slates have been pierced to a depth of more than 400 ft., and there is promise that the energetic prospecting works now in progress will prove successful. At the Tiki, Maniaia, and Tapu Creek gold-bearing lodes are being followed in the slate country.

The older groups of volcanic rocks have their better-known developments at the Thames and in the Success-Tokatea Range, both important centres of gold-production, from which an enhanced output of gold may be expected when the several works now in progress approach completion. The group next succeeding the Thames-Tokatea rocks has been called the Kapanga series. This contains rich mines in the vicinity of Coromandel, and is being extensively prospected over the area between Cabbage Bay and Kennedy Bay, and gives evidence of this proving a rich mining field. The Beeson's Island group is the next younger of the volcanic series. This, though often containing quartz reefs, is less productive of gold, but in this formation is found the rich silver lodes of the Great Barrier Island. Rhyolites, as the youngest group of the volcanic series, have a vast development along the east coast of the peninsula south of Mercury Bay. At a few places these are gold-bearing, and on the banks of the Tairua River, near the Upper Landing, they contain opals of fine quality. These rocks form an important study, and possibly closely related with them are the Waitekauri rocks, than which as gold-producers none on the whole peninsula are more important. The report by Mr. McKay for the present year concerns itself chiefly with the general geology of the peninsula, this being a necessary preliminary to the special examination of mines which it is intended shall commence during the coming season.

MINING MACHINERY.

As in former years, information has been obtained in regard to any new process for the treatment of auriferous and argentiferous ores, and also in regard to new machinery and appliances in connection with mining. By giving the fullest publicity to this question opportunity is afforded those persons who are engaged in mining pursuits of knowing the different patents that have been granted; and, although the machinery or appliance may not come up to the patentee's expectation, the ideas devolved may be the means of improvements being made by some one else who can detect defects in the patents. Plans and specifications of different machines and appliances in connection with mining will be found in the report of the Inspecting Engineer.

SCHOOLS OF MINES.

Amongst the schools of mines where classes are regularly carried on are those at Thames, Reefton, Otago University, and Nelson, the instructors in the first two being officers of the department. The Otago University receives substantial assistance towards the payment of the instructor, while the Nelson classes are carried on by Mr. Worley, aid being granted in the form of plant, chemicals, and apparatus. The instruction given at these schools is becoming year by year of increasing importance. Valuable technical education is afforded at the Thames School, where students have opportunities of studying the practical methods of working mines and of assisting in the treatment of ores for the recovery of gold and silver. A new quartz-crushing plant, with all the latest improvements in reducing, and suitable for employing the various scientific processes for the extraction of bullion from ores of all classes, has been erected at this school by means of a grant from the Government. In the Otago School also the use of the new plant for the testing and treatment of ores has afforded students improved opportunities for obtaining the fullest information of a practical character.

The increase in the attendance at the above schools gives tangible evidence of the interest taken in the education afforded thereat, and the number of students who, after completing their terms, have secured important positions in New Zealand and elsewhere is a convincing proof of the excellence and utility of the knowledge imparted. It is gratifying to find that the extensive training required by those intending to become mining engineers can be secured by students who will follow out the various courses of instruction given in the schools of the colony, and consequently the necessity for the importation of experts trained in Europe and America will in the near future be obviated. That the demand for technical education of this character is very strongly felt amongst the mining community throughout the colony is evidenced by the fact that the Government has, in response to applications from those interested, either promised or actually granted subsidies for the establishment of Schools of Mines at Waipori, Westport, Waihi, Waitekauri, Karangahake, Coromandel, and Kuaotunu. It is anticipated that the instruction given at these smaller schools will induce students to follow up their technical education by attending the schools at the centres above referred to, where the services of highly-qualified instructors appointed by the Government are available.

There are at present two holders of scholarships awarded by this department availing themselves of the advantages of university education—viz., Messrs. James M. McLaren and W. H. Baker, both of the Thames, who are attending the classes at the Auckland and Otago Universities respectively.

The expenditure on Schools of Mines during the year was £1,682 19s. 5d., exclusive of teachers' salaries.

The formation of a New Zealand Institute of Mining Engineers on the lines of the parent Institute in England also shows that the importance of adequately training mining engineers for the practice of their profession is fully recognised in the colony, and the operations of the Institute should prove beneficial to the interests of mining in New Zealand.

SUMMARY OF EXPENDITURE ON WORKS.

The total expenditure on works authorised by the department for the development of the mining industry for the year ending the 31st March last amounts to £44,771. These works consist of roads and tracks constructed by direct grants, £30,721; roads and tracks constructed by subsidies to local bodies, £1,759; water-races, £3,928; drainage-channels, £2,149; prospecting-works, £1,533; schools of mines, exclusive of salaries of teachers, £1,683; resumption of land for tailings-sites, £300; and prospecting deep levels, £2,698. The liabilities on the works in progress at the end of March last amounted to £69,616. A detailed statement of the expenditure on these works will be found in the tables annexed to the Inspecting Engineer's report.

