

1882.
NEW ZEALAND.

CONTROL AND INSPECTION OF MINES

(REPORT ON).

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

To the Honorable WILLIAM ROLLESTON, Minister of Mines.

SIR,—

Mines Department, Wellington, 10th June, 1882.

I have the honor to forward for your information the following general report (being the fourth since the Act was brought into operation) upon the official control and inspection of mines under "The Regulation of Mines Act, 1874," showing what has been done in accordance with the Act since my last general report of the 20th of June, 1881; with an appendix containing the reports of inspections of mines during the year, and statistical tables giving particulars in detail of the coal mines, and of accidents in them, and showing the imports and exports of coal.

I have, &c.,

OLIVER WAKEFIELD,

Under Secretary for Mines.

REPORT.

INSPECTIONS AND THEIR EFFECT, REPORTS, &c., WEST COAST QUARTZ MINES.

THE past year's transactions in this branch of the Mines Department have again been progressive, and, judging by results, the object of bringing the Regulation of Mines Act into force appears to a large extent to have been attained, and it is to be hoped that increased experience and knowledge of the mines, and of all matters affecting their safe working, and the removal of causes of danger, may lead to a continuation of the success which has so far attended the efforts of this department, assisted in many cases by the hearty co-operation of owners and officers of mines, to secure, as far as possible, immunity from accidents in the prosecution of an industry surrounded by a variety of peculiar dangers.

All the coal mines of any importance have been inspected during the year, and those demanding special attention have been frequently visited by Messrs. McLaren and Binns, who have reported all circumstances requiring particular action, and whose interim and annual reports will be found in the appendix. Mr. Cox has also recently made an inspection of all the principal coal mines, partly in the course of geological business, and his reports of these inspections are included with the others.

The condition of the Brunner Coal Mine, with regard to pillar-working, has recently claimed special attention. The question of dealing with this matter under "The Westland and Nelson Coal Fields Administration Act, 1877," had long before been the subject of correspondence with the Commissioner of Crown Lands at Nelson; and, as notices had been given by both Messrs. Cox and Binns, and the latter had exhausted all ordinary means of bringing about a cessation of indiscriminate pillar-working in this mine, without success, it was considered expedient, in order to deal effectually with the matter, to appoint him an inspector under the Act above referred to, and this was accordingly carried out upon the recommendation of the Nelson Land Board, in February last, Mr. Binns being also appointed an inspector under the lease of the Brunner Mine. These special powers had the desired effect, and, after somewhat protracted negotiation, the pillar-working ceased on the 10th of March, and it has not been continued since.

It will be seen that the reports of the Shag Point Mine (the condition of which was last year the subject of much consideration) are much more satisfactory this year; and that the Kaitangata Mine, in which the great explosion occurred shortly before the Act was brought into operation, is now reported to be most carefully managed, and in a satisfactory condition, every possible precaution apparently being taken to avoid danger, especially in view of the fact that the presence of gas is still occasionally observed in this mine.

During the year, in consequence of their increasing importance, inspection under the Regulation of Mines Act has been extended to the principal quartz mines at Reefton, Boatman's, and Lyell, copies of the Act having been forwarded from this office to the managers and legal managers with a notification of intention to bring the mines under the operation of the Act after a visit from an inspector. This was followed by an inspection of these mines (ten in all) by Mr. Binns, whose report upon this subject is published in the appendix. These are the preliminary steps which have been taken to place these mines under official control and inspection, and the process will be continued with due consideration for the managers' presumed recent knowledge of the Act, but with the ultimate object of bringing these mines as effectually under its operation with reference to precautions for safety, as the coal mines. They are the first gold mines which have been brought under this Act; those at the Thames and adjoining districts, as I have stated in former reports, being inspected by Mr. McLaren, under "The Gold Mining Districts Act, 1873," his reports upon these being published with the annual report upon the gold fields.

STATISTICS. D

The development of our coal mines is a subject of deep interest to all who are concerned in the welfare of the country, and it is one which must increase in importance as the manufacturing interest becomes established and extended. In this colony especially, with an almost unlimited supply of splendid raw materials of various kinds at hand waiting to be fabricated into articles of commerce, the coal question demands superlative attention, and it is now engaging the earnest consideration of many persons and bodies, either interested in the progress of manufactures or in the coal trade itself.

The number of coal mines placed upon the list this year shows three less than last year, owing to some small mines in the South Island having been struck off the list, and a lesser number of new ones being noted in their place, and to the Miranda Mine, in the North Island, having ceased working. The number of coal mines now recorded are five in the North and ninety-nine in the South Island; but, as I pointed out in last year's report, many of those in the South Island are upon a very small scale, and are only noted because they are considered of sufficient importance to require inspection, the larger mines in operation included in the list being easily distinguished by the number of men employed, and other particulars given. The usual tabular statement containing these particulars, and the total output from the various coal mines for the year 1881, and also the approximate total output from the coal mines in the colony to the end of 1881, will be found in Return No. 1 following the appendix. The statement furnished

by the Secretary of Customs (Return No. 3) of coal imports and exports for the year 1881 shows that 129,962 tons of coal were imported, and 6,626 tons were exported during the year. The total output for the colony during 1881 is 337,262 tons. If therefore the quantity imported during the same period be added to this, and the export be deducted—assuming, as has been done in former reports, that the remainder has been consumed here—the total consumption in the colony during 1881 would be 460,598 tons, or an increase over the consumption of 1880 of 44,398 tons; the increase of coal won from mines in the colony during 1881 being 37,339 tons over the quantity raised in 1880, or 106,044 tons greater than the product of the mines in 1879, and 175,044 tons more than the yield of 1878; the output having more than doubled in three years, as will be seen from the following table, showing the total production of each of the past four years and the relative quantity imported:—

			Raised in the Colony.		Imported.
1878	...	...	162,218 tons	...	174,148 tons
1879	...	...	231,218 tons	...	158,076 tons
1880	...	...	299,923 tons	...	123,298 tons
1881	...	...	337,262 tons	...	129,962 tons

It will be seen that although the quantity imported this year is rather more than last year, the increase in the quantity raised in the colony is much greater than the increase of that imported, and the quantity produced in the colony would, no doubt, have been considerably greater if the appliances of certain mines and the means of transit from them had been in a more forward state. Increased facilities in both of these respects promise to be effected before long, when I hope that my anticipations of last year, that the development of our mines and the consumption of our own coal will soon be so far extended that importation will no longer be necessary, will be realized.

The increased output this year is principally derived from the Westport Company's Banbury mine, Westport, which yielded 20,000 tons more than last year, owing to the incline tramway works having been put into operation, and from the increased yield of 9,500 tons from the Kaitangata Company's mine. The construction of the incline tramway to the Koranui (Waimangaroa) mine, Westport, is proceeding; and prospecting operations, by deep boring with the diamond drill purchased from the Government, are being carried on at the Bay of Islands Company's mine at Kawakawa. During the year the commencement of a fleet of steamers for the sole purpose of the West Coast coal trade may be said to have been established, and the enterprise of Captain Williams, of Wellington, in purchasing and bringing a steamer from England direct to Westport, loading her there with coal, and bringing the cargo to Wellington, is especially to be commended. It is reported that arrangements are being made for the importation of more steamers of the most suitable class for the West Coast coal trade, and apparently it only remains for these and other arrangements in progress there to be successful to render a very large increase in this trade a certainty. An interesting item in the statistics is the output of 125 tons from the Picton coal mines. If the existence of good coal in quantity could be established there, an immediate trade upon a large scale would be the result, for owing to the facilities for shipping at Picton, and to its situation being central, the importance of a large coal field in that locality can hardly be over-estimated.

ACCIDENTS.

As I have intimated in the first section of this report, the small number of accidents which have taken place during the year is a cause of thankfulness, and I trust that this satisfactory condition of affairs may, to a considerable extent, be referred to the operation of the inspection of the mines, under the Regulation of Mines Act. In Return No. 2, following the appendix, will be found a list of accidents in coal mines during the year ending 31st of December, 1881. This shows that three persons (two of them being trespassers) have been killed, and that injuries to other persons were only of sufficient importance to report in six cases. These casualties all occurred in the South Island mines, those in the North having again been entirely free from accidents, as none from there have been

reported. Of the three fatal accidents, only one—that which happened to William Hewitt, in the Banbury mine, Westport—can be taken into account, for the other two fatalities happened to trespassers in no way connected with the working of the mines, and who had no business in them at all. It is nevertheless much to be regretted that they should have paid the penalty of their lives for their indiscretion, and this should act as a warning to others of the danger of trespassing in coal mines. Mr. Binns made inquiry into both of these accidents, and the graphic description of them given in his appended report of the 31st of January will repay perusal.

Putting these two accidents, therefore, out of the question as affecting the working of the Act, there has been one fatal accident during 1881 for 337,000 tons of coal raised, a rate which I believe will compare favourably with any country in which coal is worked. This fatal accident occurred through a fall of coal, and a full inquiry into the matter is included in Mr. Binns's report, which shows that the accident was not caused by any breach of the Act. And of the six other accidents reported, only one was serious, so that the result of working the coal mines during the year 1881, with reference to accidents, has been much more than ordinarily satisfactory. On the 1st of April last a fatal accident occurred in the Brunner mine to a miner named John Kalka from a fall of coal. As it appeared from the circumstances reported that this accident was caused through neglect to set timber, and the Inspector had shortly before called special attention to the necessity for having timber set wherever required, Mr. Binns laid an information against the under-viewer of the mine for neglecting to see that timber was used where necessary for safety. Owing apparently to insufficient evidence, although it was admitted that there had been neglect of duty or error of judgment somewhere, the case was dismissed; but no doubt the prosecution will nevertheless, as Mr. Binns remarks, have a good effect. A full report of this inquiry will be found in paper No. 4 in the appendix.

CONCLUSION.

Although so few accidents have fortunately occurred during the past year, the efforts of this department to establish a system of precautions against danger from all causes will in no way be relaxed; but mine owners and managers, and all persons connected with the mines, cannot be too often reminded that this system can only be effectually carried out, and immunity from accidents secured, by constant watchfulness and care by themselves in attending to every detail which may be necessary to avoid danger.

It should especially be borne in mind that a very large proportion of accidents and deaths in mines is attributable to apparently slight causes, arising from neglect to take ordinary precautions, and that there are men who will deliberately expose themselves to such dangers, if they are not prevented from doing so by those in authority over them. Fortunately, however, there are very many managers and other persons immediately connected with the working of the mines, who regard the strictest attention to every possible precaution against accidents as a most inviolable duty, and it is in the anxious and constant care of such men that we recognize the most powerful agent against the dangerous element which must always pervade the progress of this industry.

OLIVER WAKEFIELD.

APPENDIX.

No. 1.

INTERIM REPORT UPON INSPECTION OF COAL MINES, NORTH ISLAND DISTRICTS.

Mr. Inspector McLAREN to the UNDER-SECRETARY for MINES.

SIR,—

Inspector of Mines Office, Thames, 3rd December, 1881.

I have the honor to inform you that during last month I visited all the mines within my districts, and beg to forward report on same.

Kawakawa Colliery.—The workings and machinery in connection with this mine I found in good order, and every possible care taken by manager and underviewers for the safety of the mine and men. In some of the levels the timbers were inclined to crush through the “rising” of the floor, but in these cases fresh timbers had been put in. The ventilation is particularly good, and although the workings are now very extensive, yet, even at the furthest headings, the air seemed to be sweet and cool. It is particularly pleasing to note the gradual improvement that the manager, Mr. Moody, has been making in the mode of working and ventilating this mine. He deserves every credit. The new incline has been continued down (on the coal) for a long distance beyond the shaft. As the dip continues very regular, the bottom of incline is now considerably below the level of the bottom of the shaft, necessitating the water being raised to shaft-level by a Tangye pump; cross cuts may now be put in to prove the coal on each side of the incline, but it is not likely the incline itself will be continued any further. The prospecting will be done from the surface by the diamond rock drill which the company have recently purchased from the Government.

Kamo Colliery, Whangarei.—The manager, Mr. George Black, having left to take charge of one of the deep pumping mines (Queen of Beauty) at the Thames, this mine is again under the charge of its previous manager, Mr. George Kerr. In the lower seam there were two different places towards the rise where the slack was particularly inclined to heat. In one of these all the slack had been removed, but in the other about nine or ten tons had been left, this I found heating so violently that at any moment it might be expected to fire. I instantly instructed its removal from the mine, which was done before I left. I tried the slack in other quarters of the mine, but could not find any indications of heating. There is a wonderful difference and improvement in the ventilation and coolness of the whole of this level since my last visit. This is caused by the shaft that was sunk for this purpose (by Mr. Black the late manager) from the top of the hill to the rise of the coal, a depth of from ninety to 100 feet. This being the upcast, causes both entrances to be intakes. It would undoubtedly be a great improvement, and secure the mine from taking fire, if all the slack was removed, but the railway station is built immediately in front of the mine entrance, leaving little or no room for the deposit of slack, while the principal out-put level is too low to allow a bridge being carried across the station. In the upper, or four feet seam, work has been suspended for some months. A small shaft has been sunk in order to give a double opening to ventilate the mine near the entrance, and enable prospecting being carried further in. As the difference of level between the entrance drive and the top of shaft is not great, the results are only in proportion, though, of course, under the circumstances, these were not expected to be great. Before resuming work on this level, it will first be necessary to have an improved mode of ventilation to meet the requirements of the extended operations, and the manager has arranged to have this carried out before starting.

Whau Whau Colliery, Whangarei.—I found this mine in fair working order. The ventilation is also very fair, though there is no great current of air passing through the mine, yet it everywhere appeared to be good, and the mine quite cool. There has been no great out-put since my last visit, but a large amount of prospecting work has been done through very disturbed country.

Taupiri Colliery, Huntly.—The workings in this colliery I found in very fair order. As these are being extended, care is also taken to carry forward the ventilation, by driving the return air-course parallel with the main level, and from time to time cross-cutting between the two: the steam-pipe, down the incline, to supply the Tangye pump, is also now all jacketed, making the downcast quite cool, and greatly improving the ventilation. The men in general seemed to be taking every precaution to secure their own safety; but I found two, working together, who were exceedingly careless in this respect: in fact, acting as rashly as if they wished to commit suicide, by opening and undercutting without leaving a centre pillar, or putting in sprags. I showed them the foolishness of trusting to appearances, and pointed out that, though the place they were working appeared sound, yet, within a few yards (on the opposite side of the main level), the coal was full of sooty backs, and they knew not when they might come near one of these, and a fall take place on them, without the slightest warning. As they were newly out from Home, and had wives and families, the manager thought what I said to them would be sufficient, and would deter them from ever doing the like again. He has promised to keep a sharp look-out on them; and, as a warning to the others, at once dismiss them, should he find them trying it again. Should however any accident of this kind occur, I would be very much inclined to lay the blame on the parsimony of the directors. For, though, Mr. Collins does everything that it is possible for a man to do; yet, when he is manager, oversman, underviewer, clerk, carpenter, bookkeeper, paymaster, surveyor, and draughtsman, and also seeing to orders being sent off, preparing the tickets for the trucks,—in fact, everything rolled into one,—(and this, while the output this year will be nearly double what it was last), it is simply impossible that the underviewing, to look after the safety of the men, can be properly accomplished by him.

Waikato Mine, Huntly.—There has been no great output from this mine, and it had very much the same appearance as it had at my last visit,—everything to be in good order and safe. The ventilation was also good, though not strong.

