1886.

NEW ZEALAND.

INSPECTION OF MINES

(ANNUAL REPORTS OF THE INSPECTORS ON).

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

No. 1.

Mr. Inspector McLaren to the Under-Secretary of Mines.

Sir,— Thames, 12th June, 1886.

I have the honour to report on the coal-mines in my district for the year ending the 31st December, 1885, and, as requested by the late Under-Secretary of Mines, I bring my report up to the latest date.

The number of working mines remains the same as for last year, but the output from them steadily increases from year to year, being for 1885 111,734 tons, for 1884 103,856 tons, and for 1883 92,761 tons.

1. *Kawakawa Colliery.*—An accident occurred to this mine in the early part of the year through the collapse from the surface of one of the old workings near the outcrop. As this happened during an exceedingly heavy rainstorm and flood, the water rushed in, carrying mud and *débris* down through the levels into the shaft, choking up the pumps. They were endeavouring to draw these when I was at the mine in February last, and were ultimately successful. The water had then risen to No. 2 Level, but the works did not appear to be in any way damaged. On my last visit (1st and 2nd June) I found the workings in good order, great care being taken to prevent accident by keeping the timbers close up to the various faces. The ventilation was also good. This mine continues to be under the management of Mr. T. P. Moody. The output in 1885 was 37,172 tons, and in 1884 30,274 tons.

2. *Kamo Colliery, near Whangarei.*—On visiting this mine in February last I found it had been allowed to get into a bad state. Its condition may perhaps be best shown by the correspondence enclosed herewith. On my last visit, on Saturday, 5th instant, I found the workings very much improved in No. 2 seam, and the ventilation good; but there is far too much slack allowed to remain in the mine, which heats it very much. As, however, a patent screen is now being erected to deal with the slack, and should be shortly ready for work, the removal of all slack from the mine may soon be expected. From the fact having been proved that the seam dips away from the bottom of the shaft in a northerly direction, it is evident that to continue in this direction the shaft must be deepened and an undercut made to the coal.

3. *Whau-Whau, now called the Whangarei Mine, near Whangarei.*—On account of bringing in a branch from the Whangarei-Kamo Railway, works in this mine were stopped from January to August, 1885. When I visited it in February last the workings were all in good order, but the air was very sluggish and heavy, to which I drew attention. On my visit of the 7th instant I found a great improvement had taken place in this respect, Mr. Love, the manager, having in the meantime erected a ventilating-chimney, 50ft. high, at the mouth of the old drift at the head of the rise. Towards the north, in prospecting, the coal has been found to dip very heavily. So far as they have gone in following it, a hand-pump has been sufficient to keep the water clear, but should the coal continue to dip further, and not merely prove a heavy roll, pumping-machinery will be required.

4. *Waikato Colliery, near Huntley.*—I visited this mine last on the 29th ultimo, and found that Mr. Taylor still continues to keep it in very good order. The coal is also being taken out much more scientifically than formerly, thereby winning much larger coal; this being necessary, as the coal is of a very tender nature. The headings that were being driven last year, and were mentioned in my report for 1885, have now reached their destination. Two headings are

Note.—The numbers given with the mines correspond with those in Table No. 1.

now being commenced to open up the dip-coal on the north side which has been proved to exist by borings taken last year. A wharf and railway-siding are being constructed at Huntley to allow the coal from this mine being loaded into the trucks, instead of conveying it by water to Mercer as at present. This, together with the improvement in quality, should cause an increase in the demand, as the coal will reach the market direct, instead of being several days on the road exposed to the atmosphere, as it now is.

5. *Taupiri Colliery, Huntley.*—In the higher workings about 200ft. of narrow work has been driven in a north-easterly direction. The coal thins out here towards the swamp, and is very irregular both in roof and floor. The pillars are all standing well in this part. No coal has been taken from the middle workings since my last report; but in August last a fire occurred through spontaneous combustion in three bords that had fallen in. This has been stopped with sand, and the fire has every appearance of being entirely extinguished. It proved very severe on the men when trying to stop it. About 130ft. of headings were driven in the lower workings, and the coal was found to thin out near the swamp adjoining the Hakuoa Lake. On the west side of the mine the coal was found to take a dip, and an incline was driven of 1 in 5, following it, at the foot of which a height of 14ft. of coal was obtained, of very good quality. A new sixteen-horse-power Tangye pump has been placed inside, as the old one was found to be insufficient, and a large upright boiler outside, and the tubing of the old boiler removed. There are now two winding-engines and two pumping-engines, with an aggregate of about forty-six horse-power. The first accident that has occurred in this mine took place on the 22nd ultimo to a man named George Smith, an old, experienced miner. It was caused by a fall from the roof. The coal did not fall directly on him, but caught him sideways and broke his leg. When I reached there on the 28th May, I visited the place and found that everything had been left as it was at the time of the accident. It appears that the underviewer (Mr. Coxon) was at the place about twenty minutes previous to the accident occurring, and, not liking the sound of the roof, ordered it to be timbered at once. Smith was in the act of preparing to do this when a wedge-shaped piece of coal, about 6ft. long and 2ft. wide, broke away suddenly from the roof, and partially jambed his leg against some soft coal. I visited Smith on Sunday, 30th ultimo, when he informed me that he considered no one was to blame. This mine continues to increase its output, yielding 37,225 tons in 1885, against 35,470 tons in 1884. It still continues under the management of Mr. Collins.

Accidents.—During the year 1885 and up to the present date there were no accidents to any of the miners other than that to which I have alluded at the Taupiri Mine.

General Remarks.—It was expected that the works at the new mine at Maramarua, near Foote's old mine, would have been started by this time. I believe the canal is cut; but some machinery has yet to come from England for the steamer to tow the barges.—The borings on the education reserve near Huntley have, I understand, been continued till lately, but I have not heard with what result: 16ft. of coal was formerly stated to have been the result.—At Whareora, about eleven miles from Whangarei, which I visited about two years ago, and where I found an outcrop of coal about 2ft. thick, further prospecting has been carried on. A shaft 33ft. deep has been sunk under the charge of Mr. Love, of the Whauwhau Mine. This has developed two seams of coal —one of 3ft. 3in., and the other 6ft. in thickness, both of these thickening in the shaft towards the dip. It is a brown coal, but apparently one of a superior quality.

I have, &c.,

JAMES M. MCLAREN,

The Under-Secretary of Mines, Wellington. Inspector of Mines.

No. 2.

Mr. Inspector BINNS, F.G.S., to the UNDER-SECRETARY of MINES.

SIR,— Dunedin, 5th May, 1885.

I have the honour, in accordance with section 40 of "The Regulation of Mines Act, 1874," to make the following report for the information of His Excellency the Governor:—

During the eleven months that have elapsed since my last report was sent in the whole of my time, excepting about a fortnight spent in examining the Kanieri Coalfield, has been devoted to fulfilling the duties incidental to my position as Inspector under "The Regulation of Mines Act, 1874," and "The Westland and Nelson Coalfields Administration Act, 1877." Reports have already been made on two inspections of the Reefton quartz-mines.

Attached to this report are tables of statistics and accidents—the latter not quite so numerous as during the previous year. I have to thank those managers and owners who have kindly furnished me with particulars of outputs, &c.

The following report gives a short account of any matter of interest appertaining to each mine:—

Pelorus District.

Picton Coal-mine, Picton.—During the year 1885 this mine has been quite idle. In December last, while at Picton, I made inquiry as to whether the shafts were properly fenced, and was informed that they were.