KAURI COMPANY'S LANDS.

The development of the mining industry on the auriferous lands held by the Kauri Timber Company has been retarded by the somewhat prolonged

negotiations necessary to arrive at an equitable arrangement between the Government and the company; but it is pleasing to be able to state that a satisfactory settlement of the difficulty has now been arranged, and forty-three claims have been granted by the Warden. It is further expected that most of the auriferous land held under leases for timber-cutting by the company will be shortly open for mining.

MINING LEGISLATION.

While the feeling of uneasiness which prevailed up to last session as to the uncertainty of our mining laws has to some extent passed away as persons interested in mining pursuits have become better acquainted with the provisions of the Act and regulations, yet the Mining Act of 1891, to which amendments have been added for each successive year, and under which fresh regulations have from time to time been issued, has become so cumbrous that it has been decided to consolidate the whole of the Acts and regulations. In order that the Government could be aided in framing the Consolidating Bill, it was deemed advisable to convene the Wardens of the different goldfields to hold a conference with regard to introducing amendments and alterations. The totally altered conditions under which mining is at present carried on as compared with the old system, adequate for the control of the industry in former years, necessitates measures being framed to meet the changed requirements. The experience of the Wardens, who are thoroughly conversant with the legislation required for the interests of the industry in their respective districts, has proved of great service, resulting in a measure being drafted which will, it is anticipated, give more general satisfaction than has hitherto prevailed in respect to our mining laws.

The legislation of last session providing for the granting of provisional warrants authorising qualified persons who are not holders of mine-managers' certificates to manage gold-mines has been largely taken advantage of, especially in the Auckland District. The number of warrants granted is 231, and the conditions are such that all those who prove themselves capable will have an opportunity of obtaining either a first or second-class certificate according to individual merit and experience.

The legislation also for preventing the accumulation of dust in dry-crushing batteries has been the means of causing the owners to devote more attention to the improvement of ventilation and for the removal of the dust. The Inspectors of Mines held a conference with those interested, and the consensus of opinion was that if exhaust-fans were used to draw the particles from those parts of the buildings where dust is raised the whole would be kept clear. This method was afterwards adopted with such satisfactory results as show that by improved mechanical arrangement the dust evil will be remedied and the air rendered comparatively pure and innocuous to the workmen employed.

OVER-CAPITALISATION.

In the truest interests of the mining industry I deem it my duty to direct attention to the over-capitalisation which has taken place in connection with the flotation of some of the mining properties of the colony on the European market. The absolute necessity of investors ascertaining that the working capital of mining ventures bears an adequate ratio to the amount of capital actually subscribed cannot be too strongly insisted on.

DEPARTMENTAL.

The demand for reliable information concerning the industry for dissemination both in the colony and through the Agent-General in English and Continental mining circles led to the establishment of a bureau in connection with the department. The publication of a monthly journal, the *New Zealand Mines Record*, was determined on with the object of placing before the investing public and others interested in the development of our mineral resources reliable information gathered from official and trustworthy sources. Mr. P. Galvin, compiler of the "Handbook of New Zealand Mines," issued by the department in 1887, has been appointed Secretary of the bureau.

In consequence of the resignation of Mr. H. A. Gordon, Inspecting Engineer, Mr. G. Wilson, Inspector of Mines for the Auckland District, was appointed to that position, and the vacancy thus caused was filled by the transfer of Mr. J. Gow from Otago. Subsequently, that gentleman having severed his connection with the department, the two vacant positions were filled by the appointment of Mr. Coutts for the Mining District of Auckland and the temporary appointment of Mr. Hayes for the Mining District of Otago. In June last Mr. N. D. Cochrane also accepted a position with a private mining enterprise, and Mr. R. Tennent was appointed Inspector for the West Coast district. The heavy increase in the work of inspection caused by the large number of additional mines at work necessitated the appointment of Assistant Inspectors, and Messrs. Ryan and Richards were selected to assist in the Auckland and West Coast districts respectively.

CONCLUSION.

In concluding my remarks on the mining industry, I would point out that the impetus given to mining operations through the introduction of capital has been shown in the increased number of mines in which prospecting and development work is being carried on, and in pursuance of which extensive mining and milling machinery has been erected. The number of special claims now taken up for quartz and alluvial mining in both new and previously-worked ground and the attention devoted to prospecting gives hope for believing that additional exploration within auriferous areas will result in the discovery of quartz reefs and of alluvial gravel deposits containing gold in such quantities as will enable them to be profitably worked. The stream of capital for mining investment that first set in in the northern districts is being directed to the Middle Island, and, without being over-sanguine, I think it can be reasonably expected that the interest taken in mining throughout New Zealand will continue to increase, that many new mines will be discovered, and that our mineral resources will be developed in such a manner as to insure steady yields from the mines with highly profitable returns for shareholders.