Bridgewater Colliery.—I did not visit this mine, as I learned the pumping operations had now ceased, and it was full of water.

I have, &c.,

JAMES M. McLAREN,
Inspector of Mines.

The Under-Secretary for Mines, Wellington.

No. 2.

ANNUAL REPORT UPON INSPECTION OF COAL MINES, NORTH ISLAND DISTRICTS.

Mr. Inspector McLAREN to the UNDER-SECRETARY for MINES.

SIR,—

Inspector of Mines Office, Thames, 15th May, 1882.

I have the honor to forward yearly report, with statistics, for coal mines within my districts, Waikato and Bay of Islands, to 31st December, 1881. As I have since visited the mines, I bring it to 31st March, 1882.

It is very satisfactory to be again able to report, as I did last year also, that there has been no accidents, or casualties of any kind, within my districts.

The total output, from all the pits, for the year ending 31st December, 1881, is 5,610 tons 18 cwt. less than the previous year, being 90,784 tons 17 cwt., against 96,345 tons 10 cwt. in 1881; this is partly to be accounted for by the stoppage of one mine—the *Miranda*—but principally on account of the long continued smallpox scare, the Quarantine Regulations preventing the large Sydney steamers from calling at the Bay of Islands, but for this the return would undoubtedly have shown an increase.

Kawakawa Mine, Bay of Islands.—I visited this mine on the 22nd and 24th April, and found everything in very satisfactory order, and apparently every attention paid to the safety of the men by a plentiful and judicious use of timber; the ventilation continues good, but in one or two places, towards the faces, where the men were working, the air seemed sluggish and hot, and it may be necessary soon, if further extension at these places is made, that the air be directed towards them. Outside the ordinary workings, during the year, a large amount of prospecting work has been done, with the view to the further development of the mine, by sinking shafts and continuing the main incline tunnel, which has now been carried down, on the dip of the coal, for a distance of about 800 feet beyond the main, or pumping shaft, a Tangye pump being carried down as the work progressed to lift the water to the pumping shaft. As the distance from the shaft was beginning to make this a very expensive mode of prospecting, it was thought desirable to purchase the Government diamond rock drill then working at Wharangei; this has been placed 800 feet further ahead of the lowest point reached in the dip, or 1,600 feet beyond the shaft. The drill was working splendidly, and when I was there was at a depth of 500 feet from the surface, and in the “Shells,” which in the upper parts of the mine lie immediately over the coal. It is Mr. Moody’s intention, as soon as this bore is completed, to put down another, 800 feet still further ahead, at which place it is estimated, should the dip continue regular, the coal will be reached at from 700 to 800 feet deep.

Kamo Mine, Whangarei.—I visited this mine on the 29th of last month. Since my last visit a considerable amount of work has been done towards the rise, from the upper level of the old or bottom seam. At the head of the boards the air was very hot, and the ventilation insufficient. To cure this, the manager was starting a new and higher level from a point near the entrance of the present one. This, by directing the air, will cure the evil, and also very much shorten the distance for working the trucks. The ventilation of the other parts of the mine was very fair. The plan of the working was also plotted nearly up to date. From the lower or railway level of this seam an incline tunnel is being carried down on the dip of the coal. This, at the date of my visit, had reached a distance of 80 feet from the level, carrying good strong coal all the way. The manager, Mr. Kerr, intends to go a considerable distance further before he opens out. So far as they have gone, they have not had much water to contend with, a hand-pump being sufficient to keep them clear; but the winding engine and boiler are on the ground ready for erection; also the Tangye pump, pipes, &c. No further work has been done on the upper or four-feet seam. The roof of this mine is not good, and the coal is very tender and liable to falls, and every credit is due to the manager in having no casualties, by his plentifully supplying the men with timber, and seeing they kept it “close up.” The output of this mine has increased from 6,382½ tons in 1880 to 10,178 for 1881.

Whau Whau Mine, near Whangarei.—The output from this mine continues from year to year nearly the same, viz., a little over 2,000 tons. The ventilation for natural current was fair, and the mine cool, except in one place to the rise, where it was very hot. They had, however, just broken through for ventilation before I got there (29th April, 1882), and it was rapidly cooling down. The working parts of the mine are in very good order; but it would greatly improve the working of the long tunnel if the owners would spend a few days in levelling up and straightening the rails.

Taupiri Mine, Huntly.—In the old mine the drawing of the pillars has been continued with success. On this work four of the most experienced men in the mine are engaged, and they require to be so, the roof being bad and the ground all “settled” behind them close up to where they are working; but from the skill employed, and the care being taken, I do not apprehend any danger. The new or lower mine I found to be in good working order. The ventilation did not seem to be working so well as it did formerly. This, however, may be accounted for by the pumping-engine at the bottom of the upcast not being working, at the time of my visit (18th April, 1882), which would make a great difference in the up current. Mr. Collins was keeping the survey and plan of the mine well up to date. The output of this mine has increased from 14,817 tons in 1880, to 20,304 tons in 1881.

Waikato Company Mine, Kupakupa, near Huntly.—There has been no great output from this mine during the year (7,860 tons); and as there is a great height of coal, the extent of work done between my visits is hardly noticeable. The plan is not nearly up to date; but this I do not consider requisite, as the whole plan of the mine can easily be grasped without requiring to see it on paper. There is no attempt made to direct the air to the faces; yet, in all parts of the mine (and old workings), it seems to be good, and perfectly cool. This mine is still under the charge of Mr. McGlynn.

As the *Miranda Mine* still remains unworked and deserted, I did not consider it necessary to visit it.

I have, &c.,

JAMES M. McLAREN,
Inspector of Mines.

The Under-Secretary for Mines, Wellington.

No. 3.

ANNUAL REPORT UPON INSPECTION OF COAL MINES, SOUTH ISLAND DISTRICTS.

Mr. Inspector BINNS to the UNDER-SECRETARY for MINES.

SIR,—

Dunedin, 31st January, 1882.

I have the honor, in accordance with Section 40 of "The Regulation of Mines Act, 1874," to make the following Report of my proceedings during the year ending on the 31st of December, 1881, for the information of His Excellency the Governor.

During the year my time has been entirely taken up with departmental work. Your instructions (referred to in former reports), as to the exercise of discretionary power, are still in force, so that of course it cannot be said that the law is observed in its entirety.

Attached are tables of statistics and of accidents. My thanks are due to those managers who have kindly assisted me in the compilation of the former.

The following is a *resumé* of work done in connection with each coal mine during the year. In those cases where a detailed report was made in June, 1881, the particulars are not repeated, and only work done since that date is mentioned. Remarks are also given on those accidents requiring special notice.

PELORUS DISTRICT.

1. *Picton Coal Mine, Picton*, has not been revisited. Mr. Fell informs me that 75 tons is the output.

2. *Picton Coal Mine, Picton*.—This is on Mr. Syms' property, and has contributed 25 tons. Not revisited.

WEST WANGANUI DISTRICT.

3. *Wallsend Colliery, Collingwood*, was reported on in detail in June. The mine has been idle since.

WESTPORT DISTRICT.

4. *Mohikiniui Coal Mine, Mohikiniui*, has not been visited since December, 1880, and is now closed.

5. *Koranui Coal Mine, Westport*.—This is an extension of the old Wellington Coal Company, and the "total output," given in the statistical table, is what was raised from that mine before it was closed. Mr. Ferguson, the manager, informs me that he has six men driving for coal, which he expects to reach about March next.

6. *Westport Coal Company's Banbury Mine, Westport*.—On 15th February a man was killed here by a fall of coal. (See Accident Report.) The ventilation was defective at the time of my visit in February, owing to the absence of artificial means of producing a current of air, which Mr. Denniston, however, proposed to remedy by erecting a fan or furnace. The mine is carefully managed, and the Act kept.

7. *Energetic Coal Mine, Reefton*.—This is one of the small mines which are numerous in this locality. At my visit, a miner named Gough was working under a very dangerous lump of coal, and a keg (24lb) of powder, nearly half full, was in the drive. I warned Gough, and pointed out the powder regulations to the manager.

8. *Golden Treasure Coal Mine, Reefton*, employs only one man. Act disregarded.

9. *Lankey's Gully Coal Mine, Reefton*.—One man working. Act disregarded. The method of procedure, described in a former Report, has been strictly adhered to in this case—"the main object apparently being to get some coal as cheaply as possible, let the roof fall in, and start again somewhere else." I must again point out the inadvisability of allowing a good coalfield, which might become of great value in the event of railway communication, to be spoiled. No plan required.

10. *Newcastle Coal Mine, Reefton*.—The old mine has been abandoned, and a new shaft sunk, reaching coal at 40 feet. Mr. Breen has been in the habit of paying the men at his own hotel. On my pointing out the very heavy penalty to which he rendered himself liable by so doing, he professed ignorance of the law, and promised to discontinue the practice.

11. *Dudley Coal Mine, Reefton*.—A tunnel has been driven 400 feet on the strike of the seam, with but little result. Air is moderate. Rules exhibited. No plan required.

12. *Golden Fleece Coal Mine, Reefton*.—One man employed. Act not kept. Pit in good order.

13 and 14. *Dugan's and Burke's Coal Mines, Boatmans*.—The former has been visited during 1881. Too much coal had been taken out under a large overhanging rock. Very little has been done at either of these mines.

15. *Brunner Mine, Greymouth*.—The works necessary for the improvement of this mine have been carried on very slowly. Timbering and spragging have been pretty well attended to, and there have been no accidents reported, as against five last year. On 18th August, 1881, I found the system of working which was projected and commenced at my visit in March had been very much abused, and the places worked to an enormous width, nearly 40 feet in places. I of course urged immediate discontinuance of this work, but Mr. Kennedy gave as his reason for not adopting this course that he was short of coal to the rise, and that the turbine would not draw from the dip. A new engine had been ordered. On 19th August the workings to the rise "through the fault" were very insufficiently aired. Report books were kept, and the mine examined before men entered. On 5th December I wrote to Mr. Kennedy asking if pillar-working had been discontinued, and have received no answer to the end of December. Judging from a letter received on 19th October, it should have been discontinued at the end of that month. With reference to Mr. Cox's remarks as to the danger of weakening centre-pillars in the mine, and producing a gigantic slip into the river, it is gratifying to find that in these particulars Mr. Cox entirely corroborates an opinion expressed by me in 1878 when (as coal viewer) I reported on the question of working pillars in this mine. The report

in question is unfortunately lost, so I cannot give an extract, but Mr. Cox writes (8th July, 1881)—“I had not seen the report you refer to until yesterday, although I was aware of its existence, but the course which you there propose is entirely what I should recommend, indeed what I intended to convey in my letter.” The fact is, there has been no Government control over the system of working in these mines, and I do not hesitate to say that very large sums of money have been lost to the Government by the irregular manner in which this mine alone has been worked. As long, however, as the health and safety of the workmen are not directly affected, it does not come within the duties of my position.*

16. *Coalpit-Heath Colliery, Greymouth.*—This mine was inspected by me on the 3rd March and 19th August, on both of which occasions it was in very good order, and no gas was to be seen. On the former occasion there was some danger of the furnace setting fire to the coal; but this has been rectified. The ventilation measured 13,545 cubic feet per minute, in the main return, and would have measured more only the furnace-man had choked the fire. On the latter occasion the ventilation measured 16,826; but a good deal of this was scale.

This pit is always in good order, and apparently carefully managed. No accidents have occurred.

GREYMOUTH DISTRICT.

17. *Greymouth Wallsend Colliery* is still idle. Shaft duly fenced.

18. *Greymouth Wallsend, No. 2.*—On the 2nd March, this mine was by no means in good order. No special rules were exhibited (they had been washed down by the rain), and general rules only at the pit bottom. Empty cages (not loaded, as required), were run up and down the pit shaft, before the men. The places were apparently examined before the men entered; but no mark left. Abandoned places not fenced. Three days later I made an overground inspection, and found things better. The pit was closed shortly after this; and when I was there in August, Mr. Harrison (the new manager) was looking after the property and keeping the report book.

This property has now passed into the hands of the Westport Coal Company.

MALVERN DISTRICT.

19. *Springfield Colliery* has been working during the year, the old mine being closed. There is only one shaft, divided by an inferior brattice. On the 28th April I made an inspection, and found no fence on the shaft. A door underground propped open, and one hung so that it would not close automatically. No indicator on the engine, which required fencing. Mr. Moody had then just taken charge, and on my next visit (28th July), these points had received due attention; but the air in the lower seam was very bad. No signals were painted on the pit top (special rule 44), neither was there a board showing the number of men allowed to ride on the cage at once (special rule 45). The cage cover impedes the ventilation, and is taken off when men are not riding. On the 29th July I examined the workings in the upper seam: the air was rather better. On the 15th and 16th November, inspections were again made, and all details were found to be attended to; but the more important subject of ventilation still required attention. With only one shaft, it is difficult to ventilate this mine properly. The time allowed for a second outlet expires on the 2nd September of the current year. In April the question of the water in the old drive, to the rise of the pit workings, was freely discussed between Mr. Moody, Mr. Swain, the underviewer (who was familiar with the old drive), and myself. In May I received information from you, that a collier was apprehensive of danger from this source. As there was at that time upwards of six chains of pillar, his fears were groundless; but I am very glad to see amongst the workmen a disposition to assist the department.

20. *Smithfield Colliery* is a small mine on the Springfield Company's land. It has not been in very good order.

21. *Kowai Pass Colliery* has again changed hands. On the 29th July the new shaft had been sunk to two seams with 20 inches of dirt intervening. The shaft, which is in the centre of a number of huts, was not properly fenced. A boy was illegally employed. Mr. Deane informed me by letter dated the 8th August, that the boy was dismissed, shaft fenced, and report commenced. On the 16th November, a new manager was in charge, and the pit in much better order; but the Act had to be reintroduced. A number of wrong special rules had been sent to the manager.

22. *Canterbury Colliery* was this year the scene of a fatal accident. On the 25th April, upon inspection, I found the Act disregarded, and the air bad. After cautioning Mr. Austin, I wrote on the 10th May, and sent special rules; and on the 16th May, a copy of the Act. On the 31st August a boy was killed; and on the 6th September the air was very bad in places,—in fact, it was generally so. The special rules had never been sent up for approval. No report was kept, and the admonitions of both Mr. Cox and myself, were utterly disregarded. On the 17th November the air was better, but merely pulsating, as the weather was very hot; and there was no artificial ventilation. A very good weekly report was kept. Rules were exhibited, and spragging pretty well attended to. (For particulars of accident, see Special Report.)

