

1893.
NEW ZEALAND.

MINES STATEMENT.

BY THE HON. R. J. SEDDON, MINISTER OF MINES.

MR. SPEAKER,—

In making this my third Statement, it gives me great pleasure to state that the mining industry is steadily progressing. The productions from our mines have hitherto consisted principally of gold and coal, which are not affected to any extent by fluctuations in price, as are most other articles of colonial produce. In every country there are periods of prosperity and depression, enterprise and stagnation, which cannot always be foreseen; but the principal element that affects the produce of gold is an inadequate supply of water in dry seasons. This could be provided against to a great extent if the water was more carefully conserved. There is no country in the world better watered than this colony, and in some seasons there is plenty and to spare; but if a system of conservation was effected, and all available sites used for dams and reservoirs, there would always be plenty of water to carry on mining operations. At the present time the water from every stream in the vicinity where mining is carried on is utilised to a certain extent by the miners, and where the water can be brought to command ground at a moderate cost it has been done; but there are many instances in which water is allowed to run to waste without being utilised, the whole of which should be conserved as far as practicable. It is true there is a difficulty in the way of persons holding inferior water-rights constructing dams or reservoirs in the bed of streams, notwithstanding there may be a splendid site where a large body of water could be stored at a small outlay. Those holding superior rights would not contribute to the cost; and those holding inferior rights would in dry seasons be compelled to allow a sufficient quantity of water to flow out of their reservoir to supply those holding prior rights, even were that quantity not coming into the reservoir from the stream from which these rights were granted. It is, however, possible to regulate this difficulty, so that a person holding the first rights from any stream could only claim his quantity if it was flowing into any dam or reservoir, and accordingly give more encouragement to parties to conserve the water.

There are numerous rivers and streams flowing at high velocities which, if properly utilised, are capable of giving a cheap motive-power to work the whole of the mining and other machinery in the colony, and, as there are generally only short distances between those rivers and streams, they can easily be used as a motive force to generate electricity as a motive-power for transmission to the different places where machinery requires to be erected, where direct water-power is not available, and thereby save the cost of fuel where steam machinery has to be employed. By this means, a lower grade of ore could be reduced and treated at a profit than at present.

It is gratifying to find that, by improvements in gold-saving appliances, both auriferous drifts and lodes can now be worked at a profit which a few years ago were considered almost valueless, and that the spirit of enterprise which has always characterized those interested in mining from the early days of the goldfields still continues to be of a progressive character. Mining has in the past been a great source of revenue to the colony, and will be so in the future. Were it not from the revenue derived from mining, a number of County Councils could not possibly maintain their roads and construct necessary works in their districts. Were it advisable, it would be impossible to induce those who have been mining for years to leave off that occupation and follow another calling. They are content to work for

long periods for a bare subsistence, undergoing hardships and privations with the hope, which leads many on the road to success in life, that they will come on ground which will return them sufficient wealth for all their labours. The genuine miners are a hardy, honest, and independent class of men. They are too proud to appeal for aid, and prefer to endure the greatest hardships rather than surrender their self-reliance. Aged as many are, the most of the prospecting is done by them. The young men do not take kindly to the bush, and prefer other occupations where there is less hardship and privation. The diggers of to-day are not of the same migratory character which distinguished them in the early days of the goldfields. They are now taking up plots of land on occupation-license tenure, and making for themselves comfortable homes. When they cannot work their gold-mining claims, for want of water or other reasons, they find employment in cultivating the land. The number of holdings under this tenure at the present time is 593, comprising an aggregate area of 16,934 acres. The genuine gold-digger has done much in promoting settlement and developing the colony's vast resources, and he has strong claims for our best consideration and encouragement.

MINERAL PRODUCTION.

The mineral production for the year ending 31st December, 1892, including kauri-gum, shows an increase in value of £25,620 over that of 1891. Very little has been done in opening up the metalliferous mines, but more attention is now being given to ores containing minerals other than gold and silver. It is a difficult matter to establish any new industry on a firm footing, and its development for some time is necessarily slow. In some instances, where capital has been expended in starting a new branch of mining, expectation has been nipped in the bud by buyers in foreign markets offering a high price for the mineral, and, when the industry was commenced, reducing the price to such an extent that it would not pay. Such was the case with scheelite. A company which erected a plant at the head of Lake Wakatipu for the production of this mineral, found, after their plant had been erected, that they could not get more than about one-third of the price paid for the mineral when the mine was first opened up. At the present time there are inquiries from large firms in London and Liverpool for this mineral, a good price being offered for it. There are large quantities of scheelite in Otago, and it is probable that the day is not far distant when fresh mines will be opened to supply the demand. There are difficulties in opening up new mines of all descriptions, which are generally situated in rough, broken country, sometimes very mountainous and difficult of access, requiring roads to be constructed before either machinery can be brought on to the ground or the ore taken to a place where it can be forwarded cheaply to a port of shipment. With all these drawbacks, it requires considerable capital to commence with. The depression existing during the past year in the Australian Colonies has to some extent detrimentally affected the mining industry in New Zealand, for it has in some cases prevented money being expended in its development. Some persons connected with the Mercantile Bank in Victoria have, it is said, been compelled to withdraw their capital from some mining ventures they had in this colony, and, just when they were on the eve of getting returns, to sacrifice a property which cost them over £16,000 for less than one-fifth of that amount.

The value of the mineral productions, including kauri-gum, for the year ending the 31st December last, was : Gold, £954,744 ; silver, £3,996 ; antimony-ore, £4,900 ; manganese, £1,239 ; other minerals, £631 ; coal exported, £80,225 ; coke exported, £5,691 ; coal consumed in the colony, £297,202 ; and kauri-gum, £517,678 ; making a total of £1,866,306 : while the value for the previous year was £1,840,686 ; thus showing an increase in the value of mineral products last year of £25,620. Taking the value of the whole of the gold and minerals obtained in the colony since the 1st January, 1853, up to the end of 1892, it is as follows : Gold, £48,387,861 ; silver, £144,144 ; copper-ore, £17,866 ; chrome-ore, £37,367 ; antimony-ore, £46,040 ; manganese-ore, £55,164 ; hæmatite-ore, £226 ; other minerals, £69,672 ; coal exported, £587,183 ; coke exported, £23,590 ; coal consumed in the colony (value at the mines), £3,531,202 ; and kauri-gum, £6,349,421 : making a total of £59,249,736, the details of which will be seen in Tables Nos. 1, 3, and 4, annexed.

GOLD-MINING.

In referring to this branch of the mining industry, I would call the attention of honourable members to its importance, and the advantages the colony has derived from the discovery of gold. This has been the means of bringing many thousands—I may, in fact, say hundreds

of thousands—of persons to our shores who never would otherwise have come. There is a charm about gold-mining that no other class of mining possesses: the reason being that in the early days of the goldfields, both in this and other countries where gold has been discovered, it was usually easily got; the ground in general was of a shallow depth, and in many instances rich patches were found requiring but little labour to get it. Gold, also, being in a metallic state, is always a marketable commodity, with no variation in its value when its assay is known. It is a class of mining that has enriched many of our colonists; and probably some of those who are indebted to this branch of industry for all the wealth they possess fail to recognise its importance, and even set it down as a gambling transaction. The shallow placer-workings where the gold was easily obtained are now getting worked out, and more capital is required to carry on operations than in the earlier days: large areas of superincumbent drift have to be removed before the auriferous layers can be reached. A pick, shovel, tub, cradle, and tin-dish were at one time all the implements a digger required to enable him to earn his livelihood and make good wages; but those days are past. Every claim that is now taken up requires capital to open it up; some claims requiring thousands of pounds to be expended in placing a proper plant on the ground before any gold is ever obtained. The expenditure in testing and developing the gold-mines in the colony is becoming greater year after year, as the lode-workings on the upper levels on old-established reefs are getting taken out; and the time is not far distant when lower levels on some of those lodes will have to be opened up, and assistance given in some instances to prove the value of the deep ground in large gold-mining centres. The population is now in these centres; the colony has expended large sums of money in erecting schools, public buildings, and the conveniences necessary for permanent settlement; and every effort should be made to get the value of the mineral lands tested before the miners leave for other fields. The advantages the colony has already obtained through the influx of a large mining population, and the prospect of further valuable discoveries being made in lands still belonging to the Crown, or which might possibly be acquired from the Native owners—lands which in most instances are valuable neither for agricultural nor pastoral purposes, but which would nevertheless prove of far greater value if gold were discovered—are well known; and efforts to extend the present workings to a greater depth deserve encouragement, as by such extensions the goldfields are made capable of supporting a larger population, and of giving profitable employment to the labouring classes. A good goldfield rush would do more than anything else to satisfactorily solve the unemployed question.

The yield of gold last year, though not so much as for the former one, shows, as a matter of fact, that there has been a definite increase, for a portion of the gold in the former year should have been credited for the year 1890–91. The quantity obtained during the financial 1892–93, as taken from the returns of gold entered for exportation, was 228,659oz., representing a value of £917,467; while the return for the former year was 276,535oz., representing a value of £1,107,177; but of this gold a large quantity was held by the banks in the Middle Island pending the abolition of the gold duty, which took effect from the 1st April, 1891. As compared with year 1889–90, which was 201,760oz., valued at £803,174, last year's return shows an increase of 26,899oz., valued at £114,293. Of the gold produced last year, the Auckland District contributed about 17·95 per cent.; West Coast, 44·45 per cent.; Otago, 35·04 per cent.; and Nelson and Marlborough, 2·56 per cent. It will be seen, therefore, that nearly one-half of the gold is obtained on the west coast of the Middle Island. The total yield of gold from each of these districts last year being: Auckland, 41,052oz.; Marlborough, 3,055oz.; Nelson, 2,792oz.; West Coast, 101,636oz.; and Otago, 80,124oz.

EARNINGS OF THE GOLD-MINERS.

According to the returns furnished to the department, the number of miners employed in gold-mining in the different districts last year was 12,197, details of which will be found in Table No. 11 annexed, while the number for the previous year was 12,724. This shows a decrease in the number last year of 527. This decrease has been from the Marlborough District, 118; Nelson, 188; Westland, 248; and Auckland, 1; while there has been an increase in the Otago District of 28. Taking the value of gold exported last year—namely, £917,467, it shows the average earnings of the miners to be £75 4s. 5d. a man per annum; while the earnings for the previous year amounted to £80 12s. This shows a decrease in the earnings last year of £5 8s. 7d. per man. To take the different districts, with the number of miners employed in each, and the value of the gold obtained, the earnings of the miners would be as follows: Auckland, £116 2s. 6d.; Marlborough, £49 14s. 6d.; Nelson, £52 10s. 4d.; West Coast, £77 10s. 3d.; and in Otago, £63 5s. 9d. per man per annum.

QUARTZ WORKINGS.

As the auriferous quartz-lodes may be said to be the most prominent branch of gold-mining, it may be interesting to honourable members for me to show the progress made in this particular branch during last year. Previous to this year there was no regular record kept of the quantity of stone crushed and the yield of gold obtained; but by the provisions of "The Mining Act, 1891," requiring the registration of quartz-crushing machinery, and returns to be furnished, a comparison can be made in future year by year. According to the returns forwarded to the department, details of which will be found on pages 74–89 of the report of the Inspecting Engineer, it is shown that in the Auckland District there were 95,931 tons of quartz, and 23,719 tons of tailings crushed, which yielded 47,189oz. gold, representing a value of £123,872, and 44,189oz. bullion, having a value of £63,300; also, ore was sold to the value of £2,222, making the total value of the product £189,394. In the Marlborough District 950 tons of quartz was crushed, yielding 112oz. gold, representing a value of £448. In the Nelson District 5,547 tons of quartz was crushed, which yielded 1,097oz. gold, representing a value of £4,388. In the West Coast District, 49,036 tons of quartz and tailings was crushed, which yielded 27,019oz., representing a value of about £105,000. And in the Otago District there was 10,637 tons of quartz and tailings crushed, which yielded 5,263oz., having a value of £21,052: representing a total of 184,820 tons of ore crushed and tailings treated, the whole yielding 80,680oz. gold and 44,189oz. bullion; which, together with the value of ore sold—namely, £2,222—had a gross value of £320,282. Taking, therefore, the value of the gold and bullion exported last year, the returns show that 66 per cent. of it was obtained from the alluvial drifts, and 34 per cent. from our auriferous lodes. I will now refer to the different fields where quartz-mining operations are being carried on.

PUHIPUHI.