The construction of roads and tracks for opening up new fields and also for improving the means of communication in the older districts is a matter of urgent necessity, and ample provision must again be made for the vigorous continuance of necessary works. In order to aid in the further development of the industry substantial grants will also be required for prospecting, water-conservation, and deep-level mining.

The continuance of mining prosperity will result in employment being found for miners, and the country further opened up for the prospector, thus adding in a substantial manner to the advancement of other industries conducive in a marked degree to the progress and prosperity of the colony generally.

No. 1.

TABLE showing the COMPARISON in QUANTITY and VALUE of GOLD ENTERED FOR EXPORTATION, and also the QUANTITY and VALUE of other MINERALS produced, for the Years ending the 31st December, 1895 and 1896, as well as the TOTAL VALUE since JANUARY, 1853.

Name of Metal or Mineral.	For Year ending the 31st December, 1895.		For Year ending the 31st December, 1896.		Total from the 1st January, 1853, to the 31st December, 1896.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Precious metals—	Oz.	£	Oz.	£	Oz.	£
Gold	293,491	1,162,164	263,694	1,041,428	13,313,907	52,392,430
Silver	85,024	10,679	94,307	10,589	901,270	181,852
Total gold and silver	378,515	1,172,843	358,001	1,052,017	14,215,177	52,574,282
Mineral produce, including kauri-gum—	Tons.	£	Tons.	£	Tons.	£
Copper-ore .. .. .	..	..	..	..	1,394½	17,866
Chrome-ore .. .. .	..	..	..	..	5,666	37,367
Antimony-ore	54	1,486	21	450	3,600	52,204
Manganese-ore	210	525	65	205	18,105½	57,993
Hæmatite-ore .. .. .	..	..	..	..	52½	226
Mixed minerals	62	880	37	1,335	14,313	72,890
Coal exported	85,987	83,342	79,524	71,984	898,926	888,646
Coke exported	288	715	105	263	16,343	24,781
Coal, output of mines in colony	640,667*	320,334	713,327	356,664	9,836,974†	4,918,487
Kauri-gum	7,425	418,766	7,126	431,323	183,929½	8,114,842
Total quantity and value of minerals	734,693	826,048	800,205	862,224	10,979,303½	14,185,302
Value of gold and silver, as above .. .. .	..	1,172,843	..	1,052,017	..	52,574,282
Total value of minerals produced, including gold and silver .. .. .	..	1,998,891	..	1,914,241	..	66,759,584

* 14,173 tons deducted, error 1895.

† 153,442 tons, output previous to 1878, added.

No. 2.

TABLE showing the QUANTITY and VALUE of GOLD ENTERED for EXPORTATION from NEW ZEALAND for the Years ending the 31st March, 1896 and 1897, and the TOTAL QUANTITY and VALUE from 1857 to the 31st March, 1897.