West Wanganui District.

6. *Wallsend Colliery, Collingwood.*—Visited on the 17th March last, at which date twenty-four men were employed. As the seam varies much in thickness, being nowhere very large, and the usual bands of shale are still present, the working is rendered very expensive. The air seemed pretty good, and after an uprise, which was momentarily expected to thirl, had made a communication between the two districts, it would doubtless be better. Last year the brake-band on the surface-incline gave way, and caused considerable damage. Fortunately, no one was injured, and the defective machinery has since been replaced by a new drum and gear. Reports are duly kept, as is also a plan; but boys are illegally employed, and the rules are not properly exhibited.

Westport District.

7. *Mokihinui Coal-mine, Mokihinui.*—This mine has again made a commencement, and has been twice visited. In December last three men only were working below, the majority of the staff being employed on surface-work. The coal-seam in the heading had at that time become disturbed by a fault, and has since divided into two separate seams, separated by a band of dirt. At my last visit—in March—I examined the outcrops in Coal Creek, where several places occur at which workings could be commenced. Each outcrop, however, appears to be accompanied by some dislocation of the strata. As no definite workings have been carried on, the Act is not observed.

8. *Koranui Coal-mine, Westport.*—During 1885 this property passed into the hands of the Union Steamship Company (Limited), who have raised the output from 5,989 tons in 1884 to 30,539 tons in 1885. The coal appears to be getting harder, but the field is still much traversed by faults. On the 24th March last eighty-seven men were employed, of whom sixty-three were below-ground. The air was moderately good, and timbering, &c., attended to. Reports also were kept; but the register of boys was incomplete. Speaking generally, Mr. Jemison seems to observe the law, though the ventilation is not very excellent. The expense incident upon upwards of three miles of surface-haulage still continues, and will do so, as the workings are gradually extending further from the incline. A project has been mooted to start at No. 4 brake, and run a line round the hill to tap the base of the coalfield. Small locomotives would then be used for haulage, and, no doubt, a saving would be effected.

9. *Banbury Coal-mine, Westport.*—The output from this mine has been most unfortunately diminished by a very lengthened and determined strike, which lasted nearly seven months, and, together with an unusually bad harbour, caused a reduction in the output of 26,717 tons. In August I found that boys were in the habit of entering the mine before 8 a.m., and of staying at work therein until 4.30 p.m., or upwards of eight hours and a half, without counting the time required for coming out. As this was by no means permissible, I wrote to Mr. T. Brown, the new manager of the mine, requiring compliance with the law, which was at once responded to. This, however, did not meet with the approval of the Miners' Union, who wrote to the Minister of Mines pointing out that, firstly, the boys' wages were reduced; and that, secondly, by coming out early they encountered the danger of walking on the endless-chain road during working-hours. Having been directed to investigate this matter, I met on the 1st December last a deputation from the committee of the Miners' Mutual Protection Society, who appeared desirous of extending the hours during which boys may be legally employed below-ground. On this point I was able to offer no encouragement. Regarding the complaint as to the danger of walking on the chain-road during working-hours, in the report for last year will be found a notice of a new road which Mr. Elliott was making; but, unfortunately, owing to inequalities in the seam, the formation of this road has become so costly that its completion is impracticable. Another course open was, naturally, for boys to walk over the surface and enter by one of the numerous adits; the objection to this being the wet weather, which is exceedingly prevalent. There were, altogether, only five boys who were affected by this section. The workings are now all in the thick seam, of which only 16ft. is worked, the remaining 3ft. being left to support the roof, which is bad. The ventilation, in spite of having received a large amount of attention, is still not good; nor can it, indeed, be reasonably expected to be so when a 6-feet fan, driven by manual labour, is the motive-power. However, the men speak of it as much improved, and it is to be hoped that before long the company will be in a sufficiently-permanent field to make the erection of a capable fan advisable. On the 25th March my latest inspection was made. The mine was at work, but, owing to the frequent fractures of the endless chain, very little coal was coming out. Several improvements in the hauling-plant have been made, but it still works badly. The coal varies somewhat in thickness and quality, and in my opinion Mr. Brown is taking out too large a proportion at the first working. Altogether the mine seems to be managed with a considerable amount of attention to safety and the provisions of the Act.

10. *Murray Creek Coal-mine, Reefton.*—This is a good example of the average Reefton coal-mine, the method of working which, with its attendant waste and insecurity, I have frequently had to mention. On the 18th August last the working-place was very unsafe, being completely gutted and unsupported by timber. Mr. Trennery, the owner, to whom I spoke on the subject, informed me that it would be closed in a couple of days. On the 27th November the workings had assumed a partially open-work character, and looked a little better. On the 2nd April the place was temporarily abandoned.

11. *Golden Treasure Coal-mine, Reefton,* is now at work on a small scale.

12. *Lankey's Gully Coal-mine, Reefton.*—On the 15th August, 1885, this mine was last visited. The coal was faulty, and, as usual, a new drive had been put in. Timber very good. The workings have since been stopped.

13. *Inkermann Coal-mine, Reefton,* was visited on the 19th August, 1885, at which time the workings were in good order, but too much ground appeared to be open on timber. The seam dips at an angle of 60°. On the 2nd October I wrote requesting attention to this source of danger; and on the 2nd April, 1886, found that still more ground had been left standing. The reason given by the manager is this: that no filling can be obtained. Certainly no mine could be better timbered or worked, and, as the manager has in places lathed and filled in a set, I suggested that it would be advisable to support the roof in this manner. An excessive quantity of powder was allowed in the mine.

14. *Billett's Coal-mine, Boatman's.*—Mr. J. Billett started this mine in the winter of 1885; but its life was very short, which was a good thing, as the works were badly carried out, and might have resulted in injury.

15. *Boatman's Coal-mine, Boatman's.*—On the 21st August, 1885, very little was being done here, and on the 1st April last the workings were in better order than usual.

16. *Burke's Coal-mine, Boatman's.*—This mine is worked in an 18ft. 6in. seam in Little Boatman's Creek, and for a good many years the output has been exceedingly small. The workings, however, are in good order, and the owner seems to have an intelligent plan of future operations.

17. *Phœnix Coal-mine, Reefton.*—Two inspections of this undertaking have been made. On the former occasion—8th August, 1885—two boys were amusing themselves in the mine, one in a very insecure place. On the latter occasion—2nd April, 1886—the workings were an enormous width, standing on timber. Of course, when the timber becomes rotten the collapse of the mine is inevitable.

18. *Brunner Coal-mine, Greymouth.*—The output from this mine has greatly increased during the past year, Mr. Bishop having succeeded in attaining an output of six figures. Unfortunately, the coal beyond the fault, past which it has been proved for twenty chains, has turned out to be, though pretty good in quality, only about 8ft. thick, or half its former thickness. Gas still exists in some portions of the mine, which are worked with safety-lamps. Most of the pillars in the rise have been worked out, and a very considerable proportion of the coal has been obtained. As a fault has been met with in the rise-level, the available quantity of coal in this district is small. A somewhat unusual, though not very extensive, outburst of gas took place in this portion of the mine, which, had the men been working with open lights, might have had disastrous results. In November last I found a boy to whom Special Rules had not been supplied, and some men using iron bars for the first tamping. At that time the air in the fault-district was sluggish, and the men complained of powder-smoke. In fact, the ventilation generally has become slack, and some change will be necessary. Mr. Bishop proposes to remove the fan. A system of haulage which is new to the colony has been introduced at this colliery: this is the endless rope used as a tail-rope. It works very well on the lower level for a distance of twenty-seven chains, and will, no doubt, be continued.