This district, where great excitement once prevailed on the discovery of lodes carrying silver, is now in a stagnant state as regards working the mines. The only men employed on the field last year were merely prospecting. Whether this field will yet be made to support a mining population is a question which time will solve. But it must be admitted that the original prospectors, by erecting obsolete and unsuitable machinery, committed a serious error of judgment, and one which has militated against these mines being properly tested. It was not only a great loss for those directly interested in the plant erected for the treatment of the ore, but it disheartened any one who had any interest in the field, and stopped capital from being invested in the development of the mines. Some of the holders have allowed ground on which a considerable amount of work was done to be forfeited; and when once a field has the reputation of being what is termed a "duffer," it takes a long time before confidence can again be restored, even should the field be a really good one. The original prospectors at Puhipuhi have still hope of being able to float their property into a company, so as to provide sufficient capital to work the ground and to erect a suitable plant to treat the ore.

COROMANDEL.

The yield of gold from Coromandel proper—that is, including the Tokatea Range and Kapanga, fell off considerably during last year. The Kapanga Company has hitherto been the mainstay of this district; but last year the gold returns from both these mines—the Kapanga and Coromandel—shows a falling-off as compared with the previous year. There was also a considerable decrease in the yield from the claims in the Tokatea Range last year. Taking the whole of the mines in the Coromandel County, exclusive of those on the Kuaotunu field, the yield of gold last year amounted to 3,447oz., as against 3,395oz. for the previous year. The increased yield last year was chiefly owing to the Owera Company, who obtained 1,921oz. gold from the Kauri Syndicate property. The English company who hold the Kapanga and Coromandel Mines deserve better success than they have experienced, as they have expended about £60,716 in the colony alone, exclusive of the purchase of machinery in England and the expenses of the London office. They have worked nearly all the known lodes in their ground down to a depth of about 420ft., and they have recently sunk their shaft to a total depth of 600ft., without coming on any stone carrying sufficient gold to pay for working. During last year one of the oldest mining companies in the Coromandel County—the Tokatea—sold their property, including the crushing-plant, for a merely nominal sum, as it was found that a considerable amount would have to be expended on the mine before it would be likely to become a profitable investment.

KUAOTUNU.

This is the most promising field in the Coromandel County. The lodes do not contain rich ore, but their great width, and the easy means of transporting the ore from the mines to the crushing-batteries in most of the principal claims, make them payable ventures. At the Try Fluke Company's claim they have abandoned grinding and amalgamating the tailings in pans, and have erected a Cassel plant, and are now treating the tailings by the cyanide process. The first cleaning-up gave them sufficient money, within a few pounds, to pay for the erection of the plant, after defraying all expenses in connection with working. Since this plant was erected, another plant has been put up at the Great Mercury Company's claim, and other companies are likely to follow suit, the Cassel process being specially adapted for the treatment of the Kuaotunu ore, where the gold is in an extremely finely divided state. The only difficulty in the way of dealing with the treatment of ore by the Cassel process is the amount of slimes which the ore from certain claims contains, preventing filtration. This appears to be the weak point in the Cassel process. During last year there were 10,093 tons of stone crushed, and 2,760 tons of tailings treated, which yielded 9,507oz. of gold; and for the former year there were 11,227 tons of stone crushed, and 200 tons of tailings treated, which yielded 8,794½oz. of gold. In referring to the yield from this field last year, I omitted to include the stone crushed by tributers, and the yield of gold from the same. None of the lodes on this field are yet worked to any great depth, but they carry the shots of gold-bearing stone for a far greater length than any other lodes in the Coromandel County; and, though none of the lodes contain rich ore, the gold is very regularly distributed, and the lodes being of great width ores of very low grade can be made to pay, especially when the mines are connected with the crushing-plants, as in the case of the Try Fluke Company.

THE THAMES.

There has been a considerable falling-off in the yield of gold from the Thames District according to the Customs returns. Last year the yield amounted to 19,880oz., representing a value of £79,318, as against 23,867oz. for the former year, representing a value of £95,069, which shows that the value of the produce last year was £15,751 less than for the previous year. This large decrease in the gold produced has caused a depression in this district, as it is feared that unless something new is discovered, many of the working population on which the tradesmen depend for a livelihood will leave the locality to seek employment elsewhere. Different schemes are propounded to further prospect the field, but as any one of these would be a large undertaking, involving many thousand of pounds of expenditure, no definite scheme has yet been decided on. There are so many divided interests to be consulted—each person trying to get as much as possible for his particular mine, which, below a certain depth, is not at present of the least value to him—the mine proprietors not having the means themselves to test the deep levels, nor can money be raised in the locality to carry out schemes of the magnitude proposed; and until the different mine proprietors come to an understanding amongst themselves, and are prepared to offer liberal terms to those who would embark their capital to assist them in further developing their properties, there is no likelihood of anything being done. It is certainly to be regretted that the gold is getting less on the upper levels, thus necessitating further prospecting; and, so long as high values are placed on mines which do not warrant the estimate set upon them, it will only be sheer necessity that will compel the owners to accept terms on which capitalists may be induced to assist in developing the deep levels. The principal gold-producing mines at the Thames last year were the Moanataiari, with 6,430oz.; Waiotahi, 2,579oz.; Hazelbank, 2,328oz.; Cambria, 2,001oz.; Fame and Fortune, 1,817oz.; and the New Alburnia, 1,687oz. It is to be regretted that the Sylvia Company, who erected one of the best plants in the district for the purpose of concentrating ores, have had to go into liquidation. The present proprietors are satisfied that this venture can yet be made a remunerative one.

OHINEMURI.

The Ohinemuri District is likely to become a large field for gold- and silver-mining. There are numerous lodes in many parts of this district likely to be taken up and worked at a profit, which have heretofore been considered of too low grade to pay. There has been very little prospecting done here yet, beyond the immediate vicinity of the mines that have been worked. This is, no doubt, due to the rough, broken nature of the country, full of gorges, and covered with dense timber, making prospecting a difficult and arduous undertaking.

There are three mining centres in this district all deserving of notice—namely, Karangahake, Waitekauri, and Waihi.

There are numerous auriferous and argentiferous lodes at Karangahake, some of which have given good returns in gold, but generally there is a large percentage of silver in the ore, and in some of the lodes there are other minerals which make the ore refractory to treat; and although the ore according to assay contains a fair percentage of bullion, when it comes to be treated in the ordinary manner a very small percentage of it is saved. The New Zealand Crown Company, consisting principally of shareholders residing in Great Britain, purchased a mine on this field some three or four years ago, and arranged with the Cassel Company to erect one of their cyanide plants in conjunction with their mine, and, since they have commenced operations, the company have proved that some of the lodes are very rich, having an assay-value of from £8 to £15 per ton. Recently this company has erected a new reduction plant, and intend to purchase ore from other mining companies according to its assay-value, which will induce individual miners to take up and prospect some of the lodes, as no outlay will be required for a plant. They will thus be able to sell their ore for its full value, after deducting expenses of treatment. Wherever there are refractory ores to deal with, the mines cannot be made as profitable ventures as they should be until central custom-plants are established, at which the ore can be disposed of according to its assay-value. The Crown Company has therefore taken a step in the right direction, as it will not only tend to develop the mining industry in this particular locality, but will no doubt prove such a source of revenue to themselves as will induce others to follow their example.

At Waitekauri Mr. T. H. Russell has erected a large crushing-plant to work the ore from the reefs there, but so far the ore has not proved of much value; and had it not been for the discovery of rich ore at Komata, the venture would have proved a failure. However, the ore from this new find has proved to be highly payable for working, and success has therefore attended the undertaking. A valuable discovery was made during last year by Lowrie Brothers of an auriferous and argentiferous lode near one of the branches of the Waitekauri Creek, about five miles up the stream from Mr. Russell's crushing-battery. The interests of the discoverers of this lode have also been recently purchased by Mr. Russell. This, together with the Komata Mine, is likely to prove a very valuable property.

During last year there was 22,771 tons of stone crushed in the Ohinemuri District, which yielded 1,722oz. of gold, and 40,203oz. of bullion. The latter represented a value of £61,118, while, in addition, ore was sold to the value of £2,222; the returns for the former year being 13,865 tons of quartz crushed, yielding 1,022oz. of gold, and 20,673oz. of bullion, the latter having a value of £25,975; and ore was sold to the value of £2,581. The total value of the gold and bullion obtained here last year was about £67,704, while for the former year it was £31,111, which shows that there was an increase in the value of the yield of gold and bullion on the year to the extent of £36,593.

WAIORONGOMAI.

The yield of gold from Waiorongomai still continues to be very small. Last year there was 1,519 tons of quartz crushed and 1,650 tons of tailings treated, which yielded 1,178oz. gold; as against 1,597 tons of quartz crushed, and 1,125 tons of tailings treated, for the previous year, which yielded 979oz. gold. The principal mining operations carried on here are by a small company, who now have part of the plant and properties formerly belonging to the Te Aroha Gold- and Silver-mining Company. Portion of the plant has been sold, and the company are now converting twenty heads of stampers to crush the ore dry, and intend to treat it by the Cassel process. Recently they forwarded 8½ tons of tailings from refractory ore to the Maryborough Smelting Works, in Queensland, and, after paying £3 5s. per ton for treating it, they had a net profit of £48 17s. 6d. being £5 15s. per ton. This shows that ore which cannot be treated by any process now in use in this colony, and which is considered valueless, can be made to yield excellent returns by a proper method of treatment. There are numbers of lodes on this field on which little or no work has yet been done. Many of these were prospected in the early days of the field, but were abandoned years ago as valueless owing to the refractory nature of the ores; but the recent returns show that some at least of these lodes will yet become valuable properties.

INANGAHUA.

The Reefton field is by far the largest quartz-mining centre in the Middle Island. The auriferous lodes extend over a very large area. Taking the northern limit of the present

quartz-workings at Larry's Creek, and the southern limit at the Big River, it will be seen that quartz-mining is carried on along a belt of about forty miles in length. The returns from this field show there was about 11,000oz. of gold more obtained last year than in 1889-90, and for the purpose of investment this field is in a much sounder position now than it has been for some time past. The mines on this field are in many instances a considerable distance apart, which necessitates a great length of road being constructed year after year to give access to the mines as they are opened up. Some very good returns have been obtained from the southern end of this field, and fresh discoveries are still being made further to the southward. During last year 37,693 tons of quartz was crushed, which yielded 20,171oz. of gold, representing a value of £80,894. To take the whole of the mining companies, as far as can be ascertained, that have carried on mining operations in this field, it will be found that they have crushed 559,943 tons of stone, which yielded 431,073oz. gold, representing a value of £1,623,245. While the actual money paid in calls amounted to £291,029, dividends to the amount of £510,597 have been paid to the shareholders; thus showing that £219,568 has been received in dividends more than the amount paid in calls. In this district there are thousands of tons of quartz tailings, which, with the improved methods of extraction, should prove highly remunerative. An attempt has been made at Boatman's by using the Cassel process, but so far it has not proved successful, owing to slimes and baser metals having been found, and which had not been taken into consideration.

OTAGO.

Although Otago was the first district in the colony where auriferous lodes were worked, there has never been any large quartz-mining field opened up. Some very rich stone was discovered at Skippers in 1863, and, many years subsequently to this, a considerable quantity of gold was obtained from the New Bendigo Reefs by the Cromwell Company. More recently, at Macetown, a considerable quantity of gold has been obtained from the auriferous quartz-lodes in that district. During last year the quartz-workings were chiefly confined to Skippers and Macetown. Although quartz-mining has been carried on at Nenthorn, Barewood, and the Old Man Range, at none of these places, however, have the operations been extensive. As far as can be ascertained, 10,637 tons of quartz was crushed last year in the Otago District, which yielded 5,263oz. of gold; and of this 5,457 tons was crushed by the Phoenix Company at Skippers, which yielded 1,920 oz. of gold; thus showing that about 36½ per cent. of the gold obtained from quartz-lodes in the Otago District came from the Phoenix Company's mine alone.

A rich auriferous quartz-lode was discovered during last year at Wilson's River, in the Fiord County, but scarcely any work has yet been done to either prove the extent of the lode or the rich gold-bearing shot it contains. All the alluvial gold found in this locality is intermixed with quartz, a great deal of the gold having sharp angular edges, and being honey-combed as in a quartz-lode. This indicates that it has not travelled far, and leads to the belief that other rich lodes will yet be discovered in this neighbourhood.

In connection with quartz mining, attention should be directed to any machinery or appliances tending to reduce the cost of working the mines or the reduction and treatment of ores, the expenditure on fuel alone, where steam machinery is employed, being very considerable, forming an important element affecting the profits of the mine proprietors. Representations having been made to me that electricity could be cheaply generated by water-power for working machinery at Kuaotunu and the Thames Goldfields, I directed the Inspecting Engineer to examine and report on this question in conjunction with Mr. R. E. Fletcher, Electrical Engineer, Dunedin, with whom arrangements had previously been made to visit these localities. These reports have been received, and will be laid on the table of the House.