District and County or Borough.	Year ending 31st March, 1896.		Year ending 31st March, 1897.		Increase or Decrease for Year ending 31st March, 1897.		Total Quantity and Value from January, 1857, to 31st March, 1897.	
	Quantity.	Value.	Quantity.	Value.	Increase.	Decrease.		
AUCKLAND—	Oz.	£	Oz.	£	Oz.	Oz.	Oz.	£
County of Coromandel ..	40,253	164,289	27,404	113,116	..	12,849	..	..
County of Thames ..	9,054	37,375	3,941	16,572	..	5,113	..	..
County of Ohinemuri ..	60,287	218,401	57,115	205,981	..	3,172	..	..
County of Piako ..	144	606	125	521	..	19	..	..
County of Manukau ..	..	..	..	..	..	..	..	..
County of Marsden ..	1	4	..	..	..	1	..	..
County of Whangarei ..	1	4	..	..	..	1	..	..
Borough of Thames ..	7,289	30,150	5,291	22,041	..	1,998	..	..
Te Aroha Town District ..	..	..	..	..	..	..	..	..
	117,029	450,829	93,876	358,231	..	23,153	2,058,885	7,768,664
WELLINGTON ..	..	..	..	..	..	..	188	706
MARLBOROUGH—								
County of Marlborough ..	3,173	12,681	789	3,070	..	2,384	..	..
Blenheim Borough ..	..	..	..	..	..	..	..	..
Picton Borough ..	..	..	..	..	..	..	..	..
	3,173	12,681	789	3,070	..	2,384	85,145	331,609
NELSON—								
County of Waimea ..	402	1,488	498	1,815	96	..	..	..
County of Collingwood ..	3,411	12,519	2,036	7,729	..	1,347	..	..
	3,813	14,007	2,534	9,544	..	1,279	1,672,381	6,630,310
WEST COAST—								
County of Buller ..	12,911	51,634	10,899	43,518	..	2,012	..	..
County of Inangahua ..	26,927	107,710	12,615	50,459	..	14,312	..	..
County of Grey ..	22,030	88,118	20,772	83,170	..	1,258	..	..
County of Westland ..	23,557	94,227	23,709	94,907	152	..	..	..
Brunnerton Borough ..	..	..	..	..	..	..	..	..
Kumara Borough ..	246	986	311	1,244	65	..	..	..
Hokitika Borough ..	889	3,550	384	1,532	..	505	..	..
Ross Borough ..	3,161	12,645	2,858	11,431	..	303	..	..
Reefton Borough ..	..	..	..	..	..	..	..	..
	89,721	358,870	71,548	286,261	..	18,173	4,258,776	16,934,953
CANTERBURY ..	..	..	..	..	..	..	24	96
OTAGO—								
County of Taieri ..	734	3,006	1,708	6,904	974	..	..	..
County of Tuapeka ..	26,207	106,081	25,011	101,834	..	1,196	..	..
County of Vincent ..	22,958	92,980	23,430	95,507	..	472	..	..
County of Maniototo ..	10,765	43,607	10,040	40,929	..	725	..	..
County of Waihemo ..	1,874	7,384	687	2,802	..	1,187	..	..
County of Waikouaiti ..	518	2,119	602	2,464	84	..	..	..
County of Waitaki ..	1,836	7,522	1,814	7,436	..	22	..	..
County of Bruce ..	1,161	4,680	1,042	4,180	..	119	..	..
County of Lake ..	10,801	43,463	11,315	46,349	514	..	..	..
County of Wallace ..	7,052	28,441	5,823	23,451	..	1,229	..	..
County of Fiord ..	630	2,534	3,333	13,191	2,703	..	..	..
County of Southland ..	4,325	17,508	3,282	13,273	1,043	..	..	..
County of Stewart Island ..	68	271	50	200	18	..	..	..
County of Clutha ..	25	98	29	116	..	4	..	..
Borough of Alexandra ..	..	..	..	..	..	..	..	..
Dunedin ..	..	..	..	..	..	..	..	..
	88,954	359,694	88,166	358,636	..	788	5,308,007	21,001,424
Unknown ..	..	..	..	..	..	..	122	484
Totals ..	302,690	1,196,081	256,913	1,015,742	..	45,777	13,383,528	52,668,246

No. 3.

TABLE showing the TOTAL QUANTITY and VALUE OF GOLD ENTERED FOR DUTY BY EXPORTATION from the 1st January, 1857, to the 31st December, 1896. (This return shows the produce of the various goldfields. Gold entered at Nelson from Hokitika, Greymouth, and Westport is put under the head of "West Coast," and gold from Invercargill and Riverton under the head of "Otago.")