19. *Coalpit Heath Colliery, Greymouth.*—During the year all the workings in this mine have been to the dip, as the fault has barred further progress on the level. The company have replaced the old pumping-gear by a "Special" pump, the exhaust steam from which escapes into the return and materially assists the ventilation. In September, 1885, I examined the old workings without discovering gas. During this month the mine-mouth was left partially unfenced, and a tub fell down: notwithstanding this accident, the shaft was insufficiently fenced at the time of my last visit—in April, 1886. The custom of unhooking the engine-plane set while the tubs are in motion is not very safe; and in October, 1885, I sent Mr. Alexander a sketch of a jockey, or automatic detaching apparatus, which has not as yet been adopted. In November last some of the bords were very much too wide; but in April this defect was less noticeable. At the time of my inspection in April last the air was very good, the Schiele fan which Mr. Alexander has erected having turned out a complete success. The quantity of air in the return from the dip-workings was 31,548 cubic feet per minute; and the total return on another occasion was 35,765 cubic feet per minute. The wooden stoppings are still in places defective, but are being gradually replaced by stone walls. A new head-gear has become necessary as the old timber is worn out, and the manager is taking steps to replace it.

20. *Tyneside Colliery, Greymouth.*—A short distance above the old Wallsend No. 1 Colliery (tabulated in the returns for 1882 as No. 2), where the coal is faulted down to the south-east, and dips E. 20° S. at 1 in 3½, there is an old drive, a little above ordinary river-level, which was worked a few years ago. Messrs. Kilgour and Wickes have leased this area from the Westport Coal Company, and continued the old drive. As the adit was below flood-level, and the coal turned out, as was naturally to be expected, somewhat faulted, the owners decided to work the lease by means of the old Wallsend No. 1 shaft, which they cleaned out, and at which substantial engines, screens, head-gear, &c., are in readiness. An unfortunate misunderstanding with the Railway Department as to the location of the screens has stopped operations for the present, and in April last nothing was being done.

21. *Wallsend Colliery, Greymouth.*—At length there appears to be a prospect of an early output of coal from this property. The sinking of the No. 3 Shaft has proceeded, not only with rapidity, but with perfect safety. The plant is of the most substantial character, the engine consisting of a pair of 30-inch cylinders with 5-feet stroke, and acting direct on to a 16-feet drum fitted with a steam-brake. Sinking has for some time been carried on with this engine, which works as smoothly and easily as possible. The head-gear will be of wrought-iron, and upwards of 50ft. in height to pulley-centres. A Guibal fan, 30ft. in diameter, is already on the ground, and should be erected at once, as there will probably be at first a very considerable quantity of gas to contend with. As the No. 3 Shaft has been sunk over old workings, it was decided to bore down before breaking through. On the 27th ultimo Mr. Elliott telegraphed to me that coal had been struck in the bore.

22. *Springfield Colliery, Springfield.*—There is nothing new to report of this colliery, the workings of which have been carried on under Mr. Lindop's supervision without alteration, and with safety to all except one man, whose finger was crushed in the railway-points.

23. *Canterbury Colliery, Sheffield.*—In January last this mine was inspected, when the air was bad, timber defective, and weekly report neglected. I wrote to Mr. Austin immediately about these points.

24. *Baron's Coal-mine, Sheffield.*—In 1885 Mr. Baron wrote to inform me that he had recommenced work at his mine, which I inspected in January. There was nothing worth mentioning except that the timbering was defective, about which I wrote to the owner in the same month.

25. *Homebush Colliery, Glentunnel,* was temporarily closed at the commencement of this year, but it is now working again in a small way. Some of the men told me that prior to the stoppage the air had been very bad, and, as some motive-power is almost invariably necessary, while none exists here, I can easily credit the assertion. Nothing has been done to prove the fault on the level. Generally speaking, the Act has been observed.

26. *Hartley Colliery, Whitecliffs.*—At my last visit I considered the mine in very bad order. The working-places are all mixed up with old drives, which causes the whole place to weight, the timber to break, and altogether makes the roadways in a very dilapidated condition. The air was pretty good, and plans, reports, &c., kept.

27. *Whitecliffs Colliery, Whitecliffs,* is now closed.

28. *St. Helen's* (*No.* 1) *Coal-mine, Whitecliffs.*—On the 15th January I examined this mine, which had then been working a few months. The air was good and the timbering all right. On the 22nd January I wrote to Mr. Smart, requesting him to have a plan made, and send Special Rules up.

29. *St. Helen's* (*No.* 2) *Coal-mine, Whitecliffs* (*formerly Smith's Mine*).—Under the same management as No. 1, and was visited on the same date. Two men only were employed, and the mine seemed in good order.

Timaru District.

33. *Elephant Hill Coal-mine, Waimate,* was visited on the 14th October, 1885. As it is now used solely for station purposes, the output is very small.

34. *Studholme's Coal-mine, Waimate.*—This is a new mine; and there are two seams, 5ft. and 8ft. 4in. respectively, separated by six inches of soft shale, and rising at a gentle angle into the hill. The coal analyzes pretty well, and should prove of value.

Otago District.

35. *Wharekuri Coal-mine, Wharekuri.*—When this mine was visited in September last the air was pretty good, though insufficiently guided, and hot on the upper level. A little timber was required on the level. The report and rules were neglected, and on these points I wrote to the owner.

36. *Kurow Coal-mine, Kurow.*—In last year's report the bad condition of this mine was mentioned. Since then the workings have fallen in, and a new drive has been commenced, which appeared in September last as if it would soon follow the example of its predecessor. A letter on the subject was sent to the owner.

37. *Prince Alfred* (*No.* 1) *Coal-mine, Papakaio.*—In December last this small mine was in good order. No Special Rules were exhibited, though the owner had posted the General Rules.

38. *Prince Alfred* (*No.* 2) *Coal-mine, Papakaio.*—At this mine the Special Rules only were exhibited, reports kept, and the mine in good order generally. A little more attention to the timbering would have been advisable.

39. *St. Andrew's Coal-mine, Papakaio.*—Mine in good order, air guided, plan and reports kept.

40. *Ngapara Colliery, Ngapara.*—As usual, the Act was observed in nearly every respect, both as regards the condition of the mine and the necessary formalities. General Rules, however, were not hung up.

41. *Diamond Hill Coal-mine, Hampden.*—Visited in September last, at which date work had been suspended.

42. *McDonald's Coal-mine, Hampden.*—Merely a prospecting-drive, with defective ventilation. Has since been stopped.

43. *Shag Point Colliery, Palmerston.*—Since my last report this colliery has been twice visited. On the 29th June, 1885, work was being carried on in three different places—namely, in the main seam down the engine-plane, in a small upper seam down the engine-plane, and in the lower-drives on the main seam down the shaft. A quantity of bad air had come into the first and second mentioned, and all the men were out with the exception of two, who were attempting to make a communication. The cage was not covered; neither was the north side of the shaft fenced. Speaking generally, the place seemed in good order. On the 4th November the shaft at the main seam was not fenced. Two doors had been propped open while on their hinges; but otherwise there was little or no fault to find.

49. *Kyeburn Coal-mine, Kyeburn.*—Visited in January last. In tolerably good order, and the air good. There is a second outlet, fitted with a ladder.