23. *Homebush Colliery.*—On the 26th April, the return by main level was 2,494 cubic feet per minute; but the air was not guided, and an old shaft, which ought to have assisted materially, was useless, because a small airway was blocked up. The mine, instead of being examined every morning with a safety-lamp, was done only once a week. A shaft required fencing. The rise workings were insufficiently aired, and I urged the manager to put a heading through to daylight on the rise. On the 14th July I received word from Mr. Brown that this was done; and on the 27th July I found a great improvement in the air. Pillar working had been commenced in the thin seam, and the places carried too far on slender props, without allowing the roof to settle, so that there was a prospect of

* See action upon the question of pillar working referred to in report of 19th April following this.—O. W.

the weight being thrown on to the face. I therefore requested Mr. Brown to set chocks until the weight had come on, and the places got into thorough working order. The ventilation this time was:—

								Cubic feet per minute.
Main intake by tunnel	...	...	...	...	...	...	...	3,256
„ „ „ dip shaft	...	...	...	...	...	...	...	3,600
								<hr/>
								6,856
Return by new shaft ...	...	...	...	...	...	...	...	3,770
								<hr/>
„ „ old workings (by diff.)	...	...	...	...	...	...	...	3,086

On the 6th August, Mr. McIlraith wrote that he had withdrawn the men from the pillar-working, pending further information. I wrote explaining, and on meeting Mr. McIlraith at Christchurch on the 9th September, he informed me that no men were employed at that work. On the 12th November another inspection was made. The pit was off, and the air quite stagnant (it was a very hot day). I therefore suggested a furnace, and received word on the 18th December, that preparations were made. A very slight accident occurred here; but as the man was not obliged to discontinue working, it is certainly not worth including in the list. On the whole this mine has a satisfactory record for the year.

24. *Hart's Colliery, Malvern*.—The first inspection of this mine was detailed in my report of June 1881. Since then the employment of females has been discontinued. On 13th November the mine was in bad order. Weekly report not kept; mine not examined with a safety lamp. On 16th December it was much better; air good and report kept; but only the rise portion of the mine properly examined. No gas has been seen.

25. *Wallsend (Malvern) Colliery*.—Of this pit I reported last June,—“The old shafts are fenced.” On 12th November I noted “the old winding shaft is standing unfenced, and very dangerous, within 1 chain of the road.” On 5th December (not having heard of the undermentioned accident) I wrote to Mr. Wilkie, late manager, asking who was owner. On 30th November a little child, eighteen months' old, was drowned in a water-hole at the back of some cottages belonging to this property. The hole is thus described:—“About 30 feet long and about 14 feet wide. On the side of the pond next the house there is no water; 2 feet from the side it gradually deepens to about 2 feet on the off side. * * * * There is an old colliery working within six chains, unfenced; and I consider it very dangerous.”—Constable WARRING. The jury added the following rider to their verdict:—“That the owner of the property be requested to fence or fill up these dangerous holes, and also that the constable be requested to communicate with the Inspector of Mines with regard to it.” The papers were forwarded to me by you on the 23rd of December. I do not see that the Government can be held responsible for filling in every little hole about a mine,—and the one in which this accident happened was very small,—but the pit shaft is a very different matter, and I have therefore written to Mr. Alfred Saunders, who is said to be the owner of the property, requiring him to fence it. No coal has been raised,

26. *Brockley Coal Mines*.—The seam here is thin and almost vertical, so that a drive is soon worked out. I therefore, although there are several drives, group the lot together. The first visit has been reported on. On 14th November I found one stone drive 134 yards in length, and three men working, with no means of ventilation. The other drive, where coal was being got, was so full of damp, that candles would hardly burn. I was informed that the old workings had been pricked that morning. Anyhow, the return was much too far back. On 14th December, the air was very good, and a new shaft was being sunk to ventilate the drive referred to above. Rules are exhibited; a report kept, but no plan, as it does not seem worth while at present, and the company have considerable difficulties to contend with.

27. *Dudley Coal Company's Mines*.—Mr. Hamilton has had five men prospecting on this property. Several seams have been found, but no coal raised. At his request I sent Special Rules.

28. *Rockwood Coal Company's Mine*.—On 12th November this mine was visited. It was merely a stone drift, 270 feet in length, without any air; dynamite was used. I wrote to the manager, requesting him to provide ventilation.

29. *Lees' Coal Mine* is near the Brockley. Nothing was doing when I inspected.

30. *Mount Somers Coal Mine* has not been revisited. It is worked open-cast.

TIMARU DISTRICT.

31. *Kakahu Coal Mine* was reported on last year. As nothing more has been done, it has not been revisited.

OTAGO DISTRICT.

32. *Wharekuri Coal Mine* has been visited once. Only one man employed. No plan required. Air not good.

33. *Kurow Coal Mine*. Only one man. Nothing to report.

34. *Prince Alfred (No. 1) Coal Mine*.—One man and two boys employed. Air not good on account of an incipient fire in No. 2. No report kept.

35. *Prince Alfred (No. 2) Coal Mine*.—Pillars are being got in this mine. The pit is in good order, except for signs of fire. Report kept. Special (but not General) Rules hung up.

36. *St. Andrew's Coal Mine*.—Not well ventilated in the ends, though there is lots of air passing through the mine. Special Rules exhibited. Report made. The drive has holed into Smith's old workings.

These last three mines had an excellent plan, which has not, however, been made up for some time.

37. *Ngapara Colliery*.—Very little indeed has been done. The mine is in excellent order, and a plan kept.

38. *Glenfield Colliery*.—Visited once only. The mine is perfectly kept, though of course the Act was not fully observed.

39. *Shag Point Colliery*.—This mine still engrosses a good deal of attention. With apparently every intention of having the place in good order, Mr. Williams has given me cause for complaint a good many times during the year. On 18th July, five sets of men were working in a district comprising 6½ chains of workings, and were absolutely without air. On 22nd September and 29th November the pit was short of air; on the latter occasion the dip drive was entirely without, owing to an accumulation of water (caused by a breakdown of machinery) in the return, and also to the inefficiency of sundry stoppings, &c. The main return measured in one place 3' 4" by 2' 5". On 22nd December I found the air better, but still choked by water. The air-way was cleared out, and a new heading, which I had recommended, had been driven, relieving the air very much. The old fire is at last, I venture to hope, done with. The prediction in last year's report, that the stoppings would be insufficient, was to a certain extent fulfilled, and in consequence dams were built, and the water allowed to rise in the level. This forms an air-tight and fire-proof stopping, and so long as the new part of the mine is carefully worked, no fear need be entertained of a fresh break-out. The new shaft is not ready for winding yet, though a single cylinder 12" horizontal engine is down. This shaft is divided into three; one 5' by 5' (for ventilation), and two 4' by 5'. It is now 247 feet deep, or 100 feet below the present seam. A 5' by 8' furnace will be the motive power for ventilation, and will be fixed on the surface, at the bottom of a 50' chimney (brick). With the steam-pipes in the shaft, this ought to give good ventilation. An endless rope has been fixed to haul from the dip, but the grade is very steep, and there is a sharp curve, so some delay has been caused. These difficulties will probably soon be got over, and all mining men will be glad to see this method of haulage introduced into the colony.

40. *Hill's Creek*; 41. *Ida Burn*; 42. *Mount Ida*; 43. *Dunsmuir's*; 44. *Crossans*; 45. *Cambrians*; and 46. *Swineburn Coal Mines*, were all reported on in June, and require no further notice.

47. *Last Chance Coal Mine* was visited in March. Was in very tolerable order then, but has been shut up since.

48. *Kyeburn Coal Mine*.—Visited 1st April, but could not inspect on account of bad air. Act not kept at all.

49. *Perseverance Coal Mine*.—Visited April 1st. A new ventilating shaft had been sunk and covered in. The loose stuff at the entrance (see previous report) had been secured, and the mine was in very good order. Mr. Stuart sent for Special Rules to the Government Printer, and received the wrong sort, for which he had ordered a very expensive frame. Weekly report very well kept.

50. *Alexandra*; 51. *Manuhirikia*; 52. *Perseverance (Cromwell)*; 53. *Bannockburn*; 54. *Kawarau*; 55. *Clyde*; 56. *Clyde (Holt)*; 57. *Clyde, No. 2 (Holt)*; and 58. *Earnsclough Coal Mines*, were reported on in June last, and have not been revisited since (up to the end of the year).

59. *Gibbstown*. 60. *McPherson's*. 61. *Low & Robertson's*: and 62. *Crossan's Coal Mines*, are all open work.

63. *Fernhill Colliery*.—The ventilation of this mine has been generally faulty, partly on account of defective stoppings (calico, stuffed round with sods), and partly because there is no furnace or other artificial means. I have tried to persuade the owners to adopt a furnace, but it appears to be a hardship, and very little work is done. Mr. Shaw does his best to keep the mine in order with what appliances he has. During the year the company took some drives under the Silverstream water-race (previously referred to), and as this was a risky undertaking, I recommended that some of the places should be stopped, and the rest carried on as quickly as possible, abundance of timber being used. So far the roof has stood very well.

64. *Allandale Coal Mine* has changed hands, but keeps about the same character (one man.) On 19th September, I found a boy named Alexander McCaughan, aged fourteen, working alone. He said he was unused to pit work, and the main road was in such a dangerous state that I stopped him, and gave the owner, who is the boy's father, notice in writing to discontinue such a dangerous practice. This he agreed to do, and commenced a cross road. The main road was 13 feet high, with a perfectly rotten roof, and large pieces hanging overhead. It was also in semi-daylight, and therefore difficult to watch. On October 27th, the place had been trimmed, and one miserable stick set, but the cross road was being driven, and nobody was passing the bad place. The Act is not enforced at this mine.

65. *Green Island Colliery*.—The fire mentioned in last year's report has been got rid of for a time by flooding the pit workings, and operations have been carried on exclusively in the drive. On 10th June the air was not very good; weekly report was neglected, and the main drive timber required attention. On 20th June the report book was made up, and the timbering better, but the engineman was occupying an exceedingly dangerous position, so I got the manager to fence it. Ventilation moderate, and a new outlet being driven double shift. On 22nd July the drive required timber, and a new signal wire had been put up in compliance with General Rule 3. On 23rd September the new communication was made, but impassable. On 21st December the workings appeared to be in very good order, though the men apparently do not use the new travelling road. Taking the whole year, this mine has been in a satisfactory condition.

66. *Saddle Hill Colliery*.—On the 22nd June the air was good. Cage covers not sufficiently substantial: abandoned places not fenced. On the 30th June I made an inspection to see about some old workings which exist to the rise, and have not been entered for some time. There was a blind shaft which used to carry off all the water from the old mine; but this may have got stopped up, so I got the owners' promise to explore before heading into dangerous proximity. On the 12th July, Messrs. Christie wrote complaining of the hardship of not being allowed to employ boys above ground on Saturday after 2 p.m. I therefore sent the case up for the decision of the Hon. the Minister of Mines, who determined that this violation of the law could not be permitted. On the

27th September the mine was in excellent order. Ventilation at end south level, 4,004 cubic feet per minute; ditto at main return, 7,020 cubic feet per minute. One cage was fitted with a good cover, and the other cover was ready to be put on when required. On the 8th December the pit was again visited, and no fault was to be found. I may mention that the furnace was once partially closed in, as an experiment, and found to be dangerous.

67. *McLachlan's Coal Mine*.—There is nothing to remark about this mine, except the circumstances connected with a fatal accident, which will be found in the proper place.

68. *Walton Park Colliery*.—On the 15th June the air here was very bad, so I persuaded Mr. Loudon to sink a shaft. On the 22nd July, the shaft was down, and a good air (9,394 cubic feet per minute), passing. A good plan is kept, and the Act generally observed.

69. *Abbotsroyd Colliery*.—On the 19th September this mine was not in very good order, but appeared better on the 21st December. The average main return is 2,785 cubic feet per minute, and the air is pretty well guided. A plan is made up once a year, and the report book (daily) kept. A miner was injured here on the 13th August; but there was no blame attributable to any one.

70. *Abbotsroyd (No. 2) Colliery*.—Mr. Freeman has started a new mine, nearer the railway. A drive was taken near some old workings; but due caution was observed. This is under the same management as No. 69.

71. *Hurdstone Coal Mine* was reported on last June.

72. *Marshall's Coal Mine*.—Visited on 17th May. Nothing to report.

73. *Bruce Coal Mine*.—On the 11th July this mine was in very good order. On the 19th October I found a girl of about thirteen, daughter of the lessee, working in the mine, below ground. This is forbidden by the law, and the penalty is one hundred pounds. The lessee is a man without capital, and has always been noted for keeping his mine in excellent order. The girl was not in the habit of working below ground, and had only just arrived, bringing her father's dinner, so I thought it better before instituting legal proceedings, to report the matter fully for the information of the Hon. the Minister of Mines. In answer I received your letter of the 27th October, as follows:—"When you next visit the mine, you will be so good as to enquire whether the girl is still allowed to go into the mine; and, if so, to direct the owner's special attention to section 11 of 'The Regulation of Mines Act, 1874.'" I have not yet made another inspection.

74. *Real Mackay Coal Mine*.—One man employed. Air guided and mine all right. No Act observed.

75 and 76. *Cannon's and Bryce's Lignite Mines*.—Both open work. Not visited since report of June last.

77. *Elliot Vale Coal Mine*.—Was purchased by the Kaitangata Railway and Coal Company, and has not since been worked.

78. *Benhar Colliery*.—On the 8th June this mine was all right; but a shaft on the other side of the railway was unfenced—as it was also on the 21st October. Shortly after (when passing by train), I saw a good fence. The reports, &c., have been all right, and the mine carefully managed. A drive was taken under the railway, but with every precaution.

79. *Kaitangata Railway and Coal Company's Coal Mine*.—On the 25th January this mine was examined, and the ventilation taken in eight places. The main intake was 13,728 cubic feet per minute. On the 6th July the mine was in good order, and no gas to be found. On the 29th September, ditto. On the 1st December I found the old pillar-workings on the north side had been discontinued, and the places stopped off, on account of a tendency to heat. This had cut off the air from the old road to the fault. Mr. Samson had therefore made a 12-inch by 12-inch hole in the door, and let some air through, which was guided (or rather ought to have been guided), up the heading with bags and brattice. The brattice was very rotten, and a bag had been hitched up. At 11.30 a.m., the place was said to be quite clear; at 2.15 p.m. there was 33 yards of gas in the heading. On the air being sent round again, it cleared in about three-quarters of an hour. On a previous occasion the heading was full, and Mr. Samson wisely put out the furnace before emptying the gas, so as to avoid what might have been a precisely similar accident to that by which Broadfoot lost his life at the Brunner Mine in 1880. A heading was being driven to take the air right round, and dispense with the brattice. We also found gas in one place in the old workings. The barometer was exceptionally low that day. The men were not working. This mine is carefully managed; rules exhibited; plan kept, and reports duly made.

80. *Kaitangata (No. 1) Coal Mine*.—This mine has been generally pretty well ventilated. There was a little gas in one place on 30th September. On 2nd December, a careful examination revealed no gas, although several places had been reported that morning, and in consequence put on with locked safety lamps. When arrangements are completed for carrying a separate split up each side, the air will no doubt be better. The main intake averages 11,630 cubic feet per minute.

81. *Wangaloa Coal Mine* has turned out 210 tons of coal, and found work for one man. Pit in good order; very little done. No Act observed.

82. *Johnston Coal Mine* has not been visited since June report.

83. *Wyndham*. 84. *Dawson's*. 85. *Sarginson and Teefer's*. 86. *Chittock's*. 87. *White's*. 88. *McKinnon's*. 89. *Pukerau*; and 90. *Pukerau Lignite Mines*, have all been visited for information. They are all open work.

91. *Elliot's (Wyndham)*; and 92. *Heffernan's*, are new open work lignite mines, and have been visited.

93. *Harker's*; and 94. *Chatton*, are open work, and have not been visited.

SOUTHLAND DISTRICT.

95. *Mataura*; and 96. *Mataura*.—Open work; visited.

97. *Templeton's Lignite Mine*.—A new open work mine; visited.