In concluding my remarks on the quartz workings, I would point out that this class of mining is only in its infancy, and, notwithstanding the many improvements made in mining machinery, and the various processes for the amalgamation and reduction of ores, and the extraction of bullion therefrom, the recent experiments made by Mr. Park, of the Thames School of Mines, as to the percentage of bullion saved, show that those engaged in quartz-mining have yet a good deal to learn. There is evidently ample room for improvement in the appliances for the extraction of bullion from ores, as it is clearly demonstrated that at the present time only about 50 per cent. of the precious metals contained in the ores are saved.

The practice also adopted by many mining companies of paying away all the profits derived

from working their mines without creating a reserve fund to further develop their properties militates greatly against mining, and in some instances this has been the means of companies going into liquidation, as when money was required for prospecting works the shareholders were not in a position to pay calls.

ALLUVIAL MINING.

I now come to that system of mining by which was produced about 66 per cent. of the gold obtained last year, and under this head I class hydraulic-slucing and dredging. In alluvial mining, in the strict sense of the term, it will be found there is only a very small percentage of the gold obtained from shafts and tunnels, the greater portion having come from hydraulic-slucing claims. Both on the west coast of the Middle Island and in Otago there are large deposits of auriferous drifts which can be made to give very good returns for working wherever a good supply of water is available. Over thirty-two years have passed since gold was first discovered in the alluvial drifts, and only a comparatively small area of ground has yet been worked. As year by year passes by, fresh ground is being opened up wherever water can be made available. A great deal may yet be done in the conservation of water; and the number of men who can be employed profitably on the goldfields in working the alluvial drifts is only limited by the quantity of water available for carrying on hydraulic-slucing operations, and the mechanical appliances for working the drifts. Alluvial mining in the early days required no expensive outfit to make it a profitable undertaking. The different creek-beds, which had been the natural ground-slucices of the country, only required cleaning up, as the sand, gravel, and soil that for many ages had been regularly washed away by freshes and floods left the heavy metallic particles lying on the beaches, and in the crevices of the rocks in the beds of the streams, requiring only to be collected and gathered together by the hand of man. But now these well-known shallow placers or workings are getting exhausted, and large streams of water have to be conveyed in artificial ditches for long distances in order to sluice away the ground in the same manner as was done by natural causes before gold was discovered. These artificial works require in many instances a considerable amount of capital to be expended upon them before alluvial mining speculations can reasonably be expected to return interest on the money invested. It is worthy of consideration, particularly along the low level land adjoining the rivers in Otago, whether it is possible, by means of electric power transmitted from the higher levels, to utilise the same in driving pumping machinery, so as to raise water to work these flats, which are well known to be payable if sluiced. I will now refer to some of the principal workings:—

MAHAKIPAWA.

Very little gold was obtained from Mahakipawa last year owing to the wet season. Most of the shallow ground at the head of the creek being worked out, the workings are now confined to the lower end of the creek and flat. Some of the claims contain rich auriferous wash-drift; but, reckoning the time the miners lose owing to floods and inadequate machinery for pumping the water, there was not sufficient gold obtained to give those interested in the claims anything like wages. This is not to be wondered at, seeing that the whole of the claims were flooded for about ten months last year. It is thought that the lead of gold will be traced down through Mr. Cullen's freehold; but, before the ground can be advantageously worked, far larger pumps will have to be procured to contend with the water.

WEST COAST.

The West Coast may be termed the largest alluvial mining field in the colony. It is all less or more auriferous, and, taking the number of miners employed and the value of gold obtained by them, their earnings will compare favourably with the earnings of those employed in any other industry in the colony. During last year there was about 74,617oz. of gold obtained from the alluvial workings, representing a value of £301,523. A very large portion of the West Coast has never yet been prospected. Indeed, very little is known as to its auriferous character south of Ross, beyond the fact that some very rich leads of gold have been found on the sea-beaches all along the coast-line, some of these sea-beach leads extending a good distance inland, which shows that a considerable time has elapsed since they were formed; and gold of a coarse nuggety character has been found near the Abbey Rocks, about 140 miles south of Ross. There is a large stretch of country here having no roads or tracks, with the exception of a main road, which is now partially constructed through to Jackson's Bay.

There are very few inhabitants in this part of the colony, these few being settled near the ocean-beach. But few explorers have been any distance back from the sea-coast beyond the foot of the ranges. There is, however, a large area of country lying between the head of the Arrow and Shotover Rivers and the West Coast which has never yet been explored, and where gold is likely to be found; but, owing to its high elevation, and the difficulty of access, it will only be by mere chance that any mineral discoveries will be made.

WESTPORT.

There are very few miners in the immediate vicinity of Westport, and these few are scattered along the ocean-beach as far north as Mokihinui, and as far south as Fox's River, at Brighton; the principal gold-workings being at Charleston and Addison's Flat. At the former place a number of crushing-machines have been erected, which enable the cement to be worked at a profit, as it would not pay for sluicing in the ordinary manner with water. There are large areas of this cement on the Charleston Flat, and the Back Lead, and also on Brown's Terrace, which are likely to pay for working by this method; and there are also considerable areas covered with the same character of cement on Addison's Flat which are likely to be taken up. During last year one machine was erected. This is said to work the ground profitably. There are still a number of good claims on Addison's Flat, all the gold being obtained in ancient sea-beach wash-drift and sand. Several of these leads have been discovered between the present ocean-beach and the ranges, which are in some places six and seven miles inland, and there is still a large field in this locality for carrying on prospecting operations. A water-race has been completed from the Totara River to the Shamrock Lead, where a mining company intends to work the ground on the hydraulic-elevating principle; and a new lead was discovered in the early part of last year at Bradshaw Terrace, at the sea-beach side of Addison's Flat, which is likely to turn out well. The quantity of gold obtained in the Westport District last year was 15,832oz., representing a value of £63,420; whereas for the former year 14,148oz. was obtained, valued at £56,540.

INANGAHUA.

There are very little alluvial workings in the Inangahua District as compared with other districts on the West Coast. This may, however, be termed the only large quartz-mining district in the Middle Island. Still, there were about 320 men engaged in alluvial mining at Matakītaki, Maruia, Antonio's, Slab Hut Creek, and Blackwater. Of this number, 220 were Chinese; and the quantity of gold obtained was 4,207oz., representing a value of £16,407.

GREY.

This is a district where there are a number of gold-mining centres, and a considerable population at each. The belt of country covered with auriferous drifts extends from the sea-coast at Paroa and Rutherglen, and runs nearly parallel with the course of the Grey River up to Waipuna. There is very little of the ground in this belt where it is covered with drift-gravel but would pay for working with a good supply of water; and, the Grey River being the only outlet for tailings, any flats or small parcels of lands which do not appear sufficiently auriferous for working are required as sites for tailings. Again, on the northern side of the Grey River there is another belt of country covered with auriferous drifts, from near the Otututu River to the ocean-beach at the Ten-mile and Seventeen-mile Creeks, which includes Slaty River, Moonlight, Blackball, and the terraces on to Langdon's. It is on these two belts of country that all the miners in the Grey District are working. It may be said that the whole of the Grey District outside the coalfields is highly auriferous, and even within the coalfields gold is obtained in the alluvial drifts. During last year 24,545oz. of gold was obtained in this district, representing a value of £98,141.

WESTLAND.

The Westland District contains the largest area covered with auriferous drifts there is on the West Coast. It extends for 220 miles along the coast-line southward of the Teremakau River, every sandy beach being auriferous. Some of them have been remarkably rich, such as the Saltwater, Three-mile, Five-mile, and Gillespie's. At these places men are still making a livelihood, although the beaches have been worked for the last twenty-seven years. Notwithstanding that almost every river-bed in Westland contains auriferous drift, very few of them have been thoroughly prospected; and, as these rivers carry auriferous drifts onwards to

the ocean, and assist in keeping up the supply of gold on the beaches along the coast-line, it is natural to suppose that gold is to be found back into the ranges; but, with the exception of a few places near the gold-mining centres of Kumara, Waimea, Kanieri, and Ross, scarcely any prospecting has yet been done outside of about four miles back from the coast-line. The total quantity of gold obtained in the Westland District last year was 36,597oz., representing a value of £146,349.

KUMARA.

Kumara is the largest mining centre in the Westland District, and one from which nearly one-third of the gold was obtained last year; and yet the mining claims from which this quantity of gold was obtained do not exceed an aggregate area of 800 acres, all lying within a radius of about a mile. The total quantity of gold, as nearly as can be ascertained, that was obtained from this field last year was about 11,530oz., representing a value of £44,965. The total value of the gold obtained from this field since it was first opened, about sixteen years ago, is about £1,199,000, and there is not more than about 600 acres of ground yet worked, which shows that the value of the ground worked was about £1,998 per acre. The whole of the gold obtained from this field is on a false bottom; and during last year a shaft was sunk to the blue-reef bottom, which showed that there was an auriferous layer of wash-drift lying on it; but so far it has not yet been proved as to what area this layer of drift will extend over, or whether there are not rich leads or runs of gold-bearing wash occurring in different places over the flat, similar to those found on the upper levels. If this should prove to be the case, it would give a new life to this field, and cause more attention to be directed to prospecting the deep levels at the Greenstone and other places in the Westland District, where the gold is obtained on auriferous layers of drift lying on a false or gravel bottom. As there was a considerable quantity of water to contend with in sinking the prospecting-shaft, it is now contemplated to construct a drainage-tunnel from the edge of the terrace facing the Teremakau River. This will not only serve the purpose of prospecting the flat on the deep levels, but it will afterwards drain the ground, and allow claims to be worked from shafts, should payable gold be struck. It is further proposed to subsidise a main tail-race, which will enable ground to be worked below that which the present main tail-race commands, thus furthering the produce of gold and increasing the sales of water from the Government race, &c.

WAIMEA AND CALLAGHAN'S.

The ground in the vicinity of Waimea is becoming more difficult to work year by year, owing to the bed of the creek getting filled up with tailings, and the tail-races being gradually lengthened as the ground is worked back from the creek-bed. This necessitates giving less fall to the sluices, and consequently the same quantity of material cannot be sluiced away as formerly unless a large quantity of water is used; and the miners find that the ground is not sufficiently rich to pay for a large supply of water. There is a considerable area of auriferous ground in the valley of the middle branch of the Waimea Creek, but the present water-supply does not command it. As the miners on this field are entirely dependent on a supply of water to work the ground, it has been deemed desirable to construct a branch water-race from the main supply-race to work this ground, so that the whole of the water from the supply can be profitably utilised by the extension race to Callaghan's.

HUMPHREY'S GULLY.

A great depth of auriferous drifts, extending over a large area on the south side of the Arahura River, is held by the Humphrey's Gully Company, which ought to be made a valuable mining property if worked systematically by hydraulic sluicing with a good supply of water. It is to be regretted that the working of this ground in the past has not proved a remunerative investment for the very large sum expended on the property. One of the finest water-supplies in the colony can be got from the Arahura River to command this ground at a comparatively small cost. Instead, however, of directing their efforts towards obtaining a supply from this source, the company have frittered away more money than it would have cost to have obtained practically an unlimited and never-failing supply from the river in question. During last year, with the intermittent and limited supply of water, they obtained 720oz. gold out of a portion of the sluices, representing a value of £2,809, and they estimate that there was still 200oz. left in the sluices, which were not washed down. This quantity of gold was obtained in 471 shifts, which is equal to 157 days' work.

KANIERI AND RIMU.

A considerable number of miners are still employed in the vicinity of the Blue Spur, Kanieri, Back Creek, and Rimu. At the former place Mr. Boys has constructed a drainage adit-level from the valley of the Arahura River for a distance of about one mile. After being engaged for seven years in the construction of this work, it is said that he has come on to good gold-bearing wash-drift, which is likely to repay him for all his labour. At Kanieri there are only a few miners employed, the chief mining operations being carried on at Back Creek and Rimu, some of the hydraulic-sluicing claims having been paying fairly well for working; but the supply of water is very limited. Several of the claims on the new rush on Seddon's Terrace, Rimu, are now worked from adit-levels driven in from the front of the terrace, facing the valley of the Hokitika River, but the ground generally is held to be very poor. It is only by being able to work their claims constantly that the miners can make even small wages. During the last year the Prospecting Association discovered gold on the rise of the terrace alongside the road going through the Township of Rimu, and several shafts have been sunk. Here sufficient gold was found in the drift to warrant the driving-out of the ground in the auriferous layer. The association have also put down 115 bore-holes between the Mahinapua Creek and the ocean-beach with the view of striking an auriferous black-sand lead, but they were not successful in finding one. There is a large field in this locality on which prospecting operations could be carried on, but the great depth of drift gravels on the main bottom prevents individual miners attempting work of this character, the expense being great, owing to the probability of striking water in the alluvial drift deposits before reaching the bed-rock. It is only by the united efforts of the whole of the miners in a district that prospecting the deep ground can be successfully accomplished.

ROSS.