Year.	Auckland.		Nelson.		Marlborough.		West Coast.		Otago.		Wellington.		Canterbury.		Total.	
	Oz.	Value. £	Oz.	Value. £	Oz.	Value. £	Oz.	Value. £	Oz.	Value. £	Oz.	Value. £	Oz.	Value. £	Oz.	Value. £
1857	10,437	40,422	..	..	..	..	..	..	..	..	..	..	10,437	40,422
1858	..	1,192	13,226	51,272	..	..	..	..	..	..	..	..	..	..	13,534	52,464
1859	7,336	28,427	..	..	..	..	..	..	..	..	..	..	7,336	28,427
1860	4,538	17,585	..	..	..	..	..	..	..	..	..	..	4,538	17,585
1861	6,335	24,552	..	..	..	..	..	..	..	..	..	..	194,031	751,873
1862	10,422	40,386	..	..	..	..	..	..	..	..	..	..	410,862	1,591,389
1863	..	4,098	9,580	37,120	..	..	..	..	..	..	..	..	..	..	628,450	2,431,723
1864	..	13,833	14,410	55,841	24,838	95,331	..	..	..	..	..	..	..	..	480,171	1,856,837
1865	..	3,448	12,137	47,030	7,952	30,814	1,463	5,560	..	..	..	..	..	..	735,376	2,844,517
1866	..	5,449	17,096	29,643	469	1,818	552,572	2,140,946	..	..	..	..	..	..	686,905	2,698,862
1867	..	17,463	7,650	29,643	501	1,978	511,974	2,018,874	..	..	..	..	..	..	614,281	2,504,326
1868	..	6,637	18,377	9,123	35,918	404	1,616	1,608,844	..	..	..	..	..	..	544,880	2,157,385
1869	..	53,660	168,874	5,939	38,396	666	2,664	1,269,664	..	..	..	..	..	..	730,029	2,787,520
1870	..	132,451	484,687	10,631	42,524	404	317,169	171,649	..	..	..	..	..	..	445,377	1,987,425
1871	..	82,534	319,146	12,244	48,692	1,852	7,408	280,068	..	..	..	..	..	..	371,685	1,496,080
1872	..	330,336	1,188,708	10,014	40,056	2,867	931,528	154,940	..	..	..	..	..	..	310,486	1,240,079
1873	..	104,890	369,341	8,175	32,700	2,057	690,296	619,760	..	..	..	..	..	..	287,464	1,148,108
1874	..	119,449	437,123	13,697	54,786	1,274	5,050	756,442	..	..	..	..	..	..	305,248	1,227,252
1875	..	76,910	305,068	5,642	22,158	1,198	4,748	631,203	..	..	..	..	..	..	371,685	1,496,080
1876	..	69,485	262,156	4,577	17,866	1,159	4,686	585,480	..	..	..	..	..	..	322,016	1,284,328
1877	..	56,037	221,905	14,018	55,862	450	1,796	531,274	..	..	..	..	..	..	310,486	1,240,079
1878	..	99,081	408,627	5,367	21,092	870	3,197	612,823	..	..	..	..	..	..	270,561	1,080,790
1879	..	55,932	220,454	4,463	17,223	404	1,617	578,508	..	..	..	..	..	..	305,248	1,227,252
1880	..	37,901	154,205	2,993	11,424	879	3,460	571,061	..	..	..	..	..	..	251,204	1,002,730
1881	..	42,720	176,416	3,232	12,223	1,550	5,650	509,971	..	..	..	..	..	..	248,374	993,352
1882	..	35,516	141,326	3,453	13,039	1,578	4,531	519,978	..	..	..	..	..	..	229,946	921,797
1883	..	33,059	131,007	3,289	12,494	1,352	4,400	467,152	..	..	..	..	..	..	237,371	948,615
1884	..	41,291	163,618	2,064	7,724	636	2,524	406,451	..	..	..	..	..	..	227,079	903,569
1885	..	36,087	143,564	2,159	8,002	1,079	4,306	446,517	..	..	..	..	..	..	208,869	811,100
1886	..	42,939	170,416	2,798	10,337	540	2,160	471,825	..	..	..	..	..	..	201,219	801,066
1887	..	32,271	128,140	2,532	9,979	404	1,451	446,287	..	..	..	..	..	..	193,193	773,438
1888	..	30,697	121,564	2,914	10,829	1,041	3,759	395,430	..	..	..	..	..	..	251,996	1,007,488
1889	..	35,233	139,556	3,027	11,320	699	2,547	400,405	..	..	..	..	..	..	198,932	773,438
1890	..	28,655	118,191	3,252	12,310	5,189	20,167	406,451	..	..	..	..	..	..	203,211	808,549
1891	..	31,745	126,760	2,856	11,049	6,073	24,285	356,368	..	..	..	..	..	..	193,193	773,438
1892	..	45,555	181,185	4,445	16,896	5,649	22,576	437,126	..	..	..	..	..	..	238,079	954,744
1893	..	45,555	183,655	2,535	9,604	3,898	15,429	412,383	..	..	..	..	..	..	238,079	954,744
1894	..	45,714	186,553	2,145	8,187	2,165	8,644	396,516	..	..	..	..	..	..	226,811	913,136
1895	..	52,916	211,974	2,860	10,634	2,536	9,477	347,464	..	..	..	..	..	..	221,615	887,839
1896	..	111,213	430,862	2,460	9,016	2,695	10,771	357,719	..	..	..	..	..	..	293,491	1,162,164
1896	..	92,346	350,355	2,753	10,333	916	3,588	317,161	..	..	..	..	..	..	263,694	1,041,428
Totals	..	2,032,493	7,667,057	251,838	994,951	84,640	329,640	22,494,909	5,284,179	20,904,637	1,044	48	192	48	13,313,907	52,392,430

No. 4.
TABLE showing the TOTAL QUANTITY and VALUE of MINERAL ORES other than Gold (the Product of New Zealand Mines), COAL, COKE, and KAURI-GUM, EXPORTED from the Colony up to the 31st December, 1896.