98. *Nightcaps' Colliery*.—A railway is being constructed, and very little had been done at the time of my visit on 12th October. Three sets of men were driving to the dip in a thin seam. Everything was right.

99. *Knight's Coal Mine*.—Situated close to No. 98. Open work; visited.

Accidents.

The *bonâ fide* coal mining accidents have been this year very few—namely, one fatal, and six non-fatal; but there have been unfortunately two fatal accidents in coal mines due to the presence of unauthorised and ignorant persons below ground. The non-fatal accidents require no special mention, and the one by which a life was lost was alluded to by Mr. Cox in his report of 25th May, 1881. It happened at the Westport Coal Company's Banbury Mine, on 15th February, and I was at Collingwood at the time, but arrived in time for the adjourned inquest on the 25th. The following evidence was taken (*Westport Times*):—

Robert Elliott, oversman in the mine, said: Knew deceased, William Hewitt. On Tuesday he was working by himself in the mine in a narrow bord, about 150 feet from the main road, and about 60 feet from the next man. Deceased went to work about half-past seven on Tuesday morning. I went into the mine in the afternoon to look the places through, looked up deceased's bord and saw his light burning. This was about half-past two. After looking through the other workings I returned to the deceased's bord about four o'clock. The truckers informed me that they had not seen deceased during the afternoon. I went up the bord, and his light was still burning. Called out to him, but received no answer. Went up to the place and found him lying dead under the coal. About fifteen hundred weight of coal in one block had fallen on his head and canted over. Deceased was lying on his left side across the "face" with his head under the coal. Called for assistance and got him out immediately. Deceased was working with a naked candle, about half an inch of which remained when I found the body. The bord is a narrow one, about eight feet wide, and does not require props throughout; there are some in a bad place. There was a sort of "back" in the coal, unknown, and when deceased wrought the corner of it out, it fell upon him. It is not often these backs are met with. The truckers only commenced work at 2 p.m. One of them ran an empty truck, part of the way, to the spot where deceased usually met them, but as he did not come the trucker concluded he had gone into another bord. The deceased had used no prop on this occasion, but he was one of the most careful men in the mine. Sounded the face myself on Monday morning, and found it solid. Deceased sounded it himself, and said, "I don't think there is any fear of that." Don't think that deceased's life could have been saved if another person had been working with him. A "sprag" may have prevented the fall of coal. There is always a plentiful supply of timber at hand. I would not myself have used a "sprag" on the occasion in question.

Joseph Gould, a trucker, corroborated Mr. Elliott's evidence, and the inquest was then adjourned until the 28th instant to allow of the attendance of the Inspector of Mines.

At the adjourned inquest the following additional evidence was taken:—

Robert Elliott, oversman at the Westport Colliery Company's mine, Waimangaroa, in reply to Mr. Binns, stated that he visited the bord about 6.30 on the morning of the accident. The next time he visited it was about 4 p.m. The shift commenced at 7.30 a.m. Witness stated it would have been his duty to have visited the place before, but the miners were not working the first part of the day. The places are examined in the morning, so that if the mine is not working men can go and get coal ready. In this case they commenced work at 2 p.m. A time book is kept. Men are allowed to work after the mine is examined. Witness commenced to go round the workings at 2.30. He did not think it would have saved deceased's life if he had been found sooner.

In reply to a juror, witness stated he was not aware of any complaints as to scarcity of timber.

R. B. Denniston, Mine Manager, in reply to Mr. Binns' question, whether the mine would have been examined more frequently if the miners had been at work, said he thought it would, as the oversman would be busy at his work. In answer as to whether the danger would not be as great when the mine was not sending out coal as when doing so, witness thought it would make no difference. The men are allowed to go into the mine, when we are short of trucks, to hew coal. The regulations as to visiting the workings were conformed with. The oversman reported visiting the place in the morning. The truckers could see deceased's light burning all the day. The bord is straight and about 2½ chains in length. Witness did not notice any timber at deceased's working face, it was lying at the flatsheet, about 50 feet above. We have never enforced the "spragging" of the coal. The deceased had holed through to a "back," and this was met by a "cross back."

James Gould: I am a miner, and was trucking at the Westport Colliery. I did not go up the bord when deceased was working. Did not hear any noise. Timber was supplied to us when wanted. I have not heard the men complain of the want of timber. I could not see deceased's light from the main drive. It dips on incline and rises again.

George J. Binns, Inspector of Mines, under "The Regulation of Mines Act, 1874," for the Westport District: I have heard the whole of the evidence in this case, and examined the scene of the accident. I have no reason to doubt the facts of the evidence given. I don't see that deceased's death was caused by any breach of the Act.

The verdict was "accidental death." This accident was duly reported, and the only peculiar feature about it was, that though the man was working within a very short distance of the main road, along which persons were constantly passing, the accident was unsuspected by any one for some hours after it occurred. The bord was left untouched until after my visit, and measured only 8' 9" in width, and 4' 4" in height.

On the 2nd September, upon returning to Reefton, from Boatman's, a telegram from the managing partner of the Canterbury Colliery reached me, giving notice that a boy had been killed there on the 31st August. After telegraphing to the Coroner, calling his attention to section 38 of the Act, I set off for Sheffield, arriving on the 6th, only to find the inquest concluded, and a verdict of "accidental death" returned. No notice had been sent to me by the Coroner, who had misread the Act, and declined to adjourn, although the inquest was held only forty-four hours after the accident. From the depositions, and from enquiries made on the ground, I give the following report:—On the 31st August, Ernest Phillips, 10 years of age, went into the mine, not only without the permission of the manager, but against his express orders, as he (the boy) had been warned off the premises the day before. After having been in the mine for some hours, the child lay down and went to sleep. Almost immediately a piece of the band fell upon him, and caused instantaneous death. On inspection I found that Mr. Austin had utterly neglected to observe the law, though warned several times; and, as the whole conditions of the mine and circumstances of the accident, appeared to me to require investigation, I ventured to suggest, on the 12th September, that an enquiry by a Resident Magistrate, or some qualified person, assisted by an Inspector of Mines, should be held, to supplement the inquest proceedings. This view was, however, not approved, and on the 3rd November, I received a letter from you that the matter was to drop. Though it is impossible to say that any breach of the law caused this accident; yet, a considerable amount of laxity and inattention to the requirements of the law, characterized the working of the colliery. It has since been put in better order.

The other accident caused by trespassing occurred at Saddle Hill on 4th December, 1881. I heard of the coal mine for the first time late on 6th December. (I mention this merely to show why it had never been inspected, and how it occurred that I was not on the ground till three days after the occurrence, although Saddle Hill is within seven or eight miles of this office.) On arriving there on the 7th, I found an inquest about to be held, but having sufficient time to inspect the place, did not ask for an adjournment. The facts are as follows:—Mr. Peter McLachlan was sinking a prospecting shaft, and left all clear at 5 p.m. on Saturday, 3rd December. On Sunday, about 11 a.m., Adam Callander, with two others, went to this shaft, having no right on the ground, much less to descend, which however Callander did. He was almost immediately overpowered by choke-damp, and fell back. His two companions, not being coal miners, were unable to get him out, though the pit was only 22 feet 6 inches in depth, and there was plenty of rope on a good windlass. My opinion is, that if a practical man had been there, his life would have been saved, but this opinion was not shared by the other witnesses. As it was, he was not got out until too late, and then the following treatment was tried:—Got a shovel and made a hole a few inches deep in the earth, and put his head in it. They placed him with his mouth down, and put what earth they took out of the hole on his head.”—(*T. Murdoch.*) “When I got up I gave them a hand to dig a hole to put his head in, to draw the damp out. He was very little covered, and his face was held up from the ground. This is a common method among coal miners for the purpose of recovering a person attacked with damp. I have seen it tried in Ayrshire.”—(*A. Harris.*) This extract is not given from any desire that the practice described by these witnesses should be followed more widely than it is; for Dr. McCaw’s opinion—“I think the treatment pursued was extremely irrational. * * * It would not be good for a man to remain all that time buried in the ground,” expresses in a very mild way my astonishment at hearing, for the first time, of this remarkable method of cure. The verdict of course was “accidental death.”

Death-rate in the South Island Districts for 1881.

The number of men employed being 754, and the tonnage 246,529, it follows that if we count one accident, the death-rate is 754 men employed, and 246,529 tons raised per life lost. But if we count the three accidents, the number of men is reduced to 255, and the quantity of coal to 82,176 tons.

Number of Mines.

The number of coal mines on this year’s list is 99, showing a decrease of two as compared with 1880. Sixteen mines, which have neither done any work nor been visited, have been struck off. There are several on the list which have received some attention during the year, and are consequently included. Fourteen new mines are noted. In three cases, where a new mine has practically incorporated an old one, I have added the “total output” of the latter. This was done in the case of the Koranui, with which I have incorporated the Waimangaroa Coal Mine.

Number of Men Employed.

The number of men employed during 1881 is 754, or 44 less than during 1880; and this is a very good sign, for the great evil in the majority of our collieries is, that there is too little work for the staff, consequently the places are worked intermittently, and danger ensues. The output, too, being much larger, proves that the coal mining population must have been doing much better last year than formerly, as with fewer men and a larger output, each man must have received a considerable increase in wages. Assuming the figures to be correct, and taking an average, I estimate this increase at nearly £11 15s. per head.

Output of Coal.

The output for the South Island for 1881 is, as already mentioned, 246,529 tons, being an increase of 43,281 tons on that for 1880. This increase is mainly made up as follows:—Westport Company, 20,306; Kaitangata Company, 9,514; Springfield Company, 4,868; Freeman’s Abbotsroyst, 2,938; Greymouth-Wallsend, 2,765; and Brockley, 2,430 tons: the only noteworthy decrease is Shag Point, 6,057 tons. In the statistical table, I have this time shown coal and slack separately. This slack trade is of far greater importance than would appear from the mere selling price, which is in many cases very little different from the cost of production: it means in the brown coal mines that the danger of spontaneous combustion is being, to a great extent, avoided; and the condition of the mines, both as regards this danger, and also ventilation, is much improved by having the old “sweating” heaps of slack abolished.

Methods of Working.

Worked by adit—Horse-power used, 9; self-acting inclines, 3; engine-planes, 6; hand-power, 30	...	...	...	...	...	...	...	...	48
Openworked	...	...	...	...	...	...	...	...	28
Prospecting	...	...	...	...	...	...	...	...	6
Worked by shaft—Steam-power used, 6; horse-power, 6; water-power, 1; hand, 4	...	...	...	...	...	...	...	...	17
Total	...	...	...	...	...	...	...	...	<u>99</u>

GOLD MINES.

On 10th August I received instructions to visit and report on the quartz mines at Reefton, Boatman’s, and the Lyell, with a view to bring under the Act those which required it. I therefore visited all those in which mining operations were being carried on to any extent, with the exception of the Alpine, which I was prevented from examining by the occurrence of a fatal accident which required

my presence in Canterbury. I found a considerable necessity existed for Government supervision; shafts unfenced; powder and dynamite in large quantities all about the mines; young children employed below ground; in one case a female working a winding engine (remarkably well, I must say); dangerous winding machinery; vertical ladders; and bad timbering.

On 13th September, therefore, I forwarded a list of mines to be inspected, and was directed, on 24th October, to bring them under control; on 25th October I forwarded a scheme of inspection, and on the 12th December received a notification that notice had been sent to all the managers and legal managers, together with a copy of "The Regulation of Mines Act, 1874." At the end of the year I was engaged in writing to each manager, calling his attention more particularly to those points which appeared at the time of inspection, to require alteration.

I have, &c.,
 GEORGE J. BINNS,
 Inspector of Mines.

ADDITIONAL REPORT BY MR. INSPECTOR BINNS.

SIR,

Dunedin, 19th April, 1882.

I have the honor to make the following report on the coal mines in this Island, which have been inspected since the commencement of the year. The numbers attached correspond with those in the Annual Report.

1. *Pictou Coal Mine*.—A seam of coal, about 13 feet thick, and containing portions of hard coal, has been discovered on the east side of Shakespeare Bay. The dip is very high and not uniform throughout. Nobody is working, and the mine all right.

5. *Koranui Coal Company*.—This Company has not yet begun coal getting. The mine is situated on the top of a mountain, not far from the Westport Company's Banbury Mine, and the coal will be brought down to the railway by a system of endless ropes. An engine at the bottom takes stuff up, and will assist the incline if necessary. A tunnel has been driven, and it is in good order. The prospecting works seem in a very backward condition.

6. *Banbury Coal Mine*.—This mine is now under the charge of Mr. Elliott, Mr. Denniston having resigned his position as manager. The places are well timbered, but the men do not set sprags so frequently as is necessary. The ventilation is still poor, as the furnace mentioned in the Annual Report has not been erected. Mr. Dickson (General Manager) informs me it is now being built. Reports duly made; plan kept, and the mine generally, except for ventilation, in good order. The places are examined before men go in, and a notice is conspicuously placed, "No men allowed to enter." When the fireman finds all safe, he slides the notice board, and exhibits "Mine safe; men may enter." One of these notices is always exhibited, and the plan is very good. Pillar-working progresses favorably, and will do no harm if it does not damage the main road. A custom exists of riding up and down the main incline on the railway wagons. That this is dangerous is proved by the fragments of wagons that line the road. Mr. Elliott informs me that he has forbidden the practice.

7, 8, and 9. *Energetic, Golden Treasure, and Lankey's Gully Coal Mines, Reefton*.—Still worked on the same small scale; nothing to report.

10. *Newcastle Coal Mine*.—A long tunnel is being driven to cut the coal. It is a good job, so far as the workmanship goes, but will, I am afraid, not be of much value when finished, being too near the basset. The practice of paying men at the hotel has, I think, ceased.

12. *Golden Fleece Extended Coal Mine*.—Still working on the same large slip. Workings splendidly timbered. This mine, like No. 8, is worked solely for the supply of the Company's engines.

13. *Dugan's Coal Mine*.—This and No. 14 have been bought by Mr. George Poole. Too much coal has been taken out under an immense overhanging rock. Timber is set, but will not be strong enough should a breakage occur. Warned owner.

14. *Burke's Coal Mine*.—Old mine worked out in the usual Reefton manner. A new drive is starting. Three men at work.