This was at one time one of the busiest places on the West Coast where mining operations were carried on, and it is the only field in the colony where eight different gold-bearing layers of wash-drift have been passed through and no main bottom yet reached. It is a field of considerable interest, from the fact that river-worn gravel, having highly-auriferous layers of drift through it, is found over 200ft. below the present sea-level. Fossil remains of gigantic fish have been found at a height of at least 200ft. above the present sea-level, showing that the ground in this vicinity has been elevated and depressed at different periods. A considerable quantity of gold was obtained from the deep levels at Ross, but the water to be contended with in working the ground was too great for the pumping machinery. For several years the workings on these lower levels have been abandoned. They are now confined to ground which can be drained by a tunnel tail-race, constructed from near the ocean-beach. There are still a good few miners employed in this locality, but the principal gold-producing claims are the Mont d'Or and the Ross United. During last year 3,790oz. gold was obtained, representing a value of £15,161. Although the Westland District extends for over two hundred miles south of Ross, there are only a few miners scattered here and there on the ocean-beaches and gullies near the sea-coast; and until this part of the country is more opened up by roads and tracks, the miners living near the principal fields will not be inclined to prospect the southern part of this district. Recently information has reached me that gold of an apparently payable character has been found in the vicinity of Mount Rangitoto, in a large bed or band of conglomerate, composed of soft granitic or gneissic rock, which is likely to prove payable for working with suitable appliances.

OTAGO.

The returns of gold from alluvial mining for last year were about the same as the yield from the West Coast; the quantity obtained from Otago being 74,861oz., representing a value of about £301,351. A large portion of the Otago District is of a very old quartzose-schist formation, and, where there is alluvial drift-wash overlying this formation it generally contains gold. A vast extent of the country being wholly denuded of timber—if ever it had been covered with forest—exposes the surface of the ground to view, and renders the prospecting of these drifts comparatively easy. The topographical character of the country, however, with generally large masses of quartzose-schist rocks projecting above the surface, especially on sidling ground, makes it an expensive undertaking to construct water-races at high elevations. In this respect the construction of water-races is far more costly than on the West Coast; and, wherever fluming has to be used, the cost of the timber and its transit from the coast is a great consideration. I will now refer to the workings in various gold-mining centres in this district.

MAEREWHENUA.

Notwithstanding the Proclamation declaring the Macrewhenua River a channel for the deposit of tailings, so as to allow the miners to work the ground, there was a decrease in the yield of gold last year from this field, and, until there is an additional supply of water brought on to command the ground, there is very little probability of the yield of gold increasing in future years to any great extent. Last year 1,796oz. of gold was obtained, representing a value of £7,355. A small water-supply is at present being constructed from one of the branches of the Macrewhenua River by the Mountain Hut Water-race Company; but this water-race will not largely augment the present supply on the field.

MOUNT IDA.

The auriferous drifts found at Maerewhenua extend over the range to Kyeburn, Mount Buster, and the Mount Ida goldfield; although on the latter field very little of the fine quartz-drift found at Maerewhenua and Mount Buster has been worked. Most of the gold obtained from the Mount Ida field is from more recent deposits than the quartz-drift referred to. The prospecting-shaft sunk in the bottom of the Hogburn Gully showed that there is an auriferous quartz-drift deposit underlying the "Old Man" or "Maori" bottom; also in the valley of the Eweburn, where a bore-hole was recently put down to a depth of 650ft., with the view of finding artesian water. This bore went through a body of quartz-drift before reaching a depth of 575ft., in which the colour of gold was seen. There is a considerable area of ground on this field, containing the older drifts, and also the more recent deposits; and when these older drifts can be traced here and there on the surface, from Mount Buster to St. Bathans, and round the foot of the Dunstan Range to Clyde, there is little doubt that further discoveries will be made and fresh ground opened up. During last year there was 10,779oz. of gold obtained from the Mount Ida District, including Kyeburn, Mount Buster, and St. Bathans, representing a value of £43,528.

ST. BATHAN'S.

St. Bathans is a portion of the Mount Ida District deserving of special notice, as its basin contains a great thickness of the same old quartz-drift which is found on the top of Mount Buster, containing in some places a great deal of gold. It has not yet been satisfactorily determined from whence this deposit came, nor the direction of the current of water which brought it to its present position. It is evident that this drift has been deposited by water, inasmuch as amongst it there is a bed of about 5ft. in thickness consisting of leaves of trees, which is now tilted at the same angle as the drift in which it lies. Great depths of this deposit have been sluiced away in the ordinary manner; and at present, in Mr. Ewing's claim, the material is lifted about 80ft. with hydraulic elevators, by the aid of which 800oz. of gold was obtained for the last season's work, with five men employed. Mr. Ewing states that the quantity of gold in this deposit seems to increase, if anything, as it goes down. Gold was first discovered here in 1863, and since then over 100,000oz. have been obtained from this basin and its surroundings. Not more than 200 acres of the ground appears to have been yet worked.

TINKER'S.

The richest field in Otago for the number of miners employed is Tinker's. There are only a few claims being worked, as the whole of the water-rights in the locality are held by the owners of these claims, and is fully utilised unless in times of freshes. There is a large extent of auriferous ground to work in this locality; but, unless by reservoirs being constructed to conserve the water in time of floods, and during wet weather, there is no possibility of bringing water to command any of the ground at a reasonable cost. The quantity of gold obtained for last season's work was about 1,500oz.

TUAPEKA.

The old diggings in the vicinity of Tuapeka, Gabriel's, Weatherstone's, and Munro's Gullies are getting worked out. Were it not for the Blue Spur Company and the Local Industry Syndicate there would be very few European miners now working in any of the gullies and creek-beds. The Blue Spur Company having purchased and leased most of the available water in the locality, no one else can test the ground. They therefore hold the key to all the available ground that their water-supplies command. It is gratifying to learn that this company—which is formed principally by English capitalists—carried on their mining

operations last year with success; and it is to be hoped, in the interests of the colony, that they will yet be recouped for their original outlay. During last year there was 21,681oz. of gold obtained from the Tuapeka District—which includes Waitahuna, Waipori, and portion of the Clutha Valley—the value being £87,848. The Tuapeka District embraces a large area of auriferous country, and, although there are not many miners in any particular locality, there are a large number scattered over a considerable extent of country.

CLUTHA VALLEY.

The Clutha Valley—although a portion of it is in the Tuapeka District, as already mentioned—deserves special notice, as the whole of the watershed of the Clutha River is auriferous, and gold is found in payable quantities in the bed of every stream and creek flowing into that river above its junction with the Pomahaka and Tuapeka Rivers; and, as the work of concentration has been carried on by these streams for many ages, it is only reasonable to look for heavy deposits of gold in the Clutha River, which has been the main natural ground-slucice of this part of the colony. Not only is the present bed of the Clutha rich in gold, but also the flat terraces, which now stand high above its banks and were once the original bed of the river, contain leads of gold, some of which have been advantageously worked; and, as the river from time to time changed its course while cutting its way through these immense deposits of gravel-drift the process of concentration was carried on—the lighter material being swept with the current on towards the ocean, while the heavier and denser portions were left behind. A large number of mining and dredging claims have been taken up in this valley. Some of them are producing a good deal of gold. Wherever water can be brought on to command the ground in this valley at a sufficient elevation claims can be made to pay. It is not to be supposed that rich auriferous drifts will be found in every place, but, taking the whole of the valley, there is only a very small proportion of these drift-deposits that will not pay for working with a good supply of water.

At Bald Hill Flat there is a considerable area of ground taken up, and water is being brought in from the different creeks and streams to work it. Some of the claim-holders who had a fair supply of water last year did very well. This ground is close to the foot of the Old Man Range, and directly under where the quartz-lodes are worked by Symes Brothers, and by Messrs. Crossan and Gray.

BANNOCKBURN.

The principal claims now worked at Bannockburn sluice into the Pipeclay Gully Sludge-channel, but the ground in this locality is gradually getting washed away, so that if fresh ground is not found higher up this gully, or further back under the old township, the present claims will not last any great length of time. In addition to the claims in the vicinity of Pipeclay Gully there are two higher up the valley, which are worked by the aid of a new channel constructed by Patterson and party.

CARDRONA AND CRIFFEL.

There are about the same number of miners on these fields as there were for the former year, there having been a few more at Cardrona, while there were also less on Criffel; but the quantity of gold obtained was less than for the former year, about 1,600oz. having been obtained from Cardrona and 350oz. from Criffel. At the latter place there were only about fifteen miners employed, while at Cardrona there were about eighty miners. The gold at Cardrona is being traced into new ground on the side of the range, and it is thought that this may probably lead to it being traced towards Criffel.

SHOTOVER.

The valley of the Shotover, as well as the bed of the river, contained some of the richest deposits of gold that have been found in the alluvial drifts in the colony. This river has cut itself down into the solid rock, and forms as it were a gorge for a long distance, with wide beaches here and there. This gorge, cut out through the quartzose schist rock has a very uneven bottom, and the foliations of the schist rock form as it were natural riffles for saving the gold, as it was carried down the stream with the lighter material. The whole of the beaches and bed of this river have been worked wherever it was possible to do so by manual labour; and even now individual miners are carrying on hydraulic-slucicing operations on the terraces alongside the river, and those portions of river-bed which could not be worked

in the early days are now being worked by dredges, which lift the auriferous material. Large sluicing operations were carried on last year by Messrs. Davis Brothers, at Stoney Creek Terrace, and by Messrs. Davis and Moody Syndicate Company, at Burke's and Londonderry Terraces. These have both good water-supplies; and several other parties are working higher up the river, who are said to make good wages. Aspinall's claim at Skipper's Point has been very rich, and, although not more than about 15 acres in extent, it has been worked for the last thirty years, and possibly will yet take five years more to work it out. It is said that considerably over 30,000oz. of gold has been taken from this ground. It is hard to define the limits of the extent of country that could be made to pay for working in this valley if large supplies of water were available at a high elevation.

ARROW RIVER.

There is a considerable extent of auriferous drift on the terraces alongside the Arrow River, but their high elevation prevents sluicing operations being carried on, as there is not a steady supply of water to be obtained unless at a great expense. A large undertaking has been completed by the Arrow Tunnel Company to work the bed of the Arrow River above the Falls, which are about three-quarters of a mile below the junction of Soho Creek. All the works were completed, and every arrangement made to commence to get gold, when the company had to allow their property to be sold by the mortgagee; and it was recently purchased by Mr. Miller, who will reap the benefit of the former company's outlay, he having acquired the property for about one-fifth of its original cost.

ROUND HILL AND OREPUKI.

For many years the gold-workings have been carried on principally by Chinese at Round Hill; but now that an English company has taken up ground in this locality, they have purchased and leased most of the water-rights in the district, and the Chinese are almost wholly dependent on this company for a water-supply to work the ground. As the water is extremely scarce, the company have only a very limited quantity that they can dispose of; and the result is that the number of Chinese is decreasing year after year. Some of the ground in this locality is very rich; but the small supply of water, and the large quantity of tailings that have been and are being continually deposited in the valley of the Ourawera Creek, has raised the surface to such an extent that none of the low-lying lands can now be worked, unless with the aid of machinery, or a hydraulic-elevating plant. Several people, previous to the Round Hill Syndicate Company taking up the ground, tried to work the valley by means of dredges, but in every instance this proved a failure. The present company are now working the ground with hydraulic elevators, with a certain amount of success, but they will have to get a better water-supply before they can expect to make the ground sufficiently remunerative for working.

At Orepuki there are a limited number of miners at work making fair wages when they have a good supply of water; but, except in very few instances, the water-supply is not sufficient to work the ground advantageously. Although this is not a field for any one to come to from other places, the miners who are here, and have water-supplies of their own, will make a good livelihood for many years to come.

WILSON'S RIVER.

It is only within the last two years that gold of a payable character has been discovered north of the Waiau River; and the recent discoveries in Coal Island, at Wilson's River, and at Sealer's Creek on the mainland, will tend to open up this part of the country, which heretofore has well been termed a "*terra incognita*." It was thought by many miners that gold would be discovered north of the Waiau; but the want of roads or tracks prevented any one from exploring this part of the country, until after a survey-line was cut for a road along the coast-line between Preservation Inlet and Wilson's River. The men working at Coal Island followed up the surveyor, and found rich deposits of gold in the bed of Wilson's River; but as this river is subject to freshes and floods, it was only for a few days a month that mining operations could be carried on. Gold was afterwards found in Sealer's Creek and the terraces, and, probably when this part of the country gets more opened up by roads and tracks, several other discoveries will be made. It is only, however, in the summer months that prospecting can be carried on in the back country on account of its high elevation.

DREDGING.