50. *Perseverance Coal-mine, Kyeburn.*—As usual, in very good order. Inspected last January.

51. *Archer's Coal-mine, Kyeburn.*—Mr. Archer was, when I visited the locality, driving towards an old shaft containing water. I warned him against the danger of suddenly breaking through.

52. *Taieri Coal-mine, Hyde.*—The old Last Chance Coal-mine, worked by a new party. The mine seemed all right, and in February last I supplied the owners with rules, &c.

64. *Fernhill Colliery, Green Island,* has been visited several times since last year, about the end of which a portion of the workings took fire, and have since been closed off. The Act has been generally observed.

65. *Green Island Colliery, Green Island.*—The workings of this mine extended so close to the railway as to crack the surface in proximity to the line, which alarmed the engineers. The ground worked, however, is so shallow that all the damage was probably done at first, and no evil results have ensued. As a precaution, after the workings had commenced to weight Mr. Richardson sank a small shaft and filled it in. The Act has been pretty well attended to.

66. *Saddle Hill Colliery (Christie's), Green Island,* has been examined twice since last year's report, and has always been in good order. Shaft-fence not very good.

67. *Saddle Hill Colliery (Harris's), Green Island,* has been abandoned. It was never more than a small land-sale pit, and the competition in this locality has been somewhat severe.

68. *Glenochiel Coal-mine, Green Island.*—The shaft-workings of this mine having proved rather expensive for a very small output, an adit has been driven, and was just being opened out when the mine was last visited—on the 2nd February last.

69. *Walton Park Colliery, Green Island,* was last examined on the 16th July, 1885, at which date everything was as usual, the only objectionable point being the air in the rise-headings.

70. *Abbotsroyd Colliery, Green Island.*—During the past year Mr. Freeman has made a communication with McColl's old shaft, which is used as an upcast; but some motive-power is urgently needed, as the air-current does not flow constantly in one direction, and on the 21st January last the bad air in the main intake rendered the carrying of a candle impossible. When the current had reversed, the atmosphere became clearer; but such a mode of working a mine is clearly inadmissible. In other respects the law is fairly well carried out.

71. *Mosgiel Colliery, Mosgiel.*—This is a small mine, not far from Mosgiel Station, and has been opened up by a party of miners in a workmanlike manner. A syphon which has been used for draining the dip works very well. Considerable attention was paid to the observance of the law.

72. *Bruce Coal-mine, Milton,* has been visited, and found in excellent order, with good air, and the rules up.

73. *Real Mackay Coal-mine, Milton,* has done but little, as the road is frequently impassable.

78. *Benhar Coal-mine, Balclutha.*—The creep mentioned in last year's report proved so damaging that it became necessary to close the whole mine; and when there on the 24th September, 1885, I found that a new drive was being carried on. The old pumps have been abolished, and a steam-jet is used for draining the workings. The Act seemed pretty well observed, but there was no signal on the engine-plane and no drag on the set, though the latter was very necessary, as there was no escape for the men in case of a breakage.

79. *Kaitangata Railway and Coal Company's Mines, Kaitangata.*—On the 7th July last the new engine-plane workings were entirely lighted by safety-lamps, as gas was occasionally seen. The brattice was kept well forward. Preparations were being made to continue prospecting to the extreme dip. On the 15th July the new ventilating-shaft was connected with the workings, and has since been bricked throughout and provided with a furnace. A slight powder accident which occurred here will be found under another heading. On the 8th October, 1885, another inspection was made, with a satisfactory result. A blower of gas was showing in the floor of the main heading in the engine-plane workings, but precautions were apparently taken. Blocks were required at the incline-top, and on the 20th a letter from Mr. Shore informed me that they had been fitted. Every care seems to be taken in working this mine.

Southland District.

92. *Nightcaps Coal-mine, Nightcaps.*—On the 9th June, 1885, eleven men were at work

below-ground in the thick seam. The places seemed well driven, and lines were used. Reports were duly kept. During last year the output decreased from 13,301 tons to 5,100 tons, or at the rate of more than 60 per cent.

96. *Orepuki Coal-mine, Orepuki.*—During 1885 this new colliery put out a little over 2,000 tons of coal; but the railway was opened only in May. Unfortunately, in June it was the scene of an accident which resulted in the death of the manager, and which is described under the proper heading. When visited the mine seemed in good order, but there was only one outlet. A wrong sort of Special Rule had been distributed. No weekly report on the machinery had been kept. The head-gear is very badly designed, and gives very little play between the top of the rope-cap and the pulley-centre when the cage is up: it was therefore arranged that men should leave the cage at a lower level.

Prospecting.

During the year 1885 the usual amount of prospecting has been carried on.

The operations at Mount Hamilton were referred to last year, and there is nothing new to report.

The coal-field at Kanieri, near Hokitika, which has been known for sixteen years, has again attracted attention; and in November, 1885, I visited the field, having been instructed to do so with the object of advising the Coal-prospecting Association as to the best locality for commencing permanent works. The country in the vicinity of the formerly-known outcrops is exceedingly rough and broken, and I did not see any chance of success just there; so I recommended that an effort should be made to find a permanent seam further to the south, about Koiterangi. This was acted upon; and in April last I revisited the locality and examined some outcrops which had been discovered. The most likely one was a seam 3ft. 6in. in thickness, but containing two bands of soft shale each about 4in. in thickness, and occurring at a height of about 1,300ft. above the flat. As this seam dips at 5° to the south-east it may be found nearer the level ground; and, at my suggestion, the efforts of the prospectors will be directed to the solution of this problem.

Accidents.

During 1885 there has fortunately been a decrease in the number of accidents. The list comprises seventeen persons injured, as against twenty-two in the previous year, or a reduction of 22·7 per cent. Unfortunately, there has been no reduction in the number of lives lost, which remains at the same figure—namely, three. It is gratifying to notice that there have been no explosions of gas, though an unusual number of sufferers (three) from explosions of powder.

The following particulars are given as being of interest. The numbers refer to the list:—

1. Fatal accident to George Carr. This was fully reported on last year.

2. This accident occurred through the giving-way of a jig-prop. These should always be very securely fastened in, though usually only of a temporary nature, as a good deal depends on them.

5. This fatal accident was just mentioned in last year's report. I was not at the inquest, but subsequently examined the principal witness and the depositions, from which I gathered that immediately prior to the occurrence a piece of coal fell and knocked out a sprag, which had been set, not because the coal was loose, but merely as a proper precautionary measure. In order to reset this sprag it was necessary to remove the fallen coal, and whilst Sheard was so doing the accident occurred.

6. On the 11th June, 1885, Mr. G. G. Lockhart, manager of the Orepuki Coal-mine, was so seriously injured that he died on the 14th. There was a certain amount of mystery connected with the cause of the accident which I was unable to elucidate. The inquest was adjourned, for my attendance, to the 22nd, and on the 18th I examined the shaft and made inquiries on the ground. Briefly described, the accident was as follows: Shortly after 8 o'clock on the morning of the 11th the deceased went below, having ordered John Shanks, who was acting as banksman, to attend to some matters on the pit-bank. The regular banksman (Beard) was at the pit-bottom by order of the deceased. Eventually Lockhart commenced to ascend, and is described by Beard as having left the pit-bottom in his ordinary health and spirits. The acting-banksman, instead of listening at the pit-top while anybody was in the shaft, as provided for in Special Rule 56, was a short distance away, at the wagons; and, although I am not prepared to say that this had anything to do either with the accident or its unfortunate termination, yet it would have been better had this rule been strictly observed. The engine is very small, and is geared four to one, so the cage must have been moving very slowly when it approached the top: indeed, the engine-man gave evidence that he was proceeding with more than ordinary caution, as some men were working about the bottom of the shaft, on the other side. When about 15in. of the cage was visible above the pit-top something was felt to catch, and immediately the engine was stopped. Lockhart was then found lying across the bottom of the cage in a state of insensibility. The injuries appeared, on medical examination, to be slight; but subsequently it was found that there were serious internal injuries, which eventually caused death. The inquest resulted in a verdict of "Accidental death."