Year.	Silver.		Copper-ore.		Chrome-ore.		Antimony-ore.		Manganese-ore.		Haematite-ore.		Mixed Mineral Ore.		Coal.		Coke.		Kauri-gum.		Total				
	Oz.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Oz.	Tons.	Value.	Tons.	Value.		
1853	..	£	..	£	..	£	..	£	..	£	..	£	..	£	..	£	..	£	880	15,972	880	15,972	880	15,972	
1854	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,661	28,864	1,661	28,864	1,661	28,864
1855	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	355	4,514	355	4,514	355	4,514
1856	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,440	18,391	1,440	18,391	1,440	18,391
1857	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,522	35,251	2,522	35,251	2,522	35,251
1858	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,811	20,037	1,811	20,037	1,811	20,037
1859	351	5,000	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,010	20,776	2,010	20,776	2,010	20,776
1860	245	2,605	8	120	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,046	9,851	1,046	9,851	1,046	9,851
1861	137	1,590	116	1,440	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,103	11,107	1,103	11,107	1,103	11,107
1862	110	1,300	52	520	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,400	27,026	1,400	27,026	1,400	27,026
1863	51	1,024	3,843	24,719	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,228	60,590	2,228	60,590	2,228	60,590
1864	..	..	768	4,910	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,867	46,060	1,867	46,060	1,867	46,060
1865	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,535	70,572	2,535	70,572	2,535	70,572
1866	..	..	281	1,315	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,685	77,491	2,685	77,491	2,685	77,491
1867	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,690	72,493	2,690	72,493	2,690	72,493
1868	11,063	2,993	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,850	111,307	2,850	111,307	2,850	111,307
1870	37,122	11,380	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,600	115,100	3,600	115,100	3,600	115,100
1871	80,272	23,145	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,070	188,082	6,070	188,082	6,070	188,082
1872	37,064	9,910	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,054	175,074	5,054	175,074	5,054	175,074
1873	36,187	9,850	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,811	154,167	4,811	154,167	4,811	154,167
1874	40,566	10,380	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,834	85,816	2,834	85,816	2,834	85,816
1875	29,085	7,569	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,569	79,986	2,569	79,986	2,569	79,986
1876	12,633	3,171	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,231	138,523	3,231	138,523	3,231	138,523
1877	33,893	7,556	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,868	109,234	2,868	109,234	2,868	109,234
1878	23,019	5,755	6	102	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,445	132,975	3,445	132,975	3,445	132,975
1879	20,045	4,512	55	612	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,229	147,535	3,229	147,535	3,229	147,535
1880	20,005	4,500	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,425	242,817	3,425	242,817	3,425	242,817
1881	18,885	4,236	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,461	253,778	5,461	253,778	5,461	253,778
1882	16,826	3,785	9	900	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,538	260,369	5,538	260,369	5,538	260,369
1883	5,694	1,286	41	804	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,393	342,914	6,393	342,914	6,393	342,914
1884	24,914	5,125	40	804	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,518	336,606	5,518	336,606	5,518	336,606
1885	16,624	3,169	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,225	142,151	3,225	142,151	3,225	142,151
1886	12,108	2,946	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,393	257,653	6,393	257,653	6,393	257,653
1887	20,809	3,458	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,519	329,590	7,519	329,590	7,519	329,590
1888	403	71	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,482	362,449	8,482	362,449	8,482	362,449
1889	24,105	4,043	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,438	378,563	7,438	378,563	7,438	378,563
1890	32,637	6,162	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,388	437,056	8,388	437,056	8,388	437,056
1891	28,023	5,151	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,334	362,779	8,334	362,779	8,334	362,779
1892	22,053	3,996	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,115	257,653	7,115	257,653	7,115	257,653
1893	63,076	9,743	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,705	517,678	8,705	517,678	8,705	517,678
1894	54,177	6,697	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,317	510,775	8,317	510,775	8,317	510,775
1895	85,024	10,679	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,425	418,766	7,425	418,766	7,425	418,766
1896	94,307	10,589	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,126	431,323	7,126	431,323	7,126	431,323
Totals	901,270	181,852	1,394	17,866	5,666	37,967	3,600	52,204	18,105	57,993	52	226	14,313	72,890	808,926	888,646	16,343	24,781	183,920	8,114	842,901	270	1,142,329	9,448	667

NOTE.—Silver-ore, 37 tons, £1,225.

No. 5.

RETURN showing the QUANTITY and VALUE of COALS IMPORTED into NEW ZEALAND during the Quarter ended the 31st March, 1897.

Country whence imported.	Quantity.	Value.
	Tons.	£
Victoria .. .. .	.. .. .	.. .. .
New South Wales	35,104	30,450
Totals	35,104	30,450

No. 6.

TABLE showing the INCREASE or DECREASE in the PRODUCTION of COAL in the Colony, and Imported, Year by Year, during the last Nineteen Years.