I now come to another most important branch of the gold-mining industry—dredging. When dredging-machines were first introduced by Messrs. Gibson, Brooke, Smith, and Wellman, they proved failures, for the reason that, although the principle was good, their construction was defective. The dredges at first were too small, and the washing appliances were of the crudest kind. But, as year by year passes by, improvements are being constantly made which render these machines more applicable to mining every day; and I venture to predict that the day is not far distant when a very large number of these dredges will be profitably employed on the ocean-beaches on the West Coast, where formerly they were all failures, as well as for working comparatively shallow wet ground, such as that in Waipori Flat, where three dredges were working last year. The whole of the dredges now at work on the different rivers, creeks, and beaches, answer admirably as far as lifting the material is concerned, but their chief defect lies in the appliances for saving the gold. It is well known by those who are acquainted with working the auriferous sands on the ocean-beaches, that to rush the material through sluices with a large body of water renders it almost impossible to save the gold, which is of a fine scaly character, requiring the sand to be separated from the stones and coarse shingle, and treated carefully on wide tables covered with plush, blankets, or baize. The washing appliances on these dredges are, however, becoming more perfect.

COAL-MINING.

I will now refer to a branch of the mining industry which has in the past made rapid strides, and will continue in the future to steadily progress, in proportion to the increase of the population and enterprise displayed in the establishment of other industries, and the opening out of foreign markets for our coal. The difficulty in finding a foreign market is becoming greater every year, owing to the development of the Japanese coal-mines; and in future years the large deposits of coal in China, if worked and shipped away, will enter largely into competition with coal coming from any of the Australasian Colonies, as the cost of labour in both Japan and China is very small. Indeed, the price paid for labour in these countries would hardly be sufficient to provide bare food for unmarried men in these colonies. It is only, therefore, owing to the superiority of our coal that we can hope to compete successfully with coal from other countries outside the colony.

During last year, the total output from our mines amounted to 673,315 tons, and the quantity imported from the Australian Colonies was 125,453 tons, making the total output and coal imported to be 798,768 tons; while the quantity of coal exported was 84,414 tons. But of this amount, 56,245 tons was used in coaling the Direct steamers, and therefore may be treated as consumed within the colony, leaving the net export to be 28,169 tons. The consumption of coal, therefore, within the colony last year was 770,599 tons, as against 765,019 tons for the previous year. Details will be seen on reference to Tables Nos. 5 to 10 annexed. The increased output last year as against the former year was less than it has been any year since our coal-mines were opened, it being only 4,521 tons, while the coal imported last year showed an increase of 135 tons; but this quantity will always fluctuate year by year in proportion to the quantity of produce we can dispose of in the Australian markets, as it is cheaper to bring back coal as ballast, if only the same price can be got as it cost to put it on board the vessels and pay wharfage rates and harbour dues. The net export last year was 924 tons less than for the former one; and no increase in this direction may be expected until there is a class of vessels which can carry at least 3,000 tons on one bottom from the ports of Westport and Greymouth, as it is only on the west coast of the Middle Island that the superior class of bituminous coal is found, and it is to this class of coal especially to which we shall have to look for a largely increased output from our mines.

Taking the output of the different classes of coal from our mines last year, there were 406,828 tons of bituminous coal; 89,549 tons of pitch coal; 149,460 tons of brown coal; and 27,478 tons of lignite; as against 387,839 tons of bituminous coal; 96,979 tons of pitch coal; 161,904 tons of brown coal; and 22,072 tons of lignite for the former year: showing an increased output of 18,989 tons of bituminous coal, and 5,406 tons of lignite; while there was a decrease in the output of 7,430 tons of pitch coal, and 12,444 tons of brown coal, from the quantity raised the year previously. It is, therefore, gratifying to find that there is a steady increase year by year from our bituminous mines, this being the class of coal from the export of which alone we may expect this branch of the mining industry to rapidly expand. The pitch and brown coals will only be used within a certain radius of where it is raised, as it

is only suitable for consumption within the colony; and as it will not stand much handling, it cannot be stacked and wait for a market, as with bituminous coal, as the action of the atmosphere tends to break it up, so that in course of time it crumbles into dust; while lignite can only be used in the immediate locality where it is raised, and there only in the interior, where the cost of transit of other classes of coal is very high.

The principal mines from which there has been an increased output of coal last year are the Waikato Mines near Huntly, 3,210 tons; and Ralph's Mine at Huntly, 6,341 tons; both of which produce brown coal; there was also an increased output from the Westport Colliery Company's Mine, Coalbrookdale, of 5,860 tons, and the Grey Valley Coal Company's Mine at Brunner, 32,923 tons, of bituminous coal. The increase in Ralph's Mine at Huntly is due to a new mine having been opened out, but this mine is now leased by the Taupiri Extended and the Taupiri Reserve Company, who have arranged to work the whole of the three mines in conjunction with each other. This combination was brought about owing to keen competition, which resulted in the companies disposing of their coal at cost-price, and some of it even at a loss. The principal mines where there has been an decreased output are the Kawakawa, 13,828 tons; Kamo, 5,728 tons; Kaitangata, 7,930 tons; Nightcaps, 8,183 tons; and White Cliffs, 1,844 tons. The large decrease of the Kawakawa Mine was expected, as the whole of the coal to the dip has been worked out, and there are only some pillars in the early workings, which will soon be taken out. This company has a coal-property at Hikurangi, where workings will probably be carried on as soon as the railway is completed from Kamo to that place. There is a considerable area of coal-measures between Hikurangi and Eru Ngahu's property which the railway when completed will open up.

At Ngunguru, near Whangarei, a semi-bituminous coal-seam has been opened out, containing the best class of coal yet found in the North Island, but the area of the coal-measures here are not yet correctly ascertained. The coal taken out is only as yet near the outcrop, nevertheless it comes out in large blocks, and stands the weather remarkably well. If it should prove of considerable extent it will be a valuable discovery; and if vessels can be got to convey it to Auckland at a reasonable rate of freight, the mine is likely to prove a good investment for its proprietors. The coal, has, however, to be taken down the river in punts for some distance. The water at the entrance of the mouth of the river being shallow, only vessels of small tonnage can enter to take the coal away.

It is to be regretted that the Grey Valley Coal Company have had to abandon a portion of their workings, owing to the influx of water which they were not able to contend with, and also that extensive prospecting operations will have to be carried on before the mine can be again opened out so as to employ the same number of men as formerly. The company state that the area of available coal will be exhausted in about two years, if no further measures are found on the other side of the faults which are known to exist; and they have appealed to the Government for assistance. I have instructed experts to visit and examine the mines, and the coal-measures within this company's leases, and to report on the same, so that the Government may have the fullest information respecting the mines in this locality, where so many men are located who are depending on coal-mining for a livelihood.

The completion of the railway from Westport to Mokihinui will give facilities to bring the Mokihinui and Cardiff Coal Companies' Mines in direct communication with a port of shipment; and, as soon as the necessary repairs and alterations are completed to the company's private line, there is likely to be a fair output of coal from this locality. Steps are likewise being taken to connect the Black Ball Mine with the Midland Company's Railway at Ngahere, and when the necessary works are completed a large output may be expected from this mine also. The Westport Colliery Company are constructing an incline to open up their coal lease at Granity Creek, so that in a very short time there will be sufficient bituminous mines opened out to supply the demand for some years to come. Until such time as foreign markets are found for our coal the increased output from the mines, year by year, will only be slow, as the output need only be in proportion to the growth of our population, our industries, and commerce.

The continual waste of small coal from our bituminous mines is a matter greatly to be deplored. In a letter recently received from the managing director of the Grey Valley Coal Company, he stated that there is from 500 to 700 tons of small coal washed into the Grey River weekly. This waste should not take place where there is a good demand for coke of a superior quality; and it is fully acknowledged that our bituminous coal can be made into coke equal to any in the world, if the same process is used in making it as is adopted in

Europe. The question of making coke is attracting the attention of coal proprietors in New South Wales, and the Government of that colony have received a report from its Geologist in regard to this which affords a great deal of valuable information on the subject, and I would refer honourable members to this report, which is embodied in the report of the Inspecting Engineer. The fine dust is really the best of the coal, and, with proper care in manufacturing it into coke, would have a ready market in the Australian Colonies. A profitable industry would, accordingly, be opened up; and what is now considered by this company as valueless refuse would be thus converted into a marketable commodity which would give profitable returns for its manufacture.

COAL-MINERS.

The average number of men employed in connection with coal-mining last year was 1,681, as against 1,693 for the previous year, showing that there were twelve men less employed last year than for the former year. Taking the value of the labour in connection with raising the coal and loading in trucks, ready for transporting to either a port of shipment or a market, to be 6s. per ton, then the total value of the men's earnings would be £200,633 4s., which is equal to £119 7s. 1d. a man per annum; while the average earnings for the former year on the same basis was £118 10s. 2d., thus showing an increase last year to the extent of 16s. 11d. per man.

The average earnings of the miners are not large, but they will compare favourably with wages earned by those employed in agricultural pursuits.

METALLIFEROUS MINING.

Very little attention has hitherto been given to metalliferous ores, other than those containing gold and silver, although there is a large variety of minerals in the colony; but to work these economically expensive plants are required, in order to extract a fair percentage of the metals they contain. We have copper-ore in some parts of the colony that, even at its low market value, could be made to give profitable returns for working. During last year Mr. A. McKay, the Mining Geologist, discovered a wide belt of cupreous schist in the ranges up the Arahura River, from which samples were tested at the Colonial Laboratory which gave 10 per cent. of copper. There is a large lode containing copper-ore in the northern portion of the Auckland District which also gives a large percentage of copper; and deposits of copper-ore have been worked at Kawau, Great Barrier and D'Urville Islands; the Dun Mountain, Aniseed Valley, and Roding River, in the Provincial District of Nelson; Whakatipu, and Waitehuna, in the Provincial District of Otago. More recently, prospecting operations have been carried on at Maharahara, near Woodville; but none of the places where operations have heretofore been carried on have given sufficient returns to pay for the expense in getting the ore and forwarding it to Europe for treatment. There has been no attempt made to get a plant in the colony, with the exception of that erected by the Champion Company at the Roding River; and even that plant is of very little service, for the men they had in charge of it evidently did not understand the principle of extracting the copper from the ore, as that metal and the slag can yet be seen all mixed together. It is likely that some of the copper lodes will yet be taken up and made to give good returns by having a proper plant on the ground. There are many other ores also that will yet be worked and made remunerative investments. Scarcely anything has hitherto been done in metalliferous mining. The reason of this may be, to some extent, that the ores are generally found in mountainous regions, where there are neither roads nor tracks. The difficulties in the way of prospecting the lodes appear so great, and the expense in working them and forwarding the ore for miles through a very broken country to a port of shipment, deters people from expending any capital to open them up, as they would require to be exceptionally rich to pay for the expense of working under these circumstances.

Ores of cinnabar are also found in many parts of the colony—at Waipori, in the Otago District, and at Waiorongomai, Puhipuhi, and Ohaeawai, in the Auckland District. At the latter place a lode of this mineral has recently been found in the side of the range adjacent to the hot pools, where quicksilver in its metallic state is seen distributed in minute globules amongst a fine black sediment in the valley.

Scheelite is also greatly inquired after by firms in London and Liverpool, who state they are prepared to take 200 tons per annum. There should be no difficulty in supplying that quantity, as this mineral is widely distributed over the Otago District. The price quoted

on shipboard at London for mineral yielding 55 to 60 per cent. of tungstic acid is 12s. to 14s. per unit.

MANGANESE.

Small quantities of manganese ore are exported to Europe every year, but this is an industry which has not progressed. Records have been kept of the quantity exported since the year 1878. In that year 2,516 tons was forwarded to Europe, of a value of £4 a ton, and last year only 521 tons were exported, having a value of about £2 7s. 6d. per ton. During the last year, J. W. Jaffray and Company, of Sydney, got a lease of portions of Waiheke Island, and it is stated that they have entered into arrangements to supply 2,000 tons per annum from that place.

ANTIMONY.

There were three companies engaged in antimony-mining last year—namely, at Waipori and Barewood in Otago, and at Endeavour Inlet; but the price of the ore at the present time is low compared with what it was a few years ago, consequently the profits on working it are very small. The company at Endeavour Inlet have a good concentrating plant, and are able to dress the ore up to a high percentage. This company estimates that they get a clear profit of about £2 per ton after paying all expenses in connection with it. During last year 364 tons were exported of the value of £4,900.

KAURI-GUM.

This industry is assuming larger proportions every year, and last year the export was 8,705 tons, valued at £517,678, which is equal to £52 9s. 4d. per ton; whereas the quantity exported for the previous year was 8,388 tons, valued at £437,056, being equal to £52 4s. per ton. It will therefore be seen that the quantity exported last year has increased by 317 tons, while the value increased by £80,622. The value of kauri-gum has fluctuated considerably. When it was first exported, in 1853, its value was about £19 per ton, and in 1860 it fell to a little over £9 per ton; by 1870 it gradually rose to nearly £40 a ton, and by 1880 the price had risen to over £51 per ton. The value is not only increasing, but the quantity exported year by year is increasing, notwithstanding that this industry has been carried on for the last forty years, being confined to a comparatively small area of the colony. The total area over which kauri-gum is found, exclusive of the islands, is about 5,682,586 acres.