8. Accidents by explosions of powder have been unusually prevalent, no less than three

persons having been injured by this cause. In this case the two sufferers had lighted a shot, and retired to await the explosion. From some cause they were burned—not, in my opinion, by gas, because none has ever been seen in the Banbury Mine, but probably by a blown-out shot.

9. During the strike at Westport the mine was manned almost entirely by miners unused to coal-getting, or by men entirely unaccustomed to mining of any kind. Thus it could hardly be expected that accidents should be altogether avoided. On the 2nd July a man named Sutherland was very severely injured by a fall of coal. The manager's account is that Sutherland and his mate had fired a shot which left a piece of coal hanging. So far the accounts agree. The manager states that they then proceeded to pull it down, when it fell on Sutherland; whose tale differs, for he states that while the lump was hanging the deputy came in, and, upon being questioned, stated the place to be quite safe, after which they proceeded to work beneath it. The deputy denies all knowledge of this. Sutherland is unfortunately crippled for life.

10. This occurred very simply. Joseph Blenkinsop, employed on the Koranui surface-works, sat on the rail of a fence, which gave way, allowing him to fall more than 38ft. Miraculously, he escaped with his life.

12. The victim of this accident was himself to blame, as he was wrongfully riding on a truck in the engine-plane when it happened.

14. This accident is instructive as indicating by what unlikely means miners may become injured. On the 6th October, 1885, at the Kaitangata Mine, a boy named Daniel Wilson proceeded to warm what he thought was his father's tea in a tin flask. Unfortunately, he had taken the wrong flask, containing powder, which exploded. Mr. Shore has accepted my suggestion that all powder-flasks should be painted red.

Classification of Accidents during 1885.

Below—		
Trucks	4	
Falls of roof and sides	5	
Powder	2	
Sundries	1	
	—	12
Shafts		1
Above—		
Trucks	1	
Sundries	2	
	—	3
		16

As usual, there has been during 1885 a fatal accident which, though it cannot be included among the mining statistics, was in some measure connected with mining operations. As is well known, there are in Otago and Southland numerous small abandoned open-work mines. In one of these, at Nightcaps, on the 26th August, 1885, a young man named John Alley was killed. He was almost blind, and, though previously accustomed to work in this place, had not been there for eighteen months. The jury added a rider to the verdict, recommending that "steps should be taken by the authorities to prevent the public from mining in deserted or abandoned workings"—a recommendation sufficiently unpractical; but, curiously enough, on the 20th June preceding the fatality I had turned out of the identical excavation where it occurred a boy named Thomas Carr, who was the first to find Alley's body.

Number of Men employed.

There has been a considerable accession to the number of men employed, which has increased from 1,017 in 1884 to 1,224 in 1885—more than 20 per cent. As the output has not correspondingly increased, there is a diminution in the quantity per man, which sinks from 370·5 tons in 1884 to 326·2 tons in 1885.

Output of Coal.

The total tonnage for 1885 was 399,280 tons, an increase of only 22,452 tons over last year, or about half the average increase for the previous five years. The principal alterations are as follows:—

Increase.—Brunner Mine, 25,633 tons; Koranui Mine, 24,550 tons; Coalpit Heath, 14,289 tons; Tyneside (new mine) 2,903 tons; Hartley Colliery, 2,483 tons; Kaitangata, 2,441 tons; and Orepuki (new mine) 2,091 tons.

Decrease.—Banbury Mine, 26,717 tons; Nightcaps, 8,210 tons; Walton Park, 7,035 tons; Fernhill Colliery, 3,381 tons; Homebush Colliery, 3,256 tons; Whitecliffs Colliery, 2,448 tons; and Green Island Colliery, 1,399 tons.

Death-rate in South Island.

Dividing the number of men and the tonnage by the fatal accidents, which numbered three, we get a death-rate for this Island of 133,093 tons raised, and 408 men employed, per life lost, or 2·45 lives lost for every thousand men.

Methods of Working.

Worked by shaft—		
Steam-power used	7	
Horse-power used	5	
Hand-power used	2	
	—	14
Worked by adit—		
Engine-planes	8	
Horse-power used	7	
Self-acting inclines	3	
Hand-power used	38	
	—	56
Open-work		22
		—
		92

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

The Under-Secretary of Mines, Wellington.

REPORTS UPON INSPECTION OF QUARTZ-MINES, WESTPORT DISTRICT.

No. 3.

Mr. Inspector BINNS, F.G.S., to the UNDER-SECRETARY of MINES.

SIR,— Dunedin, 23rd October, 1885.

I have the honour, in accordance with my letter dated the 29th April, 1885, to make the following report on the quartz-mines in the Westport District, an inspection of which was undertaken by me in accordance with verbal instructions received on the 26th April, 1885, from the Secretary of Mines:—

1, 2, *and* 3. *Golden Fleece Extended Quartz-mine, Golden Treasure Quartz-mine,* and *Energetic Quartz-mine* were, at the time of my visit, not working.

4. *Wealth of Nations Quartz-mine.*—15th August, 1885.—Only very little was being done at this claim. A tunnel had been driven, starting about 30ft. above the battery, and continuing for 820ft. Subsequently 120ft. was driven on the strike of the reef southwards, and at 100ft. on this level a winze was sunk, carrying irregular blocks of stone all the way down. Mr. Watson had kept no weekly report, as so little was being done. In all other respects the condition of the work was satisfactory.

5. *Keep It Dark Quartz-mine.*—15th August, 1885.—This mine continues to be well and profitably worked; but the Act was not observed as it should have been. The shaft was fenced on one side only, and there was no cover on the cage. There are two filling-shafts, through both of which access to the surface may be gained. Notwithstanding Mr. Gordon's letter of the 15th April, 1884, no copy of the plan was kept at the mine. The output per week at the time of my visit was about 210 tons, and the yield per ton 12½dwt. I did not see the weekly report, as it was in the office, which was locked. It would be advisable for the manager to have a key. Twenty men were employed below-ground, and seven above, exclusive of six at the battery.

6. *Golden Point Quartz-mine* was not at work.