Year.	Coal raised in the Colony.		Coal imported.		
	Tons.	Yearly Increase.	Tons.	Plus or Minus.	Increase and Decrease.
1878	162,218	..	174,148	..	..
1879	231,218	69,000	158,076	-	16,072
1880	299,923	68,705	123,298	-	33,778
1881	337,262	37,339	129,962	+	6,664
1882	378,272	41,010	129,582	-	380
1883	421,764	43,492	123,540	-	6,042
1884	480,831	59,069	148,444	+	24,904
1885	511,063	30,232	130,202	-	18,242
1886	534,353	23,290	119,873	-	10,329
1887	558,620	24,267	107,230	-	12,643
1888	613,895	55,275	101,341	-	5,889
1889	586,445	27,450	128,063	+	26,722
1890	637,397	50,952	110,939	-	17,124
1891	668,794	31,397	125,318	+	14,379
1892	673,315	4,521	125,453	+	135
1893	691,548	18,233	117,444	-	8,009
1894	719,546	27,998	112,961	-	4,483
1895	726,654*	7,108	108,198	-	4,763
1896	792,851	66,197	101,756	-	6,442

* 14,173 tons, error 1895, deducted.

No. 7.

TABLE showing the OUTPUT of COAL from the various Mining Districts, and the Comparative INCREASE and DECREASE, for the Years 1895 and 1896, together with the TOTAL APPROXIMATE QUANTITY of COAL produced since the Mines were opened.

Name of District.	Output of Coal.		Plus or Minus.	Increase or Decrease.	Approximate Total Output of Coal up to 31st December, 1896.
	1895.	1896.			
	Tons.	Tons.		Tons.	Tons.
Kawakawa and Hikurangi	44,580	53,586	+	9,006	920,738
Whangarei, Kamo, Ngunguru, and Whau-whau	20,872	21,106	+	234	357,768
Waikato	55,558*	61,899	+	6,341	884,732
Mokau	535	1,943	+	1,408	10,505
Pelorus .. .. .	..	..	..	..	711
West Wanganui	1,615	504	-	1,111	48,858
Westport	223,143†	262,696	+	39,553	2,344,432
Reefton	4,018	3,795	-	223	67,807
Greymouth	142,664	137,890	-	4,774	2,267,252
Malvern	11,481	11,714	+	233	327,975
Timaru	341	103	-	238	10,657
Otago	182,331	193,814	+	11,483	3,112,005
Southland	39,516	43,801	+	4,285	382,460
Totals	726,654	792,851	+	66,197	10,735,900

* 14,193 tons, error 1895, deducted.

† 20 tons, omitted from 1895, added.

No. 8.

TABLE showing the DIFFERENT CLASSES of COAL from the MINES in the COLONY.

Name of Coal.	Output of Coal.		Increase or Decrease.	Approximate Total Output of Coal up to the 31st December, 1896.
	1895.	1896.		
	Tons.	Tons.	Tons.	Tons.
Bituminous	429,981	473,637	+ 43,656	5,641,685
Pitch	104,566	110,547	+ 5,981	1,651,087
Brown	166,697*†	179,744	+ 13,047	3,098,234
Lignite	25,410	28,923	+ 3,513	344,894
Totals	726,654	792,851	+ 66,197	10,735,900

* 14,193 tons, error 1895, deducted.

† 20 tons, omitted 1895, added.

No. 9.

TABLE showing the NUMBER of COAL-MINES in OPERATION, the NUMBER of MEN EMPLOYED, and the OUTPUT of COAL per MAN.

Number of Mines working.	Number of Miners employed in each Mine.	Total Number of Men employed.	Output of Coal during 1896.	Average Output per Man.
122	1 to 4 men in each	239	Tons. 53,054	Tons. 222
19	5 to 10 "	130	45,340	349
2	11 to 20 "	39	13,967	358
20	21 men and upwards	1,529	680,490	445
163		1,937	792,851	409

No. 10.

RETURN showing the QUANTITY and VALUE of COAL IMPORTED INTO and EXPORTED FROM NEW ZEALAND during the Year ended the 31st December, 1896.

Imported.			Exported.		
Countries whence imported.	Quantity.	Value.	Countries to which exported.	Quantity.	Value.
	Tons.	£		Tons.	£
United Kingdom	2,447	2,410	United Kingdom	58,306	59,379
New South Wales	99,304	91,719	Chili	4,763	3,962
Victoria	5	9	New South Wales	593	459
			Tasmania	7,871	5,346
			United States of America— On the West Coast	4,383	3,212
			Fiji Islands	1,173	704
			South Sea Islands	9,191	5,398
Totals	101,756	94,138	Totals	86,280	78,460

NOTE.—Foreign coal included in exportation to—United Kingdom, 4,388 tons, value £4,388; New South Wales, 1,224 tons, value £1,120; United States of America—On the West Coast, 796 tons, value £741; South Sea Islands, 348 tons, value £227. The remainder is New Zealand produce.

No. 11.