It is very difficult to ascertain the number of men employed in digging gum, as a great many Natives are casually working on the gum-fields; but if the average earnings of those employed be taken at, say, £100 per annum, there would be about 5,177 men employed in this industry. To make a comparative analysis of the magnitude of this industry with gold-mining: the value of the produce of the gum-fields last year was £111,155 more than the value of the gold got on the West Coast; or, to take the value of the whole of the mining products on the West Coast last year, including coal, which was about £602,857, it shows that the value of the mining products in the Auckland District—including kauri-gum—which amounted to about £715,332, exceeded the volume of the returns for the West Coast by £112,475: therefore the gum industry, together with mining, in the northern portion of the colony forms a large factor in the employment of the population in the Auckland District. It has been represented to the Government that large numbers of men from foreign countries have recently come to the gum-fields, having no intention of settling in the colony. The effect of this is that they are taking away the means of earning a livelihood from men who have taken up land in village-settlements, who were partly depending on the gum-fields to afford them profitable employment in seasons when they were unable to work on their land. A Commission has now been appointed to inquire into the best mode of dealing with the question of gum-digging, and when their report comes to hand, the Government will then be in a position to deal with the subject in a complete and comprehensive manner.

ROADS AND TRACKS.

The construction of roads and tracks is essential to the development of the mining industry; without these, especially where the land is covered with heavy timber and dense scrub, the miner cannot carry on his operations to any advantage in order to open up the country and afford facilities for getting goods, machinery, and plant on the ground. The greater portion of the Otago District is destitute of timber, and roads can be easily made in any direction; but on the West Coast, and on the northern goldfields, it is impossible to carry

on mining operations advantageously unless roads are constructed, thus affording an easy means of access to get mining requisites and machinery brought on the ground. Although a large amount has already been expended in this direction, more money will yet be required as fresh mines get opened up, the roads having to be extended; and, even in those parts of the country where there are no mines at the present time, tracks require to be made before miners can successfully prospect the ground. The expenditure on roads and tracks last year was £18,358, of which amount £17,325 was given in direct grants, and £1,033 as subsidies to local bodies. The total liabilities on works of this character at the end of March last was £14,881. During the past ten years, during which votes for this purpose have been under the control of the Minister of Mines, the expenditure on this class of works has been £260,214, of which amount £124,646 has been paid as direct grants, and £72,620 as subsidies to local bodies; showing that while the expenditure by Government and its liabilities amount to £214,183, the local bodies contributed £48,067.

WATER-RACES.

As the greatest portion of the gold is obtained from the alluvial drifts, one of the most important elements in working this description of ground is water. Without this, hydraulic sluicing cannot be advantageously carried on, neither can much of the ground be made to pay for working. A large extent of auriferous drifts, both on the West Coast and in Otago, would be lying idle, and places which now contain a prosperous population would probably never have sprung into existence but for the assistance to the mining industry afforded by the Government water-races. According to returns furnished by the Wardens, the value of the water-races on the gold-fields, exclusive of those managed and controlled by the Mines Department, is £859,053; while the value of tail-races and reservoirs are given at £309,052, making a total of £1,168,105. The water-races controlled by the department are the Waimea-Kumara and the Mount Ida Water-races. The latter work was managed by a trust up to the 31st December last, when the trust was abolished, and the Government assumed direct charge. Previous to this date, although the race was managed by a trust, the Government had to find money for any deficiency existing between the revenue and expenditure, and the latter was generally more than the former.

During the fifteen years the works were managed by a trust the value of the sales of water amounted to £20,182, while the expenditure on maintenance was £23,777. The amount of outstanding arrears for water at the end of December last was £1,702; while the liabilities of the trust paid by Government after taking the race over was £504, thus showing that the total receipts up to the end of last year was £5,801 less than the expenditure. The water-race, which is over seventy-five miles in length, was in a very bad state of repair, requiring considerable expenditure upon it before sufficient water could be supplied to the miners even in moderately wet weather, when there was plenty of water in the creeks. These repairs are now being made, with the view of insuring a more permanent supply, and it is expected when they are completed that this water-race can be made self-supporting.

The demand for water from the Waimea Water-race is gradually getting less; the lower portion of the creek-bed being now filled up with tailings to such an extent as to greatly interfere with the fall of the tail-races. The ground is also getting further back from the creek-bed every year, and it contains less gold. A branch race was partially constructed last year from the main supply-race, which, when completed, will command a considerable area of new ground, and thereby afford profitable employment to the miners in this locality, and increase the revenue from sales of water. The expenditure on this work last year was £2,271, the value of the sales of water being £1,016, and the expenditure in maintenance £858, which leaves a profit on the working of £158.

The value of the sales of water from the Kumara Race last year was £5,789, and the expenditure £1,783, which leaves a net profit on the working of £4,006; but portions of this profit had to be expended last year in constructing the branch race already referred to from the Waimea supply, and also in extending the Kumara Water-race along Kapitea Hill.

The Nelson Creek Water-race was leased for two years. The lease expires in August next, and tenders are to be invited for leasing this water-race for a further period of three years.

Taking the whole of the water-races constructed by the Government, and controlled by it, it will be found that although the capital invested is considerable, these works have been the means of finding profitable employment for a large population, and, with the exception of

the Mount Ida Water-race, which has been worked at a loss, the net profits on the working of the other races has been £50,939; while they have been the means of gold being obtained to the value of about £1,170,027, affording employment for an average of 537 miners.

PROSPECTING.

In order to develop the mineral wealth of the colony, systematic prospecting operations have to be carried on, and I propose to amend the mining regulations, so as to give more encouragement to miners' associations and mining companies to carry on a system of prospecting in the superficial deposits, in the alluvial drifts, quartz-reefs, and in testing the lodes at the deep levels.

Encouragement should also be given to prospect ground with diamond drills, as in many instances these drills can be used very advantageously in prospecting deep leads and lodes: in underground workings, where the latter are lying at a high inclination, horizontal bores can be, in many instances, put in to test the ground far cheaper than by driving, especially where there is hard rock to be gone through.

Further encouragement should also be given towards the development of new metaliferous or diamondiferous discoveries, in the direction of offering larger rewards where such discoveries are made a certain number of miles distant from any known workings.

It is only in very few instances that individual miners can afford to carry on prospecting for any length of time, and, accordingly, the miners' associations in several mining districts are taking more interest in trying to open up new ground, as they are specially interested in the districts they reside in, and if any new discovery is made some of their number would receive a direct benefit from it. There are large areas of auriferous country where no prospecting has yet been done, both in the North and Middle Islands, and it is only by complete organization and systematic operations that prospecting can be carried on successfully. Everyone engaged in this work must have an interest in the undertaking, the men actually engaged in the work giving a portion of their wages towards a general fund, the miners' associations in their respective districts contributing a certain amount, and these moneys to be supplemented by Government out of funds appropriated by Parliament for that purpose, as well as by contributions from the local bodies, which receive the goldfields revenue. It is only by holding out good inducements that the necessary funds can be raised to carry on works of this character; and as the lodes on the upper levels in the various quartz-mining claims now worked are gradually getting taken out, a special effort should be made to have the deeper ground tested before the mining population leaves the locality.

GEOLOGICAL EXPLORATIONS.

Geological explorations were made last year of the northern portion of Westland by Mr. McKay, Mining Geologist, which have resulted in discovering a large belt of cupriferous schist on the range facing the Arahura River, about twelve miles through the first gorge. Some specimens from this belt were analysed at the Colonial Laboratory, and were found to contain 10 per cent. of copper.

The auriferous drifts on the low-lying lands from Greenstone to Ross have also been carefully examined, and, from the evidence obtained, it is shown that there is a large area covered with these drifts where gold is likely to be found in payable quantities. A detailed account of the Mining Geologist's explorations will be found embodied in the Goldfields Report. A geological map of this portion of the district, and several interesting photographs of mining claims, showing the method of working the ground, are also published.

MINING MACHINERY.

As improvements are constantly being made in mining machinery, and appliances for the reduction and treatment of auriferous and argentiferous ores, I have directed that full publicity should be given to any new methods likely to reduce the cost of working the mines and extracting the precious metals as may from time to time be brought under the notice of the department, as it is by these improvements we may hope to work our low-grade ores more economically. Several descriptions of mining machinery and processes for the treatment of ores, accompanied with plans giving full details, will be found in the report of the Inspecting Engineer.

SCHOOLS OF MINES.

There seems to be an increasing interest taken in our Schools of Mines. Miners are now fully alive to the necessity of having a good technical education, and, indeed, there is no profession or avocation which requires a greater amount of technical knowledge than that of mining. Those actively engaged in this industry should have a thorough knowledge of the chemistry of metals and minerals, be well up in metallurgy, mineralogy, geology; as well as having a knowledge of the strength of materials, the composition of gases and explosives, and also underground surveying. To follow the calling of a miner, and to be able to carry on large operations, it requires not only years of study, but much hard labour in the underground workings, to acquire the necessary knowledge to be able to cope with all the difficulties which occur in the management of mines. The Schools of Mines are supplying a want which a few years ago was not felt by individual miners; but, now that the advantages of a good technical education are being realised, miners see the necessity for it, and, facilities for its acquisition being available, they are anxious to acquire it.

At the Thames, men who work in the mines during the day attend the school at night, and the progress they make is really astonishing. Men who, a few years ago, could hardly write, are now well up in mathematics, and can undertake the underground surveys of any mine. The average number of regular students at the Thames School last year was fifty-two, while the average number attending Saturday lectures was fifty-three. Twenty-one parcels of ore, varying from 70lb. to 2,900lb. each, were tested for different individuals at the testing plant attached to the school. The work in connection with these tests was all done by the students.

At Reefton, the Director and Instructor of the School of Mines held classes in different parts of the district last year, and, although there is not so good an attendance at the principal school at Reefton as there is at the Thames School, the progress made by the students has been very satisfactory.

At the request of the Committee of the Thames School, I caused examination-papers to be prepared by examiners having no connection with these Schools of Mines, and the result of the last year's examination shows that the teachers have been very successful in their labours.

As there are several minor schools on the West Coast where no regular teacher attends to give instruction, I have engaged Mr. Thompson, the Resident Engineer at Greymouth, who was formerly lecturer on applied mechanics at the Otago University—and who holds high testimonials as to his knowledge in chemistry, mineralogy, and metallurgy—to deliver lectures on mining subjects at the several Schools of Mines in this district.

The report of the Directors of the School of Mines attached to the Otago University, Dunedin, shows that far more interest is taken in this school than there was a few years ago. Before the different Schools of Mines were established there were only two or three students attending this school, and last year there were twenty-two students, showing that the interest taken in the various mining centres where Schools of Mines have been established has given an impetus to students to acquire a knowledge of subjects connected with mining. Notwithstanding that the Government have paid £3,750 towards this school out of votes appropriated to Schools of Mines, the department has not received any report on the progress made until last year, when a report published in one of the local newspapers came to hand. During last year the total expenditure on the Schools of Mines amounted to £1,232.

SUMMARY OF EXPENDITURE ON WORKS.

The total value of works constructed by the Mines Department since votes for that purpose have been under the control of the Minister in charge, is as follows: Roads and tracks, £260,214; water-races, £51,576; drainage channels, £21,401; prospecting works, £50,907; wharves, £436; diamond and other drills, £4,448; assistance towards the treatment of ores, £1,342; artesian well boring, £550; Schools of Mines, inclusive of £3,750 paid to the University of Otago, £15,590: making a total of £406,464, out of which £296,348 was paid by Government; and the liabilities on works in progress at the end of March last were £16,917. A detailed statement of the cost and expenditure on these works will be found in the tables annexed to the report of the Inspecting Engineer on the goldfields of the colony.

MINING LEGISLATION.

It has been found desirable to deal with the question of mining under lands which have been alienated from the Crown. A Bill has been prepared giving facilities for mining underneath the surface of private lands, on certain conditions as to depth at which workings may be carried on, *et cetera*. This Bill has been drafted on the lines of a similar measure which has passed the Queensland Legislature, and I have no doubt will be found to be useful in this colony.

It is also proposed to amend the Mining Act so as to give greater encouragement to prospect the deep levels, construct large water supplies, and thus further develop the mining industry. For these purposes it is proposed to take power to advance loans from time to time to mine prospectors and others to the extent of one-fourth of the value of the prospecting work done, such moneys to be refunded out of the first profits derived from the mine, together with interest at the rate of 5 per cent. per annum, a first lien being taken on the property as security for repayment.

A question having been raised as to the validity of titles to lands held as licensed holdings and special claims, and which are severed by rivers, streams, watercourses, and roads, it is proposed to take power to validate all titles heretofore issued for lands so severed. The regulations will also be amended in a similar direction.