15. *Brunner Coal Mine*.—This mine has, since the Annual Report was sent in, been the cause of a large amount of correspondence and negotiation. On 6th February I visited those portions of the dip workings which were not under water. Roof not sufficiently carefully attended to. In the overman's report there was an entry stating that a miner had refused to set timber when required to do so. Now, Special Rule 17 enacts, "Every collier shall, under the direction of the underviewer or his deputy, set a sufficient quantity of props and bars for safety supporting the roof and sides in his working place." Thus a refusal to set timber *where necessary* subjects a miner to a penalty of five pounds, or a month's imprisonment, in default of payment. On enquiry it appeared that discipline was practically non-existent in the mine. The overman stated that several similar cases of disobedience had occurred, and had not been reported. This was a breach of Special Rule 15: "The underviewer shall see that the timber is properly distributed, that there is sufficient, and that it is used where necessary for security." If, therefore, he thought timber necessary, ordered it to be set, and allowed his orders to remain unobserved, he was neglecting one of the Special Rules, in terms of section 22 of the Act. Unfortunately the one case reported was not supported by sufficient evidence to render a conviction certain, so I reluctantly allowed it to pass, but impressed upon the owner, manager, and underviewer, the absolute necessity in cases of insubordination of this nature among the men, of at once suspending the offender, letting me know, and instituting a prosecution. This advice appears to have been neglected, as on the 8th instant I received a letter from Mr. Kennedy, dated 1st April (post-marked 3rd April), and covering a copy of a telegram to me which Mr. Kennedy had presented, and which the Telegraph Department had naturally declined to send free. This telegram (85 words) stated, to condense it very much, that on the 1st April a collier had been killed by neglect to set timber. He had been "cautioned," and the caution being apparently

deemed sufficient, he had been allowed to go on, and was killed. If the manager had seen that my request was attended to, and the man either compelled to set timber or leave the mine, he (the workman) would, in all probability, have been alive now. It is only fair to say that I have not had an opportunity of seeing the present manager, Mr. Wm. Tattley, M.E., and of explaining my views to him. As news of this accident never reached me until a week after its occurrence, and it would have taken five more days to reach Brunnerton, and also taking into consideration the fact that the inquest was over, and that there was no power under the Act to institute a second enquiry, I, with much regret, abstained from going to investigate.* No statutory notice of this accident having been sent by the coroner, I telegraphed on the 11th for information. On the 18th, Mr. Stratford, R.M., sent me an explanation, stating that a severe illness, from which he had not yet recovered, had much interfered with business, and that "the enquiry proved beyond a doubt that the deceased was alone to blame for his death, and the manager by the jury acquitted of all responsibility. I admit I should have gone through the formalities of the Act," the letter goes on to say, "but the delay would have been very trying to the relations, and the result the same." This I beg leave to doubt. To continue Mr. Stratford's letter. "Acting on your advice given in last August, I wrote a letter to the Hon. the Minister of Justice, a copy of which I now attach for your perusal. It was never acknowledged. I should be so much obliged to you to support my recommendation, which I feel sure you will readily do, as you have already expressed your views to me." This matter was discussed some years ago, and formed the subject of a communication from the late Mr. Warden Broad. I do not hesitate to state that nine-tenths of the useful effects of an Inspector's work consist in the investigation of accidents. In the report for 1878 of Mr. Hall (one of Her Majesty's Chief Inspectors of Mines for Great Britain) the following passage occurs:—"A lively feeling has been sustained throughout the district that if any accident occurs through breach of rules, it is certain to be detected and punished. This work necessarily occupies a great portion of an Inspector's time, but it is certainly the most fruitful in good results. I feel that to omit strict enquiry into each accident, with the object of devoting additional time to general inspections, where the Inspector is not set in motion, either by accident or complaint, would be mischievous." I may point out that the three last fatal coal-mining accidents in the colony have not been reported by the coroners, and that two of them, where strict investigation was most necessary, have been unattended by an Inspector, and no doubt a lively feeling exists that if the reports are delayed a little by chance, and the inquest hurried over, any accident occurring through non-observance of rules, will be allowed to pass without the offenders receiving the punishment due to their neglect. To resume the report on the mine. On 7th February I inspected the rise workings, returning through the pillars. This road is not safe to travel, and will soon close. The air is good. The pillars were still being worked, indiscriminately and injudiciously. In consequence of this and of the probable difficulty of stopping pillar-work by any other means, I felt it my duty to recommend most strongly that an appointment under "The Westland and Nelson Coalfields Administration Act, 1877," should be made. On the 17th your telegram arrived, appointing me an Inspector under that Act, and on the 20th a letter from Mr. Greenfield, Commissioner of Crown Lands for the Nelson District, appointing me an Inspector under the Brunner lease. As these appointments give ample authority, I at once took steps to stop pillar-working, and as reported in detail on 28th March, was successful in doing so on 10th March. As far as this mine is concerned, the harm is done, but the others may be saved from the consequences of similar recklessness. Mechanical ventilation was not in use, and although the Act is outwardly observed, the mine is in a very unsatisfactory condition. I have recommended that the many roads into the workings should be fenced: at present the mine is open to any one.

16. *Coal Pit Heath Colliery*.—Visited the 6th and 7th February. As usual, in good order. Being a new mine, it is much more easy to keep so than the Brunner. Plan made and reports duly kept. Powder magazine moved to a safer position. Ventilation as follows:—At end of main level, 5,857; main return, 16,967 cubic feet per minute. This speaks for itself. The mine is daily examined before men enter, and the air is well distributed. The seam gives off gas, and the slightest laxity might cause a great loss of life.

88. *Glenfield Colliery*.—Visited the 5th April. In very good order as regards ventilation and management. Coal is left for a roof, and not a stick of timber is required.

89. *Shag Point Coal Mine*.—Visited 6th April. The ventilation is much better, as follows:—North side of dip return, 2,205; south side of dip intake, 2,880 cubic feet per minute, and is pretty well distributed, the bolt-holes being made much more frequently. The fire is now no trouble, and the places well timbered; but it appears to me quite likely that a new fire may start in the dip if the bords are not kept cleaner. Roof still bad. Reports kept. A heading is being driven east from the new shaft.

55. *Clyde Coal Mine (Collin's)*.—Inspected the 10th January. Mine in rather better order. An air shaft was being sunk. The slack was heating a little.

56. *Clyde Coal Mine (Holt)*.—The old shaft more securely fenced.

57. *Clyde Coal Mine (Holt)*.—The shafts mentioned in last year's report are not yet finished. I went down one, 140 feet deep, in a sling, the brake-power being a horse, which backed intermittently, allowing me to jerk down a few feet each time. The shaft is not in good standing ground, and is without timber. The one place is entirely without air. Mr. Holt said some piping was being made. Shaft not fenced. I wrote to the owner, requiring him either to put in ladders, or provide proper machinery, as provided by General Rule 12.

58. *Earnsclough Colliery*.—A fire had broken out in this mine, just before my visit, on the 11th January. I had previously cautioned the owners; but people always seem unwilling to believe that their coal, though similar to other firing coals, will ignite spontaneously. A good report book kept; and a plan, which is not quite so good. Mr. Buckley, the managing partner, says he has sent twice

* See Special Report of the 17th of May following this.—O. W.

to the Government Printer about Special Rules, and has also sent money, but has received no answer.* The communication between the levels, as suggested by me, has been made. The mine was flooded to quench the fire.

65. *Green Island Colliery*.—Air good. Tunnel a little defective. Plan not at mine.

68. *Walton Park Colliery*.—Inspected the 6th January. This mine remains very much the same. The roof cuts badly still. Air better now that the new shaft is down. Mr. Loudon is building a very good furnace. Act observed.

69. *Abbotsroyd Colliery*.—A fire has occurred in this mine; and on the 29th March the men were withdrawn from the ends, and air was passing through, which seemed to me likely to make the fire worse. Act kept. Men working at pillars.

70. *Abbotsroyd (No. 2) Colliery*.—Working two shifts to supply the trade. Air pretty good. Two means of egress. The water was successfully let off from the old workings by a bore-hole. Special Rules not replaced when torn down.

75. *Cannon's*; and 76. *Bryce's Lignite Mines*, are still worked opencast.

82. *Johnston Coal Mine*.—This mine is worked now by Messrs. Stevenson & Co. A shaft has been sunk. The bords are taken rather too wide.

Gulline's Coal Mine (Reefton), has again been taken in hand, and will reappear in the list for 1882. A small drive has been taken in, not very regularly, and no one was at work at the time of my visit.

I have, &c.,

GEORGE J. BINNS,
Inspector of Mines.

The Under-Secretary for Mines, Wellington.

No. 4.

SPECIAL REPORT AS TO FATAL ACCIDENT TO JOHN KALKA IN THE BRUNNER COAL MINE.

SIR,—

Dunedin, 17th May, 1882.

Having made a special visit to the West Coast for the purpose of investigating the late fatal accident in the Brunner Mine, I have the honor to report as follows:—As there were ten workmen from the Brunner Mine and surface works (including the fireman who examined the place in the morning of the accident) on the jury, and as nobody connected with the management of the mine was called as a witness, it is hardly necessary to remark that no exhaustive and impartial enquiry had been held. This circumstance had considerable weight in inducing me to lay an information against Thomas Moore, underviewer of the Brunner Mine, for neglecting to see that timber was “used where necessary for safety” (Special Rule 15.) As will be seen from the following report, taken from the *Grey River Argus* of 9th May, the case was dismissed:—

Thomas Moore, of Brunnerton, was charged on the information of George J. Binns, Inspector of Mines under “The Regulations of the Mines Act, 1874,” that he Thomas Moore, of Brunnerton, within the space of six months last past, to wit—on the 31st day of March, 1882, at Brunnerton, in the Provincial District of Nelson, and in the mining district of Westport, being an underviewer employed in or about the Brunner Mine, in the said district, did neglect one of the special rules established for the said mine in pursuance of “The Regulation of Mines Act, 1874,” by failing to see that timber was used when necessary for security.

Mr. Perkins appeared for the prosecution, and Mr. Guinness for the defence.

Mr. Perkins said that this case was brought before the Court in consequence of the death of John Kalka, in the Brunner Mine, through a fall of coal on the 31st March last. Under clause 15 of the Special Rules for Working the Brunner Mine, it was the duty of the underviewer to provide all necessary timber for the safe working of the mine, and to see that that timber was used. In this case he believed that the timber was supplied, but he contended the underviewer had not carried out the latter part of the rule, and was therefore liable to a fine of £5, or one month's imprisonment. The following evidence was taken:—

George J. Binns, Inspector of Mines, produced *Gazette* containing proclamations of district under the Act, and *Gazette* notice proclaiming the Act in force; also special copy of rules as applying to Brunner Mine, signed by witness. Was notified that a man named Kalka was killed at the Brunner Mine on the 31st March. Visited the mine on the 4th instant and saw defendant. Cautioned him in the usual manner about answering questions, as they might be used against him. Took a note of the conversation. Moore then said “that he cautioned Kalka before the accident took place.”

Cross-examined by Mr. Guinness: Wrote down at the time what Moore said. It is the duty of the underviewer to see that timber is set wherever necessary.

Re-examined: The fact of Moore cautioning Kalka showed that timber was necessary.

By the Bench: The cause of the information being laid was through Kalka being killed, and the explanation of the accident not being satisfactory to the Government.

William Tatley, Manager of Brunner Mine, proved that defendant was underviewer of the mine when Kalka was killed. When Moore was appointed underviewer gave him a copy of the special rules for the mine. Read them over to him, and cautioned him to see them carried out. The coal which killed Kalka fell from the higher portion of the board. None of the roof had fallen.

Cross-examined: Was present when the Inspector was examining Moore. Moore said when he was in the place where the accident occurred there was no need for any sprags.

Re-examined: Cannot remember Moore saying he had cautioned Kalka.

James O'Neill, miner, at Brunnerton: Was at work with Kalka when he was killed. Asked the underviewer before starting whether there was any danger. He said he thought there was none. Thought the coal was dangerous, and it should have a sprag. Told Kalka so, but he said it would stand for months. Afterwards Kalka sounded the coal, and said it was getting looser. Immediately after it fell on Kalka. Did not hear the underviewer caution Kalka or witness. Saw the underviewer about 8 a.m., and the coal fell about 11 a.m. There was no timber under the coal which fell. Said at the inquest it was deceased's own carelessness in not setting timber.

Cross-examined: The coal fell principally from the roof. There was plenty of timber if it was necessary. There was no necessity to use sprags if the coal had been cut down. A sprag ought to have been put under it, or it should have been cut down. Expected the coal would come down. Kalka was standing alongside the truck, about five feet from the face, when the coal fell.

Re-examined: It was cut in such a way that it was not safe to be near it, and it might come down at any moment.

Cross-examined: It is perfectly safe to work under the coal if the sides are not cut. Am not an experienced miner.

Martin Kennedy, owner of the Brunner Mine, reported the accident to Mr. Binns by telegram produced. (The telegram stated that Kalka had been cautioned.)

* There appears to have been some mistake here, for it was found upon enquiry that rules were forwarded by the Government Printer.—O. W.

Richard Gregory, miner for 53 years: Recollected John Kalka being killed on 31st March by a fall of coal from the roof. Helped to take the man out. Had been in the place the day before. Kalka was then filling trucks from the left hand side of the face. Kalka asked witness to come and see his place, saying it was very bad. It wanted timbering badly. The coal was cut about 8 feet, close to the rock, to the face. The coal was cut long before the accident. The coal had not parted from the roof when I saw it first, but it had next day. If I had been working it I would have set timber. On the next day the coal had been cut right up to the roof. There ought to have been sprags placed under the coal.

Cross-examined: The bottom of the coal had been taken out some time previously, and was dangerous without props. Told Kalka this the day before. The coal came partly from the roof and partly from the face. There was coal still left hanging there after the fall. Did not use timber in my bord, but considered it should have been used in Kalka's bord. Every bord differs.

For the defence—

Thomas Moore, defendant, said he was underviewer of the Brunner Mine. Visited the spot where the accident took place at 8 a.m. on the 31st March. Did not consider sprags necessary at that bord. The accident could not take place so long as the sides were uncut. When I visited the place the sides were not cut. Did not caution Kalka, as there was no necessity. The coal that fell came from the roof. Saw Mr. Binns at the mine on the 4th instant. Did not tell him that I had cautioned Kalka. The height of the coal there is about 9 feet, and the rock is sound, requiring no timber.

Cross-examined: The width of the face was more than is usual. It would be about 21 or 22 feet. It was 28½ feet on the 4th instant. Saw Mr. Binns make the entries in his pocket-book of the conversation that took place. Was not present at the inquest. Never cautioned Kalka. All the coal that fell came from the roof, clean from the rock—as far as the deceased cut it. Have been a coal miner for seven years. Consider myself competent. Don't know whether the former manager left on account of my appointment as underviewer.

Mr. Tattley was through part of the mine on the day previous to the accident. Considered the place where the accident happened perfectly safe. On the morning previous there was no cutting. Consider Moore perfectly competent. Have reduced the width of the face where the accident happened for the safety of the mine, not for the safety of life. Did not tell Binns that I had cautioned Kalka on the 30th. Might have said that as usual he had cautioned the men generally to use timber wherever necessary.

Re-examined: Kalka cut the coal in the usual way.

The Bench said that Mr. Binns deserved credit for bringing forward this case, as it was evident there had been neglect of duty or error of judgment somewhere. How Moore, the underviewer, who had charge of the place where the accident took place, was not called as a witness at the inquest, they could not understand. As the evidence of what took place at the interview between the Inspector and the defendant, as to whether the latter had said that he had cautioned Kalka, was contradictory, the Bench would dismiss the information.

Mr. Guinness applied for costs for the defendant, which were refused.

In order to explain my remarks of the 19th ultimo, it will be necessary to give *Mr. Kennedy's* telegram in *extenso*.

Greymouth, 31st March, 1882.

G. J. BINNS, Esq., Inspector Mines, Dunedin.—At noon to-day John Kalka, coal miner, was killed in Brunner Mine. He was holing coal in No. 2 Bord, rise workings, and neglected to use sprags after being cautioned. About three tons coal came down. Coroner Stratford held inquest at mine. Verdict jury accidental death; no blame attached to any one. Timber had been supplied him. His mate also cautioned him yesterday and to-day. The manager inspected all the mine yesterday, and deceased's bord, subsequent to accident, says no better working places in mine.—M. KENNEDY.