7. *Globe Quartz-mine.*—17th August, 1885.—At the time of my visit stoping was not being carried on, the battery being kept going by some inferior stone which happened to be on hand. A shaft has now been sunk, and the winding-gear is worked from the main water-wheel, which is situated at the battery, 99 chains away. The rope used for the transmission of power is a ¾-inch diameter steel rope, passing round a 12-feet wheel. The drum is 5ft. in diameter, and remarkable as being, so far as I am aware, the first attempt at a conical drum which has been used for winding-purposes in the colony. It is somewhat primitive in design, and could not be used for raising or lowering men, as a single chain replaces the rope for the short distance necessary; still, the useful principle is there, and eases the load at starting. The clutch was very defective; but I was given to understand that it was merely a substitute, the original having been broken. The chain attached to the cage was needlessly long; but, as men are not raised or lowered in the shaft, this cannot be objected to. For the same reason the cages are uncovered. There is a signal up the shaft, which is well sunk and timbered, but unfenced. The bottom-level is at 238ft.; and at 88ft. is a chamber connected with the former main level, which is now used solely for timber and men. The ladders, which are substantial, have proper platforms; but the slope is very slight, being only 7in. in about 23ft. Mr. Gordon's remonstrances *re* explosives, plan, and reports do not appear to have borne fruit, for powder is taken down in 25-pound kegs, detonators in boxes of 100, no report is kept, and there was no plan at the mine. The law thus appears to be entirely disregarded. At the time of my visit six men only were employed.

8. *Oriental Quartz-mine.*—Not at work.

9. *Welcome Quartz-mine.*—I was at this mine on the 21st August, but was unable to descend into the workings, as the main shaft of the engine had broken a few days previously, and the air-compressors could not be worked; consequently, the air in the levels was unfit for respiration. It appears by the papers that work has just been resumed.

10. *Fiery Cross Extended Quartz-mine.*—20th August, 1885.—At this date no stoping was going on, but from the 450-feet level two winzes were being sunk, one of which was 123ft. deep, and the other, which carried stone nearly all the way down, 133ft. The latter was imperfectly ventilated by a fan, driven by hand-power. Dynamite was taken down in 5-pound packages. Special Rules were exhibited, but no General Rules. The manager, who had been appointed since Mr. Gordon's visit, had no copy of the Act. It was proposed to wind from the winzes with a single rope, carried on pulleys from the main drum, a distance of 1,250ft. Signals were fixed for ringing up and down the shaft; also a wire for the new winding-gear. Cage-covers not used.

11. *Hopeful Extended Quartz-mine.*—21st August, 1885.—The mine mentioned by Mr. Gordon is closed; and at this date a tribute-party (Hoare and Co.) of six men were working on a block of surface-stone.

12. *Eureka Extended Quartz-mine.*—On the 21st August, 1885, I was at this mine, but did not descend, as there was nobody at work below-ground. Only three men altogether were employed, and very shortly after the works were closed. No report was kept, nor were any Special Rules exhibited. Dynamite was taken down in 5-pound packages. It is a matter for great regret that the perseverance and enterprise displayed by this company in going on so far with a well-executed and substantial piece of work should be so ill rewarded. They have driven 2,400ft. in search of the reef without finding it. A revival of mining in the locality would enable them to proceed further.

13. *Just in Time Quartz-mine.*—21st August, 1885.—The manager who had charge of this mine at Mr. Gordon's visit was still there at the above date. There was no stoping going on. A cross-cut 500ft. in length cut the line of reef; but it was necessary to drive 600ft. to the north, and then a thin block only was found. The air-pipes were out of repair. Dynamite was taken down in 5-pound packages. Timbering moderately good. Special Rules were exhibited and distributed; but not the General Rules. No weekly report was kept; the pit-mouth was unfenced; there was no signal down the shaft; the cages were uncovered; there was no plan at the mine, nor any indicator on the engine. A communication has been formed with the Reform Quartz-mine (late Imperial). The detaching-hooks have been taken off, and were lying rusting on the flat-sheets. The manager acknowledged that Mr. Gordon had told him to keep to the Act, which he appears to have disregarded with considerable completeness. Six men were employed below, and two above.

14. *Reform (late Imperial) Quartz-mine.*—21st August, 1885.—This mine is under the same management as No. 13. Rules were not distributed, nor were the General Rules posted up. No report was kept. Vertical ladders were used in the old Imperial shaft; but very shortly after my visit (it was expected) the main shaft would be used as a means of egress from and ingress to these workings.

15. *Caledonian Quartz-mine.*—Not at work.

16. *United Alpine Quartz-mine.*—1st September, 1885.—This mine was in very good order; the ventilation, which was faulty at the time of Mr. Gordon's visit, being excellent; the timbering also is good. This was one of the few mines in which I found any care exercised with regard to the use of explosives. Dynamite was taken below-ground in proper warming-cans, containing 5lb. (which is too much), and detonators were kept in a securely-locked wooden box. Stoping was carried on above No. 6 level to a height of 65ft. The six tributers mentioned by Mr. Gordon, between Nos. 4 and 5 levels, are not at work. A good changing-house for the miners is near the entrance to the drive. Special Rules were said to have been posted up, but had disappeared. A working-plan, made up from time to time by the manager, was at the mine. The battery is now driven by a 5-feet Pelton turbine, with a 50-feet fall. Forty-five men are employed below, and four above.

17. *United Victory Quartz-mine.*—Not at work.

18. *Phœnix Quartz-mine.*—Not at work.

19. *Inglewood Extended Quartz-mine.*—18th August, 1885.—A shaft has been sunk 120ft. from the level mentioned by Mr. Gordon, and at 100ft. from the top of this shaft a cross-cut has been driven 40ft. to cut the reefs, of which there are two, separated by about 4ft. The ladder-way is well constructed, but inconveniently small. The ladders are sloped, and fitted with platforms. Dynamite was taken down in properly-constructed tins. No plan was kept at the mine. It was intended to continue the present shaft to the surface (128ft.), and put down a winding-engine to raise the quartz to the level, whence it will be taken to the battery. There was no plan at the mine.

20. *Inkermann Quartz-mine.*—19th August, 1885.—There are three levels at this mine, Nos. 1, 2, and 3, having 100ft. between each, and being all connected below-ground. In the No. 1, or top level, miners were engaged in the somewhat dangerous operation of removing a block of fallen stone; but due care seemed to be exercised. Below No. 2 Level twelve men were engaged stoping in a reef 12ft. to 30ft. wide; but filling-in was well kept up, and the place

seemed in good order. Above No. 3 Level, which was at that time 900ft. in length, four men were getting out the block of stone which fell about October last, since which it has been filled in and allowed to solidify. The reef is so large than an average yield of 5½dwt. pays very well. No weekly report was kept; but it seems, when Mr. Gordon last visited this mine, the works were not sufficiently developed for the introduction of the Act. A miner was killed here during 1884.

21. *Deep-level Tunnel, Reefton.*—Still at work. Not visited.

22. *Deep-level Tunnel, Boatman's.*—21st August.—Well timbered and ventilated.

23. *Specimen Hill Quartz-mine.*—Not at work.

24. *Red Queen Quartz-mine.*—27th August, 1885.—This is the only mine now worked in the Mokihinui district. At the above date the stopes were above the lowest (No. 2) level, which was driven 380ft. The reef measures 1ft. to 2ft., and the country is very hard. The walls are well-defined, but there is a loose casing on the hanging-wall which—especially as the reef is very flat, 19ft. 6in. in 100ft.—if not carefully watched is liable to fall. One man was working under a very dangerous piece; but it appeared that he was somewhat inexperienced, and on this account had for his mate the boss of the shift, who was outside attending to some duties which would but for my visit have been performed by the manager. Thus the danger would probably under ordinary circumstances have been avoided. Ladders not very good. As the Act had not previously been introduced here it was not observed. Twenty-two men were employed in the stopes.

New Mines.