NUMBER of MINERS EMPLOYED during the Years ending 31st March, 1897 and 1896.

Mining District.	Alluvial Miners.		Quartz-miners.		Totals.		Grand Total.	
	European.	Chinese.	European.	Chinese.	European.	Chinese.	1897.	1896.
AUCKLAND—								
North Hauraki and Coromandel ..	..	..	1,329	..	1,329	..	1,329	1,045
Thames .. .. .	..	..	1,527	..	1,527	..	1,527	677
Ohinemuri .. .. .	..	..	1,820	..	1,820	..	1,820	1,726
Piako .. .. .	..	..	100	..	100	..	100	36
Puhipuhi .. .. .	..	..	25	..	25	..	25	25
Tauranga .. .. .	..	..	35	..	35	..	35	..
Great Barrier .. .. .	..	..	36	..	36	..	36	..
	..	..	487,2	..	4,872	..	4,872	3,509
MARLBOROUGH—								
Pelorus	6	..	..	..	6	..	6	6
Wairau	30	..	..	..	30	..	30	20
Cullen's Creek	50	..	..	..	50	..	50	100
Waikakaho	10	..	..	..	10	..	10	10
Wakamarina	60	..	20	..	80	..	80	64
Kaituna and Duncan's Valley ..	6	..	..	..	6	..	6	6
	162	..	20	..	182	..	182	206
NELSON—								
Wangapeka, Baton, and Sherry ..	42	..	..	..	42	..	42	36
Collingwood and Takaka	207	6	3	..	210	6	216	275
Motueka	14	..	..	..	14	..	14	6
Inangahua	161	148	368	..	529	148	677	666
Ahaura	425	295	63	..	488	295	783	787
Charleston	230	..	..	..	230	..	230	230
Westport, including Addison's, Northern Terraces, Waimanga- roa, North Beach, Mokihinui, Karamea, and Lower Buller Valley	330	..	20	..	350	..	350	330
Lyell	20	13	43	..	63	13	76	84
Murchison	118	48	6	..	124	48	172	169
Owen .. .. .	..	..	..	..	..	..	..	..
	1,547	510	503	..	2,050	510	2,560	2,583
WESTLAND—								
Ross	110	4	16	..	126	4	130	156
Stafford and Goldsborough	400	150	..	..	400	150	550	570
Hokitika and Kanieri	450	40	..	..	450	40	490	395
Kumara	350	100	..	..	350	100	450	440
Greymouth	500	220	15	..	515	220	735	711
Arnold .. .. .	..	..	..	..	..	..	..	..
Okarito	70	1	..	..	70	1	71	93
	1,880	515	31	..	1,911	515	2,426	2,365
OTAGO—								
Hindon	37	..	13	..	50	..	50	54
Tuapeka	400	220	10	..	410	220	630	622
Clyde and Alexandra	400	130	30	..	430	130	560	490
Cromwell	315	154	29	..	344	154	498	498
Roxburgh	370	65	25	..	395	65	460	437
Black's	127	45	6	..	133	45	178	185
Tapanui	40	..	..	..	40	..	40	21
Waikaka	120	50	20	..	140	50	190	200
Wyndham	12	..	..	..	12	..	12	42
Longwood .. .. .	..	..	..	..	..	..	..	..
Orepuki	310	68	50	..	360	68	428	430
Roundhill and Wilson's River	..	..	..	..	..	..	..	..
Wakatipu Goldfields—Arrow, Macetown, Cardrona, Kawarau, Bracken's, and Motatapu	250	25	100	..	350	25	375	375
Queenstown	325	25	250	..	575	25	600	475
Naseby, Kyeburn, Clarke's, and Mount Burster	..	..	..	..	..	..	..	..
Hamilton, Sowburn, &c.	..	..	..	..	..	..	..	..
Hyde and Fullerton's	466	130	35	..	501	130	631	589
Serpentine .. .. .	..	..	..	..	..	..	..	..
Macrae's, Strath-Taieri, Shag Valley, Nenthorn, St. Bathans, and Ida Valley	..	..	..	..	..	..	..	..
Maerewhenua and Kurow	105	..	..	..	105	..	105	93
Pembroke	40	12	..	..	40	12	52	52
	3,317	964	568	..	3,885	964	4,849	4,563
SUMMARY.								
AUCKLAND .. .. .	..	..	4,872	..	4,872	..	4,872	3,509
MARLBOROUGH	162	..	20	..	182	..	182	206
NELSON	1,547	510	503	..	2,050	510	2,560	2,583
WESTLAND	1,880	515	31	..	1,911	515	2,426	2,365
OTAGO	3,317	964	568	..	3,885	964	4,849	4,563
Totals	6,906	1,989	5,994	..	12,900	1,989	14,889	13,226

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