From this I was justified in assuming that the first person who cautioned deceased was one of the officials of the mine, and in a letter from Mr. Kennedy, dated 3rd May, this sentence occurs:—

When the deceased was spoken to, there does not appear to have been any immediate danger, but a day's work being done without attending to the advice or injunction, altered the condition of his face working; and as he was upwards of sixteen months working in the mine, and a collier from the old country, some latitude should, one would imagine, be allowed to such persons before adopting extreme measures towards them.

Now, I should certainly have judged from these documents, that the deceased was cautioned, or (to use Mr. Kennedy's words) advised or enjoined, by some one, whose duty it was to caution or advise; and on enquiry at the mine, on the 4th instant, from Mr. Tattley and from Moore, I wrote in my note-book—"Mr. Tattley went round with either Moore or Morris at 10 a.m. on the 30th, and cautioned Kalka in a general way, but not *re* that particular bit of coal." Also, "Moore cautioned Kalka *re* overhanging coal, and it was a mere shell. The fact of its being cut subsequently made it dangerous." Richard Gregory also, a very experienced coal miner, informed me that he was in Kalka's bord on the 30th, and that it was then in a dangerous condition. You will probably agree with me that there was no course open but to prosecute.

The evidence was very contradictory, and the bulk of it went to prove that the place was safe on the 30th, also that it was much too wide, and that the accident happened while the deceased was endeavoring to pull down some coal. Although the prosecution resulted in a failure, I think it will have a very beneficial effect.

I have, &c.,

GEORGE J. BINNS,

Inspector of Mines.

The Under-Secretary for Mines, Wellington.

No. 5.

REPORT UPON INSPECTION OF QUARTZ MINES, WESTPORT MINING DISTRICT.

Mr. Inspector BINNS to the UNDER-SECRETARY for MINES.

SIR,—

Dunedin, 17th April, 1882.

I have the honor to make the following Report on the quartz mines in the Westport Mining District for the information of His Excellency the Governor. As already mentioned in the Annual Report, all the quartz mines in the Reefton District (with the exception of the United Alpine), which were engaged in actual extraction of stone, or at which the approaches or other circumstances rendered it advisable, were visited in August and September, 1881. It being impossible, under existing circumstances, to bring the whole of the claims under the operation of the Act, the only course appeared to be to exclude all those which could be classed as prospecting claims. Accordingly I wrote at the end of December and beginning of January to the legal managers of the following mines, giving them notice to observe the Act, and enclosing copies of detailed letters which I at the same time addressed to the mine managers:—(1.) Golden Fleece Extended Quartz Mine. (2.) Welcome Quartz Mine. (3.) Energetic Quartz Mine. (4.) Wealth of Nations Quartz Mine. (5.) Golden Treasure Quartz Mine. (6.) Keep-it-dark Quartz Mine. (7.) Fiery Cross Quartz Mine. (8.) Nil Desperandum Quartz Mine. (9.) Just-in-time Quartz Mine. As the regulations had been fully discussed with most of the mine managers, and some considerable time elapsed between the date of

delivery of the notices and the time of my visit, I naturally expected that some progress would have been made towards compliance with the law; as will be seen, however, by the following details of the condition of the various claims, this hope was, in most cases, doomed to disappointment.

REPORT ON THE VARIOUS MINES.

1. *The Goleen Fleece Extended Quartz Mine* is worked by a shaft $6\frac{1}{2}$ feet by 4 feet (centred) and 640 feet in depth. The quartz is raised by a 12 N.H.P. steam engine, fed with coal from the Company's mine. The mine generally is in excellent order, and has been well laid out. On 14th February the Act was contravened in the following respects:—(1.) The shaft not fenced. (2.) No indicator on the engine. And (3.) No weekly report. On the other hand, the cage was covered, the engine fenced, safety-valve and water-gauge all right, intermediate entrances into the shaft fenced, and the air good. On the 15th I wrote to Mr. G. W. Moss, the legal manager, giving him notice to rectify the defects, and on the 20th received a letter from him, that this should be done on the return of Mr. Trennery, the mine manager. Inspected again on the 4th March, finding the shaft temporarily fenced with a lifting bar (which was naturally up, leaving the shaft open), but nothing further done. On 3rd April gave a final notice to the legal and mining managers. Sixteen men are employed below, and five above.

2. *The Golden Treasure Quartz Mine* is worked by an adit level, from which a winze is sunk 165 feet. The ladders are vertical for the first 12 feet, and there are no platforms in the upper 85 feet. Powder was in the mine, loose in a keg; and dynamite also lying about. Neither a plan nor a report book is kept at the mine, as there is no office. Timbering good. Air somewhat deficient. On the 4th March, the mine manager brought his Report Book. Thirteen men are employed below, and four above.

3. *Energetic Quartz Mine*.—This claim is worked by a shaft 360 feet deep, and measuring 9 feet by 4 feet. On the 10th February, work was almost entirely suspended. The shaft is fenced; but no winding is carried on, and the indicator is not yet up. A winze was being sunk. Powder was taken in in a 25lb. keg, and the men were in the habit of helping themselves from the store. Timber good. Eight men only employed below. I pointed out to Mr. McCallum, the alterations required. The mine manager has for some time been in the habit of keeping a daily Report Book.

4. *Wealth of Nations Quartz Mine*.—This mine, like the last (with which it is connected below ground), is doing very little. On the 11th February only four men below, and two above, were employed. Powder taken into mine in 6lb. tins. Plan up to date. No weekly report. On the 25th February I made a further inspection, and found that some ladders which were not satisfactory at the time of my August, 1881, visit, had been altered to comply with the regulations. They had been put in again in a sloping position, with ample foothold and proper platforms: they had also been continued above the top of the brace. At this claim is a very good hauling apparatus, worked by a steel endless wire rope (total length 57 chains), off the main waterwheel. The driving-pulley is 7 feet diameter; drum, 3 feet. The rope is carried up the side of the hill and into the tunnel, round a great many curves. The winze is 160 feet deep; buckets hold each $\frac{1}{4}$ th of a cubic ton (of 27 feet). The slope of the winze is about 4 inches to the foot, and the time occupied in winding 45 seconds. A friction-clutch is used which prevents too great a shock in starting. There is no reversing gear, and the bucket is lowered by a brake. The whole apparatus works exceedingly well, and can with great readiness be removed from its present position to any other place from which it may be desirable to wind. The air in this mine is good, as is also the timber.

5. *Keep-it-Dark Quartz Mine*.—This claim is worked by a shaft 150 feet deep, with a 25 feet sump. The motive power is a 20 foot water wheel, working a 10 feet drum on the same shaft. This shaft is 130 feet away from the pit's mouth, where the engineman stands. On 11th February I visited this mine, and found that no effort had been made to comply with the law. The shaft was unfenced, cage uncovered, ladders still vertical, and without sufficient foothold; no indicator, and no weekly report. Mr. McMaster, the mine manager, said he had never got my letter. On enquiry it was found to have arrived at the office of the legal manager, Mr. G. C. Bowman, on 10th January, 1882. Mr. Bowman had been ill for some weeks, and unable to attend to business, so on 13th February I wrote to him, and got an answer from Mr. McMaster that the Act should be attended to. On 18th February I found very little done, and had to make a rough model of a sliding fence before it was possible to explain thoroughly what was wanted. On 25th February the rope on one cage had been spliced on to the shackle, and was awaiting clamps to further secure it. This is an improvement on the old fastening, which was a half-hitch, and the loose end secured by a piece of spun-yarn. The manager said a report had been written, but it was not at the mine. On 3rd March the shaft was fenced with a single lifting bar, which was open, proving its uselessness. No indicator or cage cover had been supplied, and the ladders were unaltered. The head-gear is very low, and when the cage was raised up, preparatory to descending the shaft, the distance between the end of the knot and the point of contact with the pulley wheel was only 5 feet 3 inches. This is evidently not enough for safety, and I have advised the purchase of a detaching hook. The cage was pulled up against the wheel once; but the main shaft was bent, and the drum shifted.

A collar on the main shaft, which was broken last September, has been replaced by a new one. It is hardly necessary to remark that this company is exceedingly dilatory in bringing things to a proper state. On 12th April I wrote to the mining and legal managers, giving them notice to observe the Act.

6. *Welcome Quartz Mine* visited 17th February. This claim is worked by an adit level, above which are the stopes, and from which a winze has been sunk 160 feet following the reef. The company propose putting down a shaft and winding gear. The ventilation is good generally. Powder regulations not complied with. No plan at mine (the manager told me a copy had been ordered), and no weekly report. In September, 1881, a boy, ten years of age, was working below ground (part of his time), but he has been dismissed. The mine generally is in good order. Thirty-four men are employed below, and six above. On 4th April I sent notices to the legal and mining managers *re* the above points.

7. *Fiery Cross Extended Quartz Mine*.—The mining manager of this claim gave me a great deal of trouble, showing great disinclination to comply with the law. On the 15th February I made the first examination. Nothing had been done to observe the Act. The manager was away on sick leave. There was no fence to the shaft or cover to the cage; signals not properly arranged; powder regulations contravened; no intermediate fence; no indicator; no weekly reports; and the lower length of ladders (150 feet) vertical, without sufficient foothold, although I had explained the regulations in September before these ladders were put in. On the 16th February I saw the mining manager, who appeared to think the Act quite unnecessary. A telegram to Mr. G. W. Moss, legal manager, produced this reply: "Have wired Currie to comply with your instructions." I may mention, *en passant*, that Mr. Revell, R.M., visits Reefton only once in three weeks. On the 17th February nothing was done. On the 24th two men were engaged moving the ladders; as, also, on the 27th, on which date I saw some men descend the shaft on the same cage as a load of tools; this shows carelessness in the management. I have mentioned it to Mr. Currie, who was there at the time. On the 4th March saw the mining manager at Reefton, he told me the shaft fence was made and awaiting guides; he also got some wire for the indicator. The air, at the time of my visit, was not particularly good. It was at this mine that a female was in the habit of occasionally working the engine, in contravention of section 14; this has been discontinued. The motive power is a 36 feet water wheel working a 12 feet drum. The shaft is 450 feet deep, with an intermediate level at 300 feet. I have recommended the Company to put up a detaching hook. Fourteen men are employed below and three above. On the 12th April I sent final notices to the managers.

8. *Just-in-Time Quartz Mine*.—Examined on the 17th February, 1882. Mr. Lawn, mining manager, informed me that he had never received my letter, but had endeavoured to comply with the powder regulations by removing a powder magazine from the mine. I may recall the fact that in giving notice two letters were sent in every case, one to the mine manager and a second, covering a copy of the former, to the legal manager. In this case it appeared, from an explanation given by Mr. Wise, that I had enclosed both letters in one envelope to him, and that this had caused him to overlook Mr. Lawn's notice. Not that my mistake was the slightest excuse, for a notice to the legal representative of a company is quite sufficient; still if Mr. Lawn had received my letter he would probably have had a better result to show. The mine is worked by a level, from which a winze is sunk 88 feet to the bottom level, where the stopes are. From this level a winze has been sunk 81 feet. The air in the south stopes is very bad, and a communication is being made. Timber very good. Ladders in bottom winze are vertical and have not six inches of foothold, so they will have to be altered. Powder is taken down in 7lb. tins, which Mr. Lawn agreed to alter. Seventeen men are employed below and four above. Final notices were sent on the 4th April.

9. *Nil Desperandum Quartz Mine*.—Visited on the 11th February. The mine has been in the hands of tributers and had got into very bad order. It is worked by an adit, from which a winze is sunk, the stuff is hauled up this winze by horse power and the same division is used as a thoroughfare. To protect the ladders boards have been nailed in the middle of the rungs. The ladders are vertical and much worn away in places by the bucket; they were being repaired, but were being fixed in a vertical position with only four inches foothold. The Act was not kept in any respect as the legal manager, Mr. P. Lee, had not informed either the mine manager or the directors of the receipt of my notices. On the 13th February I wrote requiring compliance with the law and on the 14th received an answer that the directors had given instructions to observe the Act in every respect; also requesting permission to use the old ladderway until a new one was constructed. I agreed to this course and on the 25th February inspected the mine again. The mining manager, Mr. Treloar, had written an excellent report in the Weekly Report Book; and an old winze was being cleared out and retimbered for a travelling road for the men. On the 4th March Mr. Treloar informed me that a depth of 50 feet, out of a total depth of 110 feet in this old winze, had been cleared out. Four men are employed below and one above.

10. *United Alpine Quartz Mine*.—Visited on 1st March, and found the mine in a most delapidated and dangerous condition. The reef is very wide, upwards of 30 feet in places, and as there is no provision for filling in on the north side, the result may easily be imagined. The walls being very bad, and the mine wet, a slip occurred shortly before my visit. The passes are crushed entirely out of shape, and have no ladders in them, so the men have to scramble up and down. In the south stopes the timber had been badly put in, but a filling shaft exists. The Act was not observed. No weekly report made; no proper dressing-room for the men, who consequently have to change their wet clothes in an inconvenient and insufficiently-protected smithy. The works on No. 5 level are in better order. On 4th March I wrote to the legal manager, pointing out the dangerous condition of the mine, and that it would be necessary to timber and back-lath and fill in, stope by stope, also that the passes used as thoroughfares for men would require repairing; also warning him that in case of any accident occurring from the dangerous condition of the mine, the Company would be held responsible. On 10th March the following answer (dated 6th March) arrived:—"I have been instructed by the Chairman of Directors to acknowledge the receipt of your letter of 4th instant, *re* the state of the Company's mine, and have the honor to inform you that your instructions with reference to timber and back-lath, fill in, stope by stope, and all those passes which are used as thoroughfares for men, are being complied with by the Company.—(Signed) JAMES INGLIS, Manager." I have since written to the legal and mine managers, giving them formal notice to observe General Rules 17 and 23. Mr. George Black, the mine manager, took charge, a few days prior to my visit. Forty-two men are employed below, and three above.

GENERAL REMARKS.

It will be observed, in reading the description of the conditions of the various mines, that (with the exception of the Alpine) it is more in small matters of detail that the law is transgressed, than in the larger questions of safety; indeed the timbering in many of the claims is most excellent; at the same time it will be necessary to have these small details attended to, and it appears to me necessary

to offer some explanation why, with all the warning that was given to the managers, and the numerous opportunities that offered, I failed to make an example by instituting a prosecution. In the introduction of a stringent Act like this, we cannot expect to have it observed at once. Most of the managers on the field had never seen a similar law, and were totally at a loss to take the necessary steps. In fact, in more than one case, I had to make rough models of the sliding fence, and in another instance, when I had drawn a detailed sketch of an indicator, and calculated the size of spindle, length of slide, &c., for a manager, he declared himself unable to grasp the question, and that the assistance of a watch-maker would be necessary. This shows the necessity of some training and a little general information before a man is put in charge of a mine. Most of the mines keep excellent plans, and of some of these I have obtained tracings.

Contrary to my usual rule, I may perhaps be allowed to make a statement as to the future, and say a warning word to those managers—if any yet exist—who think the Act unnecessary, or that neglect of it will be passed by. At my next inspection I shall not think it requisite to exercise the same amount of forbearance that was exhibited in February. Ample time has been given, everything thoroughly explained, and any manager, whose neglect may lead him into trouble, will have himself only to blame. Living at this distance from Reefton (a district with Melbourne for a centre, and including Reefton and its boundaries, would be quite as accessible), and having other onerous duties, it is impossible at every visit to devote so much time to persuasion and waiting. The law is to be observed, and, if broken, the usual course against law breakers will be followed.