25. *Maruia Quartz-mine.*—1st September, 1885.—This is one of the leader-claims at Zalatown, and was worked by Hart and party on tribute. Six men had been employed for four months, during which they had stoped for a few feet above the old No. 1 Level. The reef was about a foot in thickness, but poor. Air pretty good. Level in need of repairs.

26. *Tyrconnell Quartz-mine.*—1st September, 1885.—This is also a leader-claim, situated close to the Maruia, where a thin but very rich vein of stone is worked. Dynamite was taken in in half-packages. No proper return for air. No plan at mine.

27. *Crœsus Quartz-mine.*—1st September, 1885.—This mine was worked by a tribute-party, of whom Mr. Antonio Accolino is manager. Three weeks before my visit the manager's brother was severely injured by a fall of stone. The claim did not appear to be well worked: timber deficient, and ladders in very bad order. Of course, as the Act had not been previously introduced no attention was paid to it. Six men were employed below and two at the battery.

28. *Venus Extended Quartz-mine.*—18th August, 1885.—This claim, which is situated in Murray Creek, was visited by me on the above date, at which time it was intended to connect the two levels by an uprise which would meet a winze already sunk 74ft. The difficulty, of course, was with regard to ventilation; and the manager had placed a small furnace near the entrance, and connected it by pipes with the workings. The Act had not previously been introduced.

29. *Fiery Cross Extended Tribute.*—21st August, 1885.—Between Nos. 3 and 4 levels of the Hopeful Claim a party of seven men were working. The boss of the party was Mr. H. Currie, formerly manager of the Fiery Cross Claim. The ground was well-timbered, but, being soft, explosives were seldom made use of. No attention was paid to the formalities of the Act.

I have, &c.,

GEORGE J. BINNS,
Inspector of Mines.

The Under-Secretary of Mines, Wellington.

No. 4.

Mr. Inspector BINNS, F.G.S., to the UNDER-SECRETARY of MINES.

SIR,— Dunedin, 15th January, 1886.

I have the honour to make the following report on my recent inspection of the quartz-mines in the Westport Mining District:—

1. *Golden Fleece Extended Quartz-mine* was not working at the time of my visit to the district.

2. *Golden Treasure Quartz-mine.*—This claim, which has recommenced operations, was inspected on the 27th November, at which date only four men were employed below-ground. Stoping was being carried on in a thin and broken reef between Nos. 5 and 6 Levels. Winding is carried on from a shaft 300ft. deep, by means of a double-cylinder steam-engine. Men are not, however, raised or lowered by this means, and it is therefore unnecessary to have either an indicator on the engine, a cover on the cage, or signals in the shaft. Still, the shaft-mouth should be properly fenced, which was not always, for the manager was in the habit of clewing up the gates during winding operations, being apparently of the opinion that he thereby complied with the requirements of the Act. Only fragments of Rules were posted up, and dynamite was taken down in packages of 5lb. No plan was kept at the mine, nor was any weekly report made. The

headstocks are very insecure, being attached with a guy-rope to a stump on the hill, to make up for insufficient backstays. On the 6th January last I wrote to the legal and mine managers.

3. *Energetic Quartz-mine.*—Abandoned.

4. *Wealth of Nations Quartz-mine.*—This old-established claim, which formerly paid so well, has of late years done very little. At the time of my last visit only three men were employed below-ground—sinking a winze from a level about 30ft. above the water-wheel. Everything was in first-class order, but no weekly report was kept. On the 18th of December I addressed a letter to Mr. Watson requesting him to observe this rule, and subsequently a copy was sent to the legal manager.

5. *Keep It Dark Quartz-mine.*—This mine, which still keeps in the foremost rank as a gold-producing concern, was visited on the 25th November, 1885, when stoping was going on above the No. 2 Level. The shaft was well fenced, and the cages covered. Special Rules were distributed, but not posted up; weekly report kept; air and timber good; an indicator on the wheel, as required by General Rule 15, but there was no signal down the shaft, neither was there a board with the signals painted on, nor a plan at the mine. On the 5th December last I wrote to the legal and mine managers, giving them notice to observe those points which were neglected.

6. *Golden Point Quartz-mine.*—Not at work.

7. *Globe Quartz-mine.*—On the 25th November, 1885, the shaft was not fenced, but the manager (Mr. McCallum, who had been recently appointed) had the fence nearly ready to put on. In most other respects the law seemed to be observed, though the portions relating to Special and General Rules had received insufficient attention. On the 6th January notices were sent to the managers.

8. *Oriental Quartz-mine.*—Not at work.

9. *Welcome Quartz-mine.*—24th November, 1885.—The No. 8 Level, which is the lowest point yet reached in this claim, is 600ft. below the entrance at No. 6 Level, and 1,100ft. below the surface. The mine seemed, at the above date, to be carefully worked; and the report and plan were up to date. The shaft, however, requires sliding-gates, and the cage was uncovered. Mr. Rooney stated that the cage-covers were being overhauled. Ventilation for the workings is provided by the air-compressor; but the engine-house is still excessively hot. Dynamite was taken down in 5-pound tins. On the 5th and 6th January I wrote to the mining and legal managers, requesting attention to the requisite portions of the Act.

10. *Fiery Cross Extended Quartz-mine.*—On the 24th November I was at this mine, and inspected the surface arrangements, finding the shaft fenced, but no cover on the cage; neither was the weekly report kept. New head-gear had been erected, but no signal had been fitted down the shaft. Therefore, on the 7th January I wrote to the managers on these subjects.

11. *Hopeful Extended Quartz-mine Tribute.*—Not visited on this occasion.

12. *Eureka Extended Quartz-mine.*—Not worked.

13. *Just in Time Quartz-mine.*—On reference to my report of 23rd October last you will observe that the manager of this mine had almost entirely neglected to observe the law. When, therefore, on the 21st of November, it appeared that absolutely nothing had been done to bring about a better condition of affairs, I came to the conclusion that, unless the authority of the department was to be entirely abrogated, it would be necessary to take some decisive steps for the purpose of proving to Mr. Wilson that he was amenable to the law of the colony. The condition of the mine was as follows: The shaft was not fenced; no indicator on the engine; no weekly report; no plan on the works; no board of signals up; no cover on the cage (the covers were lying beside the safety-hooks, rusting, on the brace); no General Rules up, and Special Rules not properly distributed. In the main drive, close to all passing trucks, was a box containing between 40lb. and 50lb. of dynamite, and within a few feet two boxes of detonators, one intact and the other just begun, and uncovered. A dynamite-tin in the mine had been used for carrying water to the face. As you will see, there were many points on which informations could have been laid; but I chose the following: (1) General Rule 6, *re* fencing of shaft; (2) General Rule 11, *re* cover to cage; (3) General Rule 2 (*b*), *re* explosives; (4) General Rule 2 (*c*), *re* explosives; (5) General Rule 23, *re* weekly report. And, on the defendant's pleading guilty to the first four, I withdrew the fifth. These prosecutions were not undertaken with any idea of severely punishing the defendant, but merely to teach him—as he appears unable to learn by himself—that "The Regulation of Mines Act, 1874," is a law which cannot be persistently disregarded with impunity. As my solicitor was instructed to ask for a small penalty, the Resident Magistrate inflicted in each case a fine of 5s.; costs of Court, 11s.; and solicitor's fee, 10s. 6d. I have reason to believe that the effect will be very salutary. At the time of my visit an uprise was being constructed to connect with a winze from an upper level, in which, and in workings adjoining which, was a large body of water. I considered that driving from below, or even boring, would be attended with some danger, and the mine-manager expressed concurrence with this view. On the 14th December, therefore, I telegraphed on this subject, and on the 6th January wrote a letter giving notice to observe the Act in every particular. The newspapers now state that the winze is being baled out.