It is also proposed to adopt a provision embodied in the Victorian Mines Act, which requires that all safety-cages shall be examined and passed by an Inspector of Mines before they are used. This will prove an additional safeguard tending to prevent similar accidents to that which recently occurred at the Thames.

It has been found that the rates allowed by the existing regulations in aid of prospecting are inadequate. It is proposed to amend them in this respect, and to enlarge their scope and operations to other metals and minerals.

CONCLUSION.

In concluding my remarks on the mining industry, I may be permitted to state that the gold-miner has, in the past, been the pioneer of the colony, and the same can be said of him even at the present time. His avocation leads him to search for golden treasures in the back-wilds and portions of the country where few had travelled before him. Full of hope he trudges along, pitches his tent, prospects here and there, lonely and companionless, supported by hope and the expectation that some day he will find sufficient wealth in the bowels of the earth to repay him for all the labour and hardship he has undergone; and being, as it were, the forerunner of civilisation, he is entitled to some consideration from the colony by way of assistance in opening up the back-lands, and developing the mineral wealth, thereby enhancing the value of property belonging to the Crown. The expenditure of money is necessarily larger in the construction of roads and tracks where new country has to be opened out; as generally where gold is most abundant the country is broken and mountainous, requiring a large expenditure in giving access to new mines which are continually being opened up. The local authorities in the mining districts, owing to there being a limited amount of rateable property, are not in a position to make new roads and tracks, and therefore require exceptional consideration. It must therefore be borne in mind that, although the expenditure on roads in goldfield districts tending to develop mining is considerable, further assistance is still required to prove the auriferous or metalliferous nature of the ground, thereby providing profitable employment for the labouring classes. And although a great deal of our rough mountain-land may be at present considered almost valueless, even for pastoral purposes, the time may come when this land will become valuable mining property, affording a good livelihood to numbers of people; and places where, at the present time, no habitation is to be seen, may yet become stirring, populous districts. Every encouragement should, therefore, be given to further the mining industry.

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, 1891 and 1892; as well as the TOTAL VALUE since January, 1853.

Name of Metal or Mineral.	For Year ending the 31st December, 1892.		For Year ending the 31st December, 1891.		Total from the 1st January, 1853, to the 31st December, 1892.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Precious metals—	Oz.	£	Oz.	£	Oz.	£
Gold	238,079	954,744	251,996	1,007,488	12,308,296	48,387,861
Silver	22,053	3,996	28,023	5,151	604,686	144,144
Total gold and silver	260,132	958,740	280,019	1,012,639	12,912,982	48,532,005
Mineral produce, including kauri-gum—	Tons.	£	Tons.	£	Tons.	£
Copper-ore .. .. .	..	..	$\frac{3}{20}$	4	$1,394\frac{3}{20}$	17,866
Chrome-ore .. .. .	..	..	..	..	5,666	37,367
Antimony-ore	364	4,900	413	4,950	3,150	46,040
Manganese-ore	521	1,239	1,153	2,634	$16,977\frac{1}{2}$	55,164
Hæmatite-ore .. .. .	..	..	$\frac{1}{20}$	1	$521\frac{1}{20}$	226
Mixed minerals	84	631	$2\frac{1}{20}$	6	14,152	69,672
Coal exported	78,911	80,225	91,664	91,173	589,275	587,183
Coke exported	4,306	5,691	2,544	3,658	15,792	23,590
Coal, output of mines in colony	594,404	297,202	577,130	288,565	7,062,585	3,531,202
Kauri-gum	8,705	517,678	8,388	437,056	$151,723\frac{1}{2}$	6,349,421
Total quantity and value of minerals	687,295	907,566	$681,294\frac{4}{20}$	828,047	$7,860,767\frac{1}{2}$	10,717,731
Value of gold and silver, as above .. .. .	..	958,740	..	1,012,639	..	48,532,005
Total value of minerals produced, including gold and silver .. .. .	..	1,866,306	..	1,840,686	..	59,249,736

No. 2.

TABLE showing the QUANTITY and VALUE of GOLD ENTERED for EXPORTATION from NEW ZEALAND for the Years ending the 31st March, 1892 and 1893, and the TOTAL QUANTITY and VALUE from 1857 to the 31st March, 1893.

District and County or Borough.	Year ending 31st March, 1893.		Year ending 31st March, 1892.		Increase or Decrease for Year ending 31st March, 1893.		Total Quantity and Value from January, 1857, to 31st March, 1893.	
	Quantity.	Value.	Quantity.	Value.	Increase.	Decrease.		
AUCKLAND—	Oz.	£	Oz.	£	Oz.	Oz.	Oz.	£
County of Coromandel ..	6,647	26,549	8,422	33,573	..	1,775	..	..
County of Thames ..	13,974	55,800	15,681	62,386	..	1,707	..	..
County of Ohinemuri ..	14,017	57,953	7,331	30,563	6,686	..	..	..
County of Piako ..	503	2,014	904	3,551	..	401	..	..
County of Whangarei ..	5	15	1	4	4	..	..	..
Borough of Thames ..	5,906	23,518	8,186	32,683	..	2,280	..	..
Te Aroha Town District ..	..	..	..	..	..	..	..	..
	41,052	165,849	40,525	162,760	527	..	1,737,525	6,516,533
WELLINGTON .. ..	..	..	..	..	..	..	188	706
MARLBOROUGH—								
County of Marlborough ..	3,055	12,083	7,020	28,026	..	3,965	..	..
Blenheim Borough ..	..	..	..	..	..	..	..	..
Picton Borough ..	..	..	..	..	..	..	..	..
	3,055	12,083	7,020	28,026	..	3,965	76,856	298,618
NELSON—								
County of Waimea ..	60	230	1,210	4,648	..	1,150	..	..
County of Collingwood ..	2,732	10,379	4,091	15,544	..	1,359	..	..
	2,792	10,609	5,301	20,192	..	2,509	242,803	961,402
WEST COAST—								
County of Buller ..	15,832	63,420	14,148	56,540	1,684	..	..	..
County of Inangahua ..	24,662	98,613	38,201	152,856	..	13,539	..	..
County of Grey ..	24,545	98,141	25,775	103,135	..	1,230	..	..
County of Westland ..	30,813	123,312	29,413	117,655	1,400	..	..	..
Brunnerton Borough ..	..	..	4	16	..	4	..	..
Kumara Borough ..	1,078	4,211	4,224	16,902	..	3,146	..	..
Hokitika Borough ..	916	3,665	2,122	8,490	..	1,206	..	..
Ross Borough ..	3,790	15,161	4,271	17,078	..	481	..	..
Reefton Borough ..	..	..	..	..	..	..	..	..
	101,636	406,523	118,158	472,672	..	16,522	5,333,135	21,186,097
CANTERBURY .. ..	..	..	..	..	..	..	48	192
OTAGO—								
County of Taieri ..	1,217	4,689	917	3,673	300	..	..	..
County of Tuapeka ..	21,681	87,848	29,557	118,706	..	7,876	..	..
County of Vincent ..	16,125	64,934	22,689	91,137	..	6,564	..	..
County of Maniototo ..	10,779	43,528	12,276	49,380	..	1,497	..	..
County of Waihemo ..	2,607	10,146	3,535	13,924	..	928	..	..
County of Waikouaiti ..	665	2,452	1,541	6,092	..	876	..	..
County of Waitaki ..	1,796	7,355	2,553	10,340	..	757	..	..
County of Bruce ..	..	..	..	..	..	..	..	..
County of Lake ..	14,977	59,943	19,491	78,118	..	4,514	..	..
County of Wallace ..	5,611	22,746	6,829	27,537	..	1,218	..	..
County of Fiord ..	632	2,570	655	2,641	..	23	..	..
County of Southland ..	3,999	16,052	5,321	21,307	..	1,322	..	..
County of Stewart Island ..	15	60	..	..	15	..	..	..
County of Clutha ..	..	..	8	32	..	8	..	..
Unknown ..	20	80	65	253	..	45	..	..
Borough of Alexandra ..	..	..	94	382	..	94	..	..
Dunedin ..	..	..	..	..	..	..	..	..
	80,124	322,403	105,531	423,527	..	25,407	4,969,687	19,633,110
Totals	228,659	917,467	276,535	1,107,177	..	47,876	12,360,242	48,596,658

No. 3.

TOTAL QUANTITY and VALUE OF GOLD ENTERED for DUTY for EXPORTATION from the 1st January, 1857, to the 31st December, 1892. (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 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	..	..	..	..	..	..	..	..	..	..	18,584	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	1,239	4,098	10,422	40,386	..	..	..	..	187,696	727,321	..	..	..	..	410,862	1,591,869
1863	4,483	13,853	9,580	37,120	..	..	..	..	399,201	1,546,905	..	..	..	..	614,387	2,380,750
1864	3,448	10,552	14,410	55,841	..	..	..	..	614,387	2,380,750	..	..	..	..	628,450	2,431,723
1865	5,449	17,096	12,137	47,080	24,838	95,231	7,932	..	436,012	1,689,653	..	..	..	..	480,171	1,856,837
1866	5,814	17,463	7,650	29,643	..	..	..	..	259,139	1,004,163	..	..	..	..	574,574	2,226,474
1867	6,637	18,277	9,123	35,918	..	..	..	..	168,871	654,647	..	..	..	..	735,376	2,844,517
1868	53,660	168,874	5,999	38,396	289,897	1,463	552,572	1,127,370	623,815	2,484,647	..	..	..	..	686,905	2,698,863
1869	132,451	434,687	10,631	42,524	501	1,818	511,974	2,018,874	158,670	623,815	..	..	..	..	614,281	2,504,326
1870	35,534	319,146	12,244	48,692	404	1,616	2,664	1,608,844	153,364	686,596	..	..	..	..	544,880	2,157,585
1871	330,326	1,188,708	10,014	40,056	1,867	7,408	280,068	1,121,525	165,152	660,694	80	190	..	..	730,029	2,787,520
1872	104,890	369,341	8,175	32,700	2,057	7,468	232,882	931,528	154,940	619,760	..	..	..	..	445,370	1,731,261
1873	119,449	437,123	13,697	54,786	1,274	5,050	188,501	756,442	182,416	734,024	..	..	..	..	505,837	1,987,425
1874	76,910	305,068	5,642	22,158	1,198	4,748	157,531	631,203	135,107	542,154	..	..	..	..	376,888	1,505,331
1875	69,485	262,156	4,577	17,866	1,159	4,636	158,678	635,480	121,423	487,632	..	..	..	..	355,322	1,407,770
1876	56,957	224,905	14,018	55,862	450	1,796	133,014	531,274	118,477	473,491	..	..	..	..	322,016	1,284,328
1877	99,081	403,627	5,367	21,092	870	3,197	153,193	612,923	113,169	455,341	..	..	..	..	371,685	1,496,080
1878	55,982	220,454	4,463	17,223	404	1,617	144,634	578,508	105,003	422,277	..	..	..	..	310,486	1,240,079
1879	37,901	154,295	2,993	11,424	879	3,460	142,822	571,061	102,869	407,868	..	..	..	..	287,464	1,148,108
1880	42,720	176,416	3,222	12,223	1,550	5,650	144,090	575,258	113,666	457,705	..	..	..	..	305,248	1,227,253
1881	35,516	141,326	3,453	13,039	1,378	4,531	127,544	509,971	102,670	411,923	..	..	..	..	270,561	1,080,790
1882	33,059	131,007	3,289	12,494	1,332	5,400	130,048	519,978	83,446	338,804	..	..	..	..	251,204	1,002,720
1883	41,291	163,618	2,064	7,724	636	2,524	116,905	467,152	87,478	352,334	..	..	..	..	248,374	993,352
1884	36,087	143,564	2,159	8,002	1,079	4,306	111,686	446,517	78,810	318,932	101	380	..	..	227,079	921,797
1885	42,989	170,416	2,798	10,337	540	2,160	117,861	471,325	73,183	294,378	..	..	..	..	237,371	948,615
1886	32,271	128,140	2,582	9,979	404	1,451	112,671	446,287	79,104	317,543	..	..	..	..	227,079	903,569
1887	30,697	121,564	2,914	10,829	1,041	3,759	98,774	395,430	70,443	279,518	..	..	..	..	203,869	811,100
1888	35,223	139,556	3,027	11,820	699	2,547	100,139	400,451	62,107	247,142	..	..	..	..	201,219	801,066
1889	28,655	113,191	3,252	12,310	5,189	20,167	101,686	406,451	64,419	256,430	..	..	..	..	203,211	808,549
1890	31,745	123,760	2,856	11,049	6,073	24,285	89,096	356,368	63,410	255,926	..	..	..	..	193,193	778,438
1891	45,392	181,185	4,445	16,896	5,649	22,576	109,268	437,126	87,209	349,573	..	..	..	..	251,996	1,007,488
1892	45,555	183,655	2,535	9,604	3,898	15,429	103,106	412,383	82,333	333,467	..	..	..	..	238,079	954,744
Totals ..	1,730,304	6,487,313	241,610	956,781	76,323	296,514	5,305,623	21,076,049	4,954,110	19,569,968	273	1,044	48	192	12,308,296	48,387,861

No. 4.