I have, &c.,

GEORGE J. BINNS,
Inspector of Mines.

The Under-Secretary of Mines, Wellington.

LIST OF QUARTZ MINES WITH NAMES OF MANAGERS.

NUMBER.	NAME OF MINE.	LEGAL MANAGER.	MINE MANAGER.
1	Golden Fleece Extended	G. W. Moss	John Trennery.
2	Golden Treasure	Thos. Lee	A. McKay.
3	Energetic	G. W. Moss	Jas. McCallum.
4	Wealth of Nations	W. Rae	Thos. Watson.
5	Keep-it-Dark	G. C. Bowman	—
6	Welcome	P. Brennan	F. Rooney.
7	Fiery Cross Extended	G. W. Moss	H. Currie.
8	Just-in-Time	G. Wise	J. Lawn.
9	Nil Desperandum	Thos. Lee	J. S. Treloar.
10	United Alpine	Jas. Inglis	Geo. Black.

No. 6.

REPORT UPON INSPECTION OF COAL MINES, NORTH AND SOUTH ISLAND DISTRICTS.

Mr. INSPECTOR COX to the UNDER-SECRETARY for MINES.

SIR,—

Mines Department, Wellington, 18th March, 1882.

I have the honor to inform you that during my late visit to Auckland I took the opportunity of inspecting the coal mines at work in that district, and herewith submit my report on the same.

Kawa Kawa Colliery.—Since my last visit to this mine, a good deal of work has been done, both as dead work and also in the broken. Several more pillars have been drawn, and the longwall workings in the upper seam have been finished. Another piece of longwall has been commenced, the roof being well supported along the road by chock pieces built up at intervals. The dip drive is now 800 feet from the bottom of the main shaft, the measures appearing more solid at this point than nearer the shaft, and the diamond drill is now being employed 800 feet further to the dip to prove the measures before further extending mining operations in this direction. The workings throughout this mine appear to be safe, the ventilation is good, and the provisions of the Act complied with.

Kamo Colliery.—Since the date of my last report an air shaft has been sunk to the rise of the workings in the lower seam with satisfactory results, and the ventilation now in these rise workings where all the men are employed is very fair. The workings in the upper seam have been stopped, owing to a supposed inferiority in the coal, and it is not proposed to work them again for the present. Boring operations are still being carried on with hand rods, and a good seam of coal is reported to have been struck in one of these. The workings are satisfactory, but the bad roof still necessitates the use of considerable quantities of timber. Much slack yet remains below ground, but at the date of my visit, 22nd February, this all appeared to be quite cool, and as pointed out by Mr. Black after my last report it is a somewhat difficult matter to dispose of this if drawn from the mine. It is to be regretted that the sale of this slack cannot be effected as is done in the Southern mines, even if no profit were made on it, as it would render the workings far safer from subterraneous fires.

Whau Whau Colliery.—The workings of this mine are still of a very limited character; but they are carried on in a workmanlike manner, and the ventilation is sufficient.

Taupiri Colliery.—Since my last visit a number of pillars have been drawn, and the work is still progressing, the pillars being successfully extracted; but Mr. Collins is not drawing many of these at present, and is exercising commendable care in the work. Considerable progress has been made in the dip workings since last I was here, and the forward workings are being carried on from parallel headings, a good and efficient ventilation being thus secured. The mine is now so far opened up as to ensure a large output at any moment, should the demand require it, and all the works are standing well. The Act appears generally to be carefully observed.

Waikato Colliery.—But very little work has been done here during the past few months, as the expense of sending the coal across the river has militated against the economical workings of the mine. The workings in the new mine are close to the old workings, to which they have broken through at several places. They are, however, never entered now except where at one or two places the new roadway is being taken. These old workings were opened on far too large a scale, and the present ones are also fully large. The dimensions which are supposed to be adhered to, are pillars 8 yards square, bords 14 feet wide; but there is a tendency on the part of the miners to widen the bords in driving, and Mr. McGlynn has continually to cut these down again to the original dimensions; this gives the mine a very bad appearance. The plan of the mine shows the pillars far narrower than they really are. I called Mr. McGlynn's attention to this, and he promised to have it rectified, as it is apt to give any one an erroneous opinion of the works. He has also promised to keep the workings to the dimensions noted. At the end of one of the bords, a fault is met with, and there appears to be some danger of falls occurring here; but it is being carefully watched. The roof stands remarkably well in this mine; but it would be all the better for a prop here and there, to give warning if any settlement is likely to take place; and I have called the manager's attention to this.

I have, &c.,

S. HERBERT COX,
Inspector of Mines,

The Under-Secretary for Mines, Wellington.

Mr. Inspector Cox to the UNDER-SECRETARY for MINES.

SIR,—

Mines Department, Christchurch, 11th May, 1882.

I have the honor to inform you that I have visited the more important mines on the eastern side of the South Island, and herewith submit my report on the same.

Springfield Colliery, Malvern.—I visited this mine on the 3rd of April, and went through the workings, which I find throughout are in satisfactory order, although the swelling of the fireclay floor has to a large extent reduced the size of the levels and headings, and rendered travelling rather difficult. The seam itself is not large, and the roof is very bad at places, so that a large amount of timber is employed; and this has throughout the mine been put in with care, and in a thoroughly workmanlike manner. The worst point in connection with this mine is the ventilation, the current depending entirely upon a steam jet on the upcast side of the one shaft by which the mine is at present wrought. In the main airway, which is small, the current is good; but where, as is necessary, it is split and taken to the different ends, it is frequently very weak. The day on which I visited the mine was very close, so that possibly there may be a better ventilation at times; but in addition to the fact that the main air course itself is small, there is the equally important consideration that the shaft itself is not adapted for ventilating any extensive workings; for the cage, occupying as it does at least half the area of the downcast shaft, leaves only a comparatively small downcast column, and the current is besides liable to baffle when the cage is in motion. Although I have alluded to this in my report, I have not considered it necessary to insist on any alterations for the present in view of the fact that, in September next, or six months from date, it will be necessary, in order to comply with the provisions of the Act, that a second outlet be provided, and the penalty imposed will, I think, be sufficient to ensure that this work will be done. This second outlet will probably take the form of a new shaft to the dip, and will involve an entire change in the system of ventilation. The provisions of the Act are carefully observed. I must not fail to note the great advance which has been made in the pottery industry here since last I visited the mine. At the present time drain-pipes, firebricks, and ornamental potteryware, some of which is of a very high class order of workmanship are being turned out, the clay used being also raised from the mine.

Canterbury Colliery, Malvern.—I visited this mine on the 4th April and find that since my last visit the workings have been considerably extended. The ventilation is now effected by means of an air shaft about 30 feet in depth, sunk to the rise of the workings and the air is directed by screens throughout its course. I found one screen down and the air excessively bad in one place where two men were working; but it was being remedied while I was at the mine. The workings here are carried on in two seams of coal with a parting about 20 inches thick of an inferior fireclay. The system employed is to first draw the lower seam, then rip down the clay which is used for packing, and then to draw the upper seam. The bords are being opened up rather wide (18 feet) at places, considering the treacherous roof; and I have called Mr. Austin's attention to the fact. He represents that if he opens them anything less he would have insufficient waste for packing and as this is important, I have requested him in event of his keeping up the full size to be liberal in the use of timber. The clay band which parts the two coals forms a very treacherous roof when holing, being traversed by a number of diagonal joints that are liable to cause sudden falls; and I find that the use of sprags is sometimes neglected. What might have proved a fatal accident occurred last week from this cause. A level had fallen in some time ago and a parallel one was being opened out close to the first, so that on one side the coal and clay was not supported at all. The man, who was injured, was a new arrival at the mine and the manager informs me that he had sprags, but did not use them. About a ton of coal came down bodily, but fortunately he was not below it at the time and did not receive any serious injuries. I have written to Mr. Austin requesting him to keep sprags supplied to all men at the face and not to depend on their getting them themselves. No plan exists of these workings and I have required one to be made.

Wallsend Colliery, Malvern.—Visited this mine on the 13th April and found the main shaft covered in and the air shaft fenced.

Homebush Colliery, Malvern.—Visited this mine on the 13th April and found the workings generally satisfactory, being driven narrow. The roof, however, falls at places; and little or no timber is used. The falls occur from a band of rock about one foot thick, which overlies the coal and Mr. Brown tells me that he takes this down whenever it shows any sign of falling, so that the place looks worse than it really is. At the far end of the main level the coal is very proud and keeps cracking in a somewhat startling manner. As a rule the noise is the worst of the matter, the coal

only shooting off the dip side of the drive in small pieces. In view, however, of a certain amount of danger from heavy falls I have requested Mr. Brown to put in slabs and stull pieces to support it; this shaling off also results in widening the level and thus would render the roof insecure. It is only towards the face that the coal is like this and after it has been exposed to the air for a little while it appears to become settled and no more falls occur. The ventilation has not been attended to in this mine and very little air was passing. This is explained to me by the difficulty experienced in obtaining brattice-cloth. I telegraphed to Mr. Binns on the subject and he subsequently informed me that he had sent them information as to where it could be procured. Two air shafts exist and a furnace in one of them; but this is not lighted, nor is it built in and the current of air frequently reverses. A good ventilation could be readily obtained here if attention be paid to guiding.

Hart's Colliery, Malvern.—I visited this mine on the 18th April, and find that it has been opened in a seam of anthracite which is 2 feet thick on an average, notwithstanding which the low and narrow workings have been extensively timbered. The greater part of this timbering is standing well, but a few of the bars are broken. On the day of my visit the air was by no means good in this mine towards the face, but this was, to a certain extent, due to a fall having occurred in the morning, blocking the air-way, and this was being remedied. There was, however, only a poor current in the main air course, owing largely to the position of the air-shaft, which is close to the entrance of the main tunnel, the door to which is only made of frames and sacking. I told Mr. Saunders that I should expect these things to be remedied, in event of the mine remaining in his hands, which he seems to consider unlikely.

Wilson's Colliery, Malvern.—I did not visit this mine, as the one man employed told me he was then engaged on ploughing.

Brockley Colliery, Malvern.—I did not visit, as I was informed that it was on the eve of changing hands, a Company being formed to take it over.

Shag Point Colliery.—I visited this mine on the 24th April, and found that the workings are now entirely to the dip in a seam which is inclined at an angle of about 1 in 4½, and which has been followed beneath the sea. The workings are throughout well timbered, but the extremely bad roof at certain parts of the mine make it of less value than would otherwise be the case. This roof frequently breaks off short close to the props, and numerous falls have occurred; but hitherto, I am informed, no accidents have ensued. A constant watchfulness is all that can be employed to avoid dangers of this sort, and Mr. Williams is fully alive to the necessity of exercising every care in this respect.

The air was good throughout the mine on the day I was there. The old workings to the rise, which at the date of my last report were on fire, I venture to hope are now successfully isolated, dams having been put in and the workings flooded. The main shaft is now nearly completed, and the cages are expected to be at work in the course of a week or ten days. A lower seam of coal is also being opened up from this shaft. The Act generally appears to be well observed.

Fernhill Colliery, Otago.—I visited this mine on the 1st May, and found that the present workings were small, consisting of a level from which a few bords had been broken off, some of which are at present standing, and this is connected with some of the old workings in which only two men are now employed. The ventilation, when I visited the mine, was satisfactory, a good current of air passing, and the timbering generally was sufficient.

In the old mine a drive has been put in crossing several of the old bords at an angle, and at the point of intersection some rather large chambers have been left. The roof is standing well, but I suggested to Mr. Shaw that it was advisable to place a few props to avoid any danger of falls, and he promised to do this. The provisions of the Act appear to be attended to.

Green Island Colliery.—I find the mine which I visited on the 1st May has, during the past year, done a good deal of work, and the points which I alluded to in my last year's report have been attended to. The drive is now well secured, and a second outlet has been effected by breaking through to the surface to the rise. The ventilation is good, and the mine in good order. The old shaft is not securely fenced, and I wrote to Mr. Richardson requesting his attention to this.

Walton Park Colliery.—I visited this mine on the 2nd May. In the pit workings the company have received liberty to carry on their works into the adjoining property, thus bringing their workings again into proper order. This power had only been accorded to them about six weeks before I visited the mine, and they had since been working night and day pushing forward their level and lower bords. A new V drive is also being put in to ease the haulage in these lower workings. The roof which I mentioned in my last report had been running up does not appear to have gone any further after arching. In the mine coal is still being got. A new shaft has been sunk for air, and a furnace erected. This furnace is only lighted on close days, and although it was not alight on the day I visited the mine, the ventilation was all that could be desired. It is, moreover, better guided than when I was here last. The mine workings are now going in the direction of some old workings in which water is standing, and Mr. Loudon has laid these down on his plan. He will also keep bore-holes ahead when he has gone a little further, but at present he is some distance from the water.

Freeman's Colliery.—This mine has been again on fire, and the workings are now confined to a small area nearer the railway. They have, however, taken up the old Otago Colliery Company's property, and intend pushing forward their works in the direction of the shaft. I was unable to go through this mine, owing to the state the rain had left it in; but as before stated, the workings are very small.

The Allandale Mine has been closed and abandoned.

Nightcaps Colliery, Southland.—The workings in this mine are in good order, and the air was very fair, considering that the main dip is bratticed, and the return air brought to a small shaft at the mouth of the drive. A new shaft was being sunk on the flat, and in a day or two will reach the coal, when a permanent ventilation will be secured, and the mine will then be further opened out. The open-cast workings on the thicker seam have now been stopped by a slip brought down by the heavy rains, and it is proposed to bring in water and sluice this away. The Act appears to be well observed, and the workings throughout to be safe. The steam gauge had been removed from the boiler for repairs when I was there, but was to be replaced immediately. I visited this mine on the 4th May.

Kaitangata Colliery.—This mine, which I visited on the 9th May, is being carefully worked, and the ventilation is very good. The principal part of the workings at present are situated on the dip, between the old Company's mine and the pit workings; but that part of the mine which has lately been closed in in consequence of some signs of fire being detected, has now been again opened, and a little work is being carried on there. A little gas had been found in one bord in the dip workings the day before I was at Kaitangata, and on the morning of the 9th, a little was to be seen at the top of one place in the mine. Great care is exercised to free the mine of any gas before the men go to work, and the whole of the workings are examined daily, with the exception of the old workings, which are closed off and ventilated by an independent shaft, and these are examined twice a week. On the day of my visit we found a little gas in these workings at two places, one under a ledge at the top of a high chamber, where it always shows if any be present in the mine at all, and again at the top of the chamber where the explosion of 1878 is supposed to have originated; but in both these cases it was only to be detected close to the roof. This is the first time for months past that gas has been seen in the old workings, and the exceptionally low glass which had prevailed for a fortnight previous (it was standing at 29.00 on the 9th), fully accounts for it being seen on this day. Mr. Samson is not quite satisfied with the ventilation of this part of the mine, and proposes making some changes shortly. The greatest care appears to be exercised in all the work, and the Act is observed in all its details.

[In reply to a question on the 17th May, Mr. Samson telegraphed—"The fireman and myself examined all the old workings at 9 o'clock this morning, they were all clear of gas, and all the other workings the same."]

I have, &c.,

S. HERBERT COX,

Inspector of Mines.

The Under-Secretary for Mines, Wellington.

Mr. Inspector Cox to the UNDER-SECRETARY for MINES.

SIR,—

Mines Department, Wellington, 27th May, 1882.

I have the honor to inform you that I have just returned from a visit to the West Coast Coal Mines, and herewith submit my report on the same.

Brunner Mine, Greymouth.—I visited this mine on the 19th May, and am pleased to state that now all work in the broken has been discontinued. The works at present being carried on are at opposite ends of the lease, that to the rise being a continuation of what was started, when I was here last year, beyond the fault at the upper part of the mine. These workings have been carried on far too wide for the ultimate safety of the mine, the bords being opened from 10 to 14 yards in width, notwithstanding the experience acquired in the old workings. Under Mr. Tattley's management these wide workings have been discontinued, and no bord is now opened more than 6 yards in width; Mr. Tattley assures me that these dimensions will be adhered to as long as he has charge. There were several instances of sprags not being set where they were necessary, and Mr. Tattley proposes to amend the Special Rules so as to make it compulsory for miners to set sprags as soon as they have room to do so. Some such step appears necessary where men will not set the requisite timbers without direct orders at the time from the manager or underviewer. The other workings, which are to the dip of the main tunnel, are small, but in good order; a brattice is down the main incline to guide the air, the ventilation is fair, and, when their connections are completed, will probably be good; the air in the rise workings is weak, and the powder smoke hangs. Several changes are in progress which, when completed, will place it again on the footing of a well worked mine. No accumulation of gas has been found in the workings, but there is still some in the stone drift, and a very small feeder has been struck in the rise workings. The mine is examined daily. The water in the dip workings is light, but an incline from the lowest level, running about 2½ chains from the lowest bord of the dip workings, was literally filled with slack and water during a heavy flood which occurred a short time back.

Coal Pit Heath Colliery.—I visited this mine on the 19th May and found all the works in good order and well carried on. A little gas still exists in the mine, which can generally be detected in the mornings when the mine is inspected; but it clears very soon after the furnace is lighted and the men are not allowed to go to work until all is clear. The ventilation is very good and the Act is carefully observed. This mine has been troubled with far more water lately and it has taxed their machinery to the utmost to contend with it, indeed the mine has several times been closed for some days in consequence.

Lankey's Gully Mine, Reefton.—I visited this mine on the 21st May. The workings appear safe, timber is used freely and well set; but the coal is got on no system.

Conolly's Mine, Reefton.—This is the same as Gulline's Mine, but the old workings are on fire and abandoned. The present works consist of two short drives at opposite ends of the lease, which are in good order. The wire-rope used for lowering the coal from the terrace is in bad repair, but only small loads are being sent down, and these are delivered into a paddock so that no accident need be apprehended from a truck breaking away.

Breen's Mine, Reefton.—A drive has been put in and cut the coal, and the shaft mentioned by Mr. Binns is in disuse. I requested Mr. Breen to cover this in, and he promised to comply.

Banbury Colliery, Westport.—I visited this mine on the 24th May, and found all the works standing well and in good order. The ventilation is not very good, but a furnace is in course of construction, and in a fortnight's time this should be at work, and a thoroughly good current of air passing. This furnace was proposed last year, but has only now been carried out. The output of this mine is increasing largely, and is only limited now by the capabilities of the inclined tramway. The Act is carefully observed.

Koranui Colliery is not yet at work.

I have, &c.,

S. HERBERT COX,

Inspector of Mines.

The Under-Secretary for Mines, Wellington.

RETURN NO. 1.

STATISTICS OF WORKINGS IN COAL MINES, 1881.

Number.	Name of Mine and Locality.	Name of Manager.	Number of Years Working.	Quality of Coal.	Number of Seams Worked.	Thickness of Seam.	Thickness Worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.	Output Delivered by	Output for 1881.	Approximate Total Output to 31st December, 1881.	Number of Men Ordinarily employed.	Power used for Draining Mineral.	Stroke of Pumps.	Size of Barrel.	Height of Column.	Ventilating Power.	Date of Inspector's last Visit.
1	KAWAKAWA DISTRICT. Kawakawa, Bay of Islands	Moody, T. P.	17	semi-bitum.	1	feet. 4 to 15	feet. all	varies	bord and pillar and a sm. por. longwall	2	7' x 10' and 5' x 5'	engine incline	tons. 50,277	tons. 446,525	135	steam engine	6	12" & 12"	247'	furnace	22/4/82 & 24/4/82
2	Kamo, near Wangarei	Kerr, George	5	brown	1	5 to 12	"	"	bord and pillar	1	"	tunnel	10,173½	24,332	19	hand and horse	"	"	natural	29/4/82	
3	Whau Whau, near Wangarei	Love, Alexander	17	brown	1	5 to 9	"	"	"	1	"	"	2,084½	19,556½	5	horse	"	"	"	29/4/82	
4	WAIKATO DISTRICT. Taupiri, Huntly	Collins, W.	6	brown	2	6 to 40	6 to 16	"	"	1	5' 3" diameter	engine incline	20,334	73,637	40	steam engine	Tangye	"	85'	"	13/4/82
5	Waikato, Kupa Kupa, Huntly	McGlyn, A.	5	brown	1	10 to 18	all	"	"	"	"	tunnel	7,860½	41,855½	10	horse and hand	"	"	"	12/4/82	
1	PELORE DISTRICT. Picton	Renfrew, John	1	"	"	"	"	"	"	"	"	"	75	75	2	"	"	"	"	"	28/11/80 & 20/2/82
2	Picton	Syns, W., owner	1	"	"	"	"	"	"	"	"	"	0	50	0	"	"	"	"	"	28/11/80
3	WEST WANGANUI DISTRICT. Wallsend, Collingwood	"	13	bitum.	2	27" to 32"	all	W. 12½°	longwall	1	6' x 6' x 45'	drive	Nil	7,052	0	hand	"	"	natural	12/2/81	
4	Westport DISTRICT. Mohikini, Mohikini	"	1½	pitch	2	6½' to 7' 3½"	"	N. 20° E. 1 in 5	bord and pillar	2	6' x 3' x 15' 6' x 3' x 29'	"	"	"	0	hand, and self-acting inclines	"	"	"	7/12/80	
5	Koranui, Waimangaroa, Westport	Ferguson, A.	1	bitum.	"	4' 6"	all	W. 7°	bord and pillar	"	"	drive	Nil	4,403	6	"	"	"	"	"	24/2/81
6	Banbury	Denniston, R. B.	3	"	1	6"	"	"	"	"	"	"	coal 21,693 slk. 2,505	31,880	50	hand, and self-acting inclines	"	"	natural	"	
7	Energetic, Reefton	McCallum, J.	6	pitch	1	10' 2"	"	S.W. 22½°	"	"	"	"	852	3,094	2	hand	"	"	"	"	3/9/81
8	Golden Treasure, Reefton	McKay, A.	10	"	1	6'	"	S. 30° E.	"	"	"	"	270	996x	1	"	"	"	"	"	22/8/81
9	Lankey's Gully	Irving, W.	"	"	1	11'	9'	W. 8°	"	"	"	"	310	1,140	1	"	"	"	"	"	27/8/81
10	Newcastle	Breen, A.	7	"	1	9'	6'	S.W. 32°	"	1	6' x 3' x 40'	"	Nil	2,660	3	"	"	"	"	"	31/8/81
11	Dudley	Joice, M.	8	"	1	21"	all	N. 25° W. 25°	"	"	"	"	coal 150 slk. 20	387	2	"	"	"	6' 8"	"	27/8/81

RETURN NO. 1—continued.

STATISTICS OF WORKINGS IN COAL MINES—continued.

Number.	Name of Mine and Locality.	Name of Manager.	Number of Years Working.	Quality of Coal.	Number of Beams Worked.	Thickness of Seam.	Thickness Worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.	Output Delivered by	Output for 1881.	Approximate Total Output to 31st December, 1881.	Number of Men Ordinarily Employed.	Power used for Draining Minerals.	Stroke of Pumps.	Size of Barrel.	Height of Column.	Ventilating Power.	Date of Inspector's last Visit.
36	St. Andrew's, Oamaru	Willett, J.	3	brown	1	6½	feet. all	E. 13°	bord and pillar	..	4' diameter x 26' x 36'	drive	224	4,793	1	hand	..	..	..	natural	6/10/81
37	Ngapara, Ngapara	Nimmo, James	3	"	1	25'	7 to 8	N. 5°	"	1	4' 6" x 2' 8" x 36'	"	861	2,819	2	"	..	..	..	"	7/10/81
38	Glenfield, Herbert	Nimmo, John	1	"	1	6'	5	N. 60° E. 1 in 7	"	1	4' x 4' 6" x 36'	"	210	210	3	"	..	..	..	"	12/8/81
39	Shag Point, Palmerston	Williams, W. H.	19	pitch	1	7'	all	E. 1 in 4	"	2	5 x 5 x 60 x 50 13 x 5 x 247	engine plane	coal 28,673 slk. 1,336	116,513	81 u. 23 o.	engine 12 h.p.	12" 12"	3" 6"	130' 130'	varies	22/12/81
40	Hill's Creek, Hill's Creek	Davis, Henry	17	lignite	1	30'	10	S. 30°	openwork	..	..	..	20	80x	1	..	2"	6"	20'	..	6/4/81
41	Idaburn, Rough Ridge	Grant, W. A.	11	"	1	23'	all	N. 10°	"	..	..	..	1,023	6,211	2	hand	..	..	20'	..	5/4/81
42	Mount Ida, Upper Kyebrum	Veale, Samuel	2	"	3	9'	12	S.W. 67°	narrow	..	..	..	Nil.	Nil	1	hand	..	..	20'	..	1/4/81
43	Dunsmuir's, St. Bathian's	Dunsmuir, A.	15	"	2	12 x 18	7	N. E. 1 in 3	openwork	..	..	..	190	460	1	..	..	..	..	..	5/4/81
44	Crossan's, Naseby	Crossan, H.	..	"	1	9'	all	level	"	..	..	..	85	1,085	1	..	..	..	..	..	6/4/81
45	Cambrian's, St. Bathian's	Jones, J. R.	..	"	1	25'	all	W. 10°	"	..	..	..	1,652	2,627x	3	..	..	..	..	..	5/4/81
46	Swineburn, Kyebrum	McAra, C.	2½	"	1	..	..	N.E.	..	..	..	..	67	185	1	hand	..	..	..	..	31/3/81
47	Last Chance, Hyde	McAuley, H.	2	brown	1	13'	6	1 in 75	bord and pillar	1	4' x 2' x 23'	"	54	104x	2	"	6"	2"	23'	natural	31/3/81
48	Kyebrum, Kyebrum	McCreedy, D.	8	"	3	25'	12	W. 60°	narrow	1	2' 6" x 4' x 20'	"	1,195	9,368	3 u. 1 o.	horse	..	..	..	"	1/4/81
49	Perseverance, "	Stuart, John	3	lignite	3	6' to 16'	12	"	"	1	2' x 3' 6" x 50' 5' x 2' 6" x 50'	shaft	780	1,190	2	hand	..	..	..	"	1/4/81
50	Alexandra, Alexandra South	Thomson, W.	..	brown	1	14' to 15'	6 to 7	S. 75° W.	bord and pillar	2	5' 6" x 2' 9" x 60'	"	780	6,175	1 u. 1 o.	horse	..	..	..	"	25/5/81
51	Manuhirika	Jackson, T.	3	"	1	12'	6	slight N.W.	"	1	x x 45'	"	400	1,420	1 o.	"	..	..	..	none	25/5/81
52	Perseverance, Cromwell	McNulty, E.	2	"	1	6' to 7'	3' to 3' 6"	slight N.W.	"	1	6' x 3' 6" x 81'	"	248	848	2	"	..	..	..	"	21/5/81
53	Bannockburn	Smith, James	..	"	1	12'	6	N. 70° W.	"	1	..	drive	986	3,288	2	hand	..	..	..	natural	21/5/81
54	Kawaran	Pryde, John	4	"	1	5' 6"	5	E. 60°	narrow	..	..	..	312	2,050	2	"	..	..	..	"	21/5/81
55	Clyde (Collins'), Clyde	Collins, T. M.	10	"	1	20'	10	S.E. 5°	bord and pillar	2	4' x 3' 6" x 36'	shaft	860	2,880	1 u. 1 o.	"	..	..	"	"	23/5/81
56	Clyde (Holt No. 1), Clyde	Holt, J.	..	"	..	20' x	..	..	..	2	4 x 4 x 140	"	Nil.	15,500	0	water horse	..	..	..	fan	23/5/81
57	Clyde (Holt No. 2)	"	1	"	1	16'	12	1 in 1 W. 50°	..	2	3 x 4 x 170x	"	92	92	2 u. 1 o.	"	..	..	..	"	23/5/81
58	Earnslough	Buckley, John	5	"	1	16'	12	W. 50°	bord and pillar	1	..	"	525	1,125	1 o.	"	..	..	..	natural	23/5/81
59	Gibbstown, Arrow	Williams, S.	..	"	1	..	..	..	openwork	..	..	..	1,200 300	3,250	4	..	..	..	..	..	..

RETURN No. 2.

TABLE of ACCIDENTS IN COAL MINES during the Year ending 31st December, 1881.

No.	Date.	Name of Mine.	District.	Cause of Accident.	Fatal.	Non-Fatal.	Name of Sufferer.	Remarks.
1	5 Jan.	Shag Point ..	Otago ..	Fall of dirt ..	..	1	Routledge, H. ..	Slight
2	15 Feb.	Banbury ..	Westport ..	Fall of coal ..	1	..	Hewitt, W. ..	
3	7 June	Springfield ..	Malvern ..	Run over by tram ..	1	..	Duggan, F. ..	
4	13 July	Shag Point ..	Otago ..	Slipped on drag of set ..	..	1	Edwards, J. ..	
5	13 July	Shag Point ..	Otago ..	Fall of dirt ..	..	1	McKenzie, A. ..	Slight
6	12 Aug.	Abbotsroyd ..	Otago ..	Fall of coal ..	..	1	Young, W. ..	Serious
7	31 Aug.	Canterbury ..	Malvern ..	Fall of dirt ..	1	..	Phillips, L. ..	Trespassing
8	16 Aug.	Shag Point ..	Otago ..	Fall of dirt ..	..	1	Henderson, H. ...	
9	4 Dec.	McLachlan's ..	Otago ..	Choke damp ..	1	..	Callander, A. ..	Trespassing

RETURN No. 3.

RETURN of the QUANTITY of COAL IMPORTED into and EXPORTED from NEW ZEALAND during the Year ended 31st December, 1881.

Countries whence Imported.	Coal Imported.		Countries to which Exported.	Coal Exported.	
	Quantity.	Value.		Quantity.	Value.
	Tons.	£		Tons.	£
United Kingdom	1,780	1,312	New South Wales	2,870	2,870
New South Wales	127,501	155,617	Victoria	2,919	1,892
Victoria	1½	10	Tasmania	260	260
Tasmania	30	36	Norfolk Island	0½	1
Cape Colony	500	700	New Caledonia	10	8
Natal	150	150	Fiji	21	25
			South Sea Islands	542	555
			United States—on the Pacific	4	10
Totals	129,962½	157,825	Totals	6,626½	5,621

REMARKS.—3,320 tons, value £3,320, exported from Russell; and 2,918 tons, value £1,890, exported from Greymouth.

Customs Department, Wellington,
3rd June, 1882.

WILLIAM SEED,
Secretary and Inspector of Customs.