TABLE showing the TOTAL QUANTITY of MINERAL ORES (the Product of Mines other than Gold), COAL, COKE, and KAURI-GUM, EXPORTED from the Colony up to 31st December, 1892.

Year.	Silver.		Copper-ore.		Chrome-ore.		Antimony-ore.		Manganese-ore.		Hematite-ore.		Mixed Mineral Ore.		Coal.		Coke.		Kauri-gum.		Totals.	
	Oz.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Ounces.	Tons.	Value.	Tons.	Value.
1853	..	£	..	£	..	£	..	£	..	£	..	£	..	£	..	£	..	£	830	15,972	830	15,972
1854	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,661	28,864	1,661	28,864
1855	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	355	4,514	355	4,514
1856	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,440	18,591	1,440	18,591
1857	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,522	35,251	2,522	35,251
1858	..	..	351	5,000	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,811	20,037	2,167	25,066
1859	..	..	245	2,605	8	120	..	..	..	..	..	..	..	..	..	..	..	..	2,010	20,776	2,263	23,501
1860	..	..	137	1,590	116	1,440	..	..	..	..	..	..	..	..	..	..	..	..	1,046	9,851	1,300	12,883
1861	..	..	110	1,300	52	520	..	..	..	..	..	..	..	..	..	..	..	..	1,103	11,107	1,018	11,708
1862	..	..	51	1,024	3,843	24,719	..	..	..	..	..	..	..	..	..	..	..	..	1,400	27,026	4,997	36,850
1863	..	..	..	..	595	4,818	..	..	..	..	..	..	..	..	..	..	..	..	2,228	60,590	2,996	65,500
1864	..	..	..	..	768	4,910	..	..	..	..	..	..	..	..	..	..	..	..	1,867	46,060	1,867	46,060
1865	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,535	70,572	3,077	72,287
1866	..	..	..	..	281	1,315	..	..	..	..	..	..	..	..	..	..	..	..	2,685	77,491	3,904	81,419
1867	..	..	246	2,700	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,690	72,493	3,801	74,680
1868	..	..	84	977	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,850	111,307	3,600	115,100
1869	11,063	2,993	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,391	175,074	6,070	188,082
1870	37,123	11,380	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,054	167,958	6,750	192,715
1871	80,272	23,145	7	120	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,811	154,167	5,822	164,982
1872	37,064	9,910	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,834	85,816	3,558	96,321
1873	26,187	9,850	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,569	79,986	4,119	91,957
1874	40,566	10,880	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,231	138,523	5,631	149,272
1875	29,085	7,569	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,888	109,234	7,975	129,372
1876	12,683	3,171	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,633	118,848	8,682	137,711
1877	33,893	7,556	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,445	132,975	12,820	154,687
1878	23,019	5,755	6	115	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,229	147,535	12,722	168,001
1879	20,645	4,512	55	1,105	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,725	242,817	20,005	275,799
1880	20,005	4,500	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,461	253,788	15,438	271,633
1881	18,885	4,236	5	86	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,533	260,369	14,019	281,016
1882	5,694	1,286	9	41	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,518	336,606	16,826	358,086
1883	16,826	3,785	46	678	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,893	342,151	24,914	358,024
1884	24,914	5,125	20	106	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,875	209,762	16,634	236,396
1885	16,624	3,169	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,875	209,762	16,634	236,396
1886	12,108	2,946	20	390	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,920	257,658	12,108	279,766
1887	20,809	3,453	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,791	362,449	20,809	318,788
1888	24,403	4,043	2	75	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,482	380,933	59,145	459,261
1889	32,637	6,162	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,519	329,590	24,105	439,260
1890	28,023	5,151	0 1/2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,438	378,563	32,637	467,465
1891	22,053	3,986	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,388	437,056	28,023	544,633
1892	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,705	517,678	22,053	614,360
Totals	604,686	144,144	1,394 1/2	17,866	5,666	37,367	3,150	46,040	16,977 1/2	55,164	226	14,142	69,672	589,275	587,183	15,792	23,590	151,723 1/2	6,349	421,604	686	7,330,673

NOTE.—Silver-ore, 37 tons, £1,235.

No. 5.

RETURN showing the QUANTITY and VALUE of COALS IMPORTED into NEW ZEALAND during the Quarter ended the 31st March, 1893.

Country whence Imported.						Quantity.	Value.
						Tons.	£
United Kingdom	..	..	..	..	..	667	721
New South Wales	..	..	..	..	..	26,546	25,753
Totals						27,213	26,474

No. 6.

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

Year.	Coal raised in the Colony.		Coal imported.		
	Tons.	Yearly Increase or Decrease.	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	-	880
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

No. 7.

TABLE showing the OUTPUT of COAL from the various Mining Districts, and the Comparative INCREASE and DECREASE, for the Years 1891 and 1892, 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, 1892.
	1891.	1892.			
	Tons.	Tons.		Tons.	Tons.
Kawakawa	28,254	18,515	-	9,739	787,761
Whangarei, Kamo, and Whauwhau	16,228	9,924	-	6,304	275,784
Waikato	55,869	57,894	+	2,025	654,423
Mokau	3,713	1,823	-	1,890	6,724
Pelorus	..	..	..	..	711
West Wanganui	3,328	1,981	-	1,347	42,095
Westport	206,184	208,076	+	1,892	1,399,943
Reefton	4,556	4,368	-	188	52,108
Greymouth	145,351	178,244	+	32,893	1,700,274
Malvern	14,775	11,101	-	3,674	285,429
Timaru	1,488	1,446	-	42	6,888
Otago	164,870	157,610	-	7,260	2,376,592
Southland	24,178	22,333	-	1,845	216,569
Totals	668,794	673,315	+	4,521	7,805,301

No. 8.

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

Name of Coal.	Output of Coal.		Plus or Minus.	Increase or Decrease.	Approximate Total Output of Coal up to the 31st December, 1892.
	1891.	1892.			
	Tons.	Tons.		Tons.	Tons.
Bituminous	387,839	406,828	+	18,989	3,938,577
Pitch	96,979	89,549	-	7,430	1,202,514
Brown	161,904	149,460	-	12,444	2,424,824
Lignite	22,072	27,478	+	5,406	239,386
Totals	668,794	673,315	+	4,521	7,805,301

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 1892.	Average Output per Man.
113	1 to 4 men in each	194	Tons. 59,714	Tons. 307
18	5 to 10 "	122	41,184	337
4	11 to 20 "	71	21,761	306
13	21 men and upwards	1,294	550,656	425
148		1,681	673,315	400

No. 10.

RETURN showing the QUANTITY and VALUE of COAL IMPORTED INTO and EXPORTED FROM NEW ZEALAND during the Year ended the 31st December, 1892.

Imported.			Exported.		
Countries whence imported.	Quantity.	Value.	Countries to which exported.	Quantity.	Value.
	Tons.	£		Tons.	£
Victoria	249	205	United Kingdom	56,245	61,369
New South Wales	124,554	115,724	New South Wales	7,461	7,448
Queensland	500	512	South Australia	3,772	1,718
South Australia	150	112	Western Australia	320	190
			Tasmania	90	48
			Norfolk Island	59	53
			Fiji Islands	5,323	4,413
			Bengal	670	670
			U.S. America, West Coast..	237	294
			Chili	110	149
			Peru	165	190
			South Sea Islands	9,462	10,092
Totals	125,453	116,553	Totals	84,414	86,634

NOTE.—Foreign coal: Included in exportation to—United Kingdom, 88 tons, value £79; New South Wales, 1,934 tons, value £2,329; Peru, 165 tons, value £190; South Sea Islands, 3,316 tons, value £3,811. The remainder is New Zealand produce.

W. T. GLASGOW,
Secretary and Inspector.

Department of Trade and Customs, Wellington, 1st June, 1893.

No. 11.

NUMBER OF MINERS EMPLOYED during the Years ending 31st March, 1892 and 1893.

Mining District.	Alluvial Miners.		Quartz-miners.		Totals.		Grand Total.	
	European.	Chinese.	European.	Chinese.	European.	Chinese.	1892.	1893.
AUCKLAND—								
North Hauraki and Coromandel ..	..	..	287	..	287	..	275	287
Thames .. .. .	..	..	676	..	676	..	724	676
Ohinemuri .. .. .	..	..	420	..	420	..	328	420
Te Aroha .. .. .	..	..	23	..	23	..	30	23
Puhipuhi .. .. .	..	..	10	..	10	..	50	10
	..	..	1,416	..	1,416	..	1,417	1,416
MARLBOROUGH—								
Pelorus	10	..	..	..	..	..	301	10
Wairau	15	..	..	..	..	..	60	15
Cullen's Creek	130	..	..	..	..	..	..	130
Waikakaho	30	..	10	..	..	..	..	40
Wakamarina	40	..	..	..	..	..	..	40
Kaituna and Duncan's Valley ..	8	..	..	..	..	..	..	8
	233	..	10	..	243	..	361	243
NELSON—								
Baton .. .. .	..	..	..	..	..	..	12	..
Wangapeka	32	..	..	..	32	..	20	32
Sherry and Tadmor .. .. .	..	..	..	..	..	..	7	..
Collingwood, Takaka, and West Wanganui	143	4	15	..	158	4	172	162
Motueka	8	..	..	..	8	..	12	8
Inangahua	100	220	320	..	420	220	803	640
Ahaura	450	211	9	..	459	211	630	670
Charleston	220	..	..	..	220	..	250	220
Westport, including Addison's, Northern Terraces, Waimanga- roa, North Beach, Mokihinui, Karamea, and Lower Buller Valley	245	..	..	..	245	..	240	245
Lyell	45	7	74	..	119	7	133	126
Murchison	130	48	..	..	130	48	190	178
Owen .. .. .	..	..	..	..	..	..	..	..
	1,373	490	418	..	1,791	490	2,469	2,281
WESTLAND—								
Ross	150	19	6	..	156	19	490	175
Stafford and Goldsborough ..	420	150	..	..	420	150	470	570
Hokitika and Kanieri	400	90	..	..	400	90	490	490
Kumara	500	100	..	..	500	100	600	600
Greymouth	900	300	..	..	900	300	1,225	1,200
Arnold .. .. .	..	..	..	..	..	..	..	..
Okarito	90	1	..	..	90	1	104	91
Jackson's Bay	40	..	..	..	40	..	35	40
	2,500	660	6	..	2,506	660	3,414	3,166
OTAGO—								
Hindon	30	5	32	..	62	5	77	67
Tuapeka	410	342	15	..	425	342	840	767
Clyde and Alexandra	250	110	17	..	267	110	244	377
Cromwell	300	165	15	..	315	165	470	480
Roxburgh	345	68	..	..	345	68	410	413
Black's	138	40	5	..	143	40	218	183
Tapanui	40	40	..	..	40	40	215	80
Waikaia, Upper Waikaia, Nokomai	78	111	..	..	78	111	60	189
Wyndham, Fortrose, and Waikawa	38	1	..	..	38	1	90	39
Longwood .. .. .	..	..	..	..	..	..	..	..
Orepuki	260	204	156	..	416	204	435	620
Roundhill and Wilson's River	..	..	..	..	..	..	..	..
Wakatipu Goldfields—Arrow, Macetown, Cardrona, Kawarau, Bracken's, and Motatapu	325	50	75	..	400	50	455	450
Queenstown	350	50	100	..	450	50	575	500
Naseby, Kyeburn, Clarke's, and Mount Burster	..	..	..	..	..	..	..	..
Hamilton, Sowburn, &c.	..	..	..	..	..	..	..	..
Hyde and Fullerton's	500	320	30	..	530	320	904	850
Serpentine .. .. .	..	..	..	..	..	..	..	..
Macrae's, Strath-Taieri, Shag Valley, Nenthorn, St. Bathans, and Ida Valley	..	..	..	..	..	..	..	..
Maerewhenua	76	..	..	..	76	..	70	76
	3,140	1,506	445	..	3,585	1,506	5,063	5,091
SUMMARY.								
AUCKLAND .. .. .	..	..	1,416	..	1,416	..	1,417	1,416
MARLBOROUGH	233	..	10	..	243	..	361	243
NELSON	1,373	490	418	..	1,791	490	2,469	2,281
WESTLAND	2,500	660	6	..	2,506	660	3,414	3,166
OTAGO	3,140	1,506	445	..	3,585	1,506	5,063	5,091
Totals	7,246	2,656	2,295	..	9,541	2,656	12,724	12,197

Approximate Cost of Paper.—Preparation, not given; printing (2,375 copies), £27 10s.

By Authority: SAMUEL COSTALL, Government Printer, Wellington.—1893.