14. *Reform (late Imperial) Quartz-mine.*—This claim is under the same management as No. 13, and it is hardly necessary to say that the law was practically disregarded. The air at

the face was bad. On the 8th January I wrote to the legal and mining managers, calling attention to the neglect, and requesting that Special Rules might be sent up, as none had been gazetted since the reconstitution of the company.

15. *Caledonian Quartz-mine.*—Not at work.

16. *United Alpine Quartz-mine.*—Visited the 21st November, 1885, at which time there was very little fault to find, except that dynamite was taken in in 5-pound packages. The reef is very wide, but securely timbered and filled in. Forty men were employed below and eleven above-ground. The company propose putting in another level 260ft. below the present one, of which the length will be 2,000ft.

17. *United Victory Quartz-mine.*—Not at work.

18. *Phœnix Quartz-mine.*—Not at work.

19. *Inglewood Extended Quartz-mine.*—Visited 29th November. No plan of the mine was kept at the works, and no weekly report kept. Dynamite was taken below-ground in a tin containing 5lb., which is too much. Twelve men were working below-ground and two above. The south end of the 100-feet level had been connected with the upper level by a winze, which is used as a travelling-road, thus avoiding the exceedingly inconvenient ladders. Special Rules were exhibited and distributed. On 5th January, 1886, I wrote to the managers.

20. *Inkermann Quartz-mine.*—I was informed that this mine was being filled in, so did not inspect it on this occasion.

21 *and* 22. *Deep-level Tunnel, Reefton,* and *Deep-level Tunnel, Boatman's,* were not visited.

23. *Specimen Hill Quartz-mine.*—Not at work.

24. *Red Queen Quartz-mine, Mokihinui.*—As a copy of "The Regulation of Mines Act, 1874," was suppled to Mr. Horne (legal manager) by Mr. Gordon, who at the same time wrote requesting that rules might be forwarded, &c., it might have been expected that something would have been done to observe the law. Such, however, was not the case. The mine was in good order, but the requirements of the Act no better observed than at my former visit. I have therefore written to Mr. Horne requiring his attention.

25. *Maruia Quartz-mine, Lyell.*—This claim, which was visited on the 7th December, had recently been bought by a party of working-miners. It did not, therefore, seem to me necessary to introduce the Act.

26. *Tyrconnell Quartz-mine, Lyell.*—The ventilation difficulty mentioned in my last report has been overcome by connecting the workings with No. 4 Level. The Act was not observed; but no notice had been given: so on the 8th January I wrote to the legal and mining managers, and, having no copies of the Act, asked you to be good enough to send one. The mine appeared to be safely worked and explosives to be carefully used.

27. *Crœsus Quartz-mine, Lyell.*—The remarks in my last report apply equally this time, except that the mine appeared in a little better order. Seven men were employed. On the 8th January I wrote to the managers, and requested the head office of this department to send a copy of the Act.

28. *Venus Quartz-mine.*—As only surface-works were going on this claim was not visited in December. On the 8th January I wrote to the managers giving them notice to observe the Act.

29. *Fiery Cross Extended Tribute.*—This tribute-party are now working off No. 6 Level of the Welcome Mine. I inspected the workings, which are very limited, on the 24th November.

New Mine.

30. *Great Republic Quartz-mine, Westport.*—This mine employs twelve men below-ground. The country is very loose and broken, but the mine-manager secures the ground very well. The stone is carried by an aerial tramway to the battery, a distance of a mile and a half. The crushing-plant consists of ten heads of stampers, driven by a 6-feet Pelton turbine. The reef varies in thickness from 3ft. at the north end to 7ft. at the south. It also underlies very capriciously, the angle being at the north side of the creek westward at 45°, and on the south side eastward at a similar inclination. No explosives were used. I went over the provisions of the Act with the mine-manager, and on the 7th January wrote to him, as well as to the legal manager (to whom Mr. Gordon had previously written), giving them notice to observe the law.

General Remarks.

General Rules appeared to have escaped the notice of the mining-managers, as few or none of them had paid attention to their exhibition or distribution. I therefore pointed out the necessity for this course to all the managers.

I have, &c.,

GEORGE J. BINNS,

Inspector of Mines.

The Under-Secretary of Mines, Wellington.

TABLE showing LEGAL and MINING MANAGERS of QUARTZ-MINES in the Westport District.

Name of Mine.	Legal Manager.	Mining Manager.
1. Golden Fleece Extended	G. W. Moss.	
2. Golden Treasure.		
3. Energetic	G. W. Moss.	
4. Wealth of Nations	W. Rae	T. Watson.
5. Keep It Dark	G. C. Bowman	R. Fitzmaurice.
6. Golden Point	G. Perotti.	
7. Globe	W. S. Hindmarsh	W. Harvey.
8. Oriental.		
9. Welcome	P. Brennan	F. Rooney.
10. Fiery Cross Extended	G. W. Moss	H. Lawn.
11. Hopeful	P. Brennan.	
12. Eureka	W. S. Hindmarsh	J. Tauschke.
13. Just in Time	G. Wise	J. L. Wilson.
14. Reform	W. G. Collings	J. L. Wilson.
15. Caledonian.		
16. United Alpine	I. Inglis	M. Conradsen.
17. United Victory.		
18. Phœnix.		
19. Inglewood	W. G. Collings	A. Seawright.
20. Inkermann	G. Wise	S. Vivian.
21. Deep-level Tunnel (Reefton).		
22. Deep-level Tunnel (Boatman's)	P. Brennan.	
23. Specimen Hill.		
24. Red Queen	Z. C. Horne	C. Rasmussen.
25. Maruia	G. Watson	J. Hart.
26. Tyrconnell	J. F. Clark	J. Kelly.
27. Crœsus	I. Inglis	A. Accolino.
28. Venus	T. Lee	J. McKenny.
29. Fiery Cross Tribute	G. W. Moss	H. Lawn.

APPENDIX.

No. 1.

TABLE of ACCIDENTS in COAL MINES during the Year ended the 31st December, 1885.
SOUTH ISLAND, NEW ZEALAND.

No. and Date.	Name of Mine.	District.	Cause of Accident.	Above Ground.	Below Ground.	Fatal.	Non-fatal.	Name of Sufferer.	Remarks.
1. April 9	Kaitangata ..	Otago ..	Runaway truck ..	..	1	1	..	G. Carr ..	Reported in 1885.
2. May 2	Brunner ..	Westport ..	" ..	..	1	..	1	T. Williams.	
3. " 19	" ..	" ..	Fall of coal ..	..	1	..	1	J. Baxter.	
4. " 25	Springfield ..	Malvern ..	Hand crushed in points	1	..	..	1	T. Colyer.	
5. " 28	Brunner ..	Westport ..	Fall of coal ..	..	1	1	..	M. Sheard.	
6. June 8	Banbury ..	" ..	Trucks ran over foot	..	1	..	1	H. Swan.	
7. " 11	Orepuki ..	Southland	Crushed in shaft	..	1	1	..	G. G. Lockhart	Attended adjourned inquest.
8. " 18	Banbury ..	Westport ..	Gunpowder	..	1	..	1	M. Gibens.	
				..	1	..	1	F. Gospodneich	
9. July 2	" ..	" ..	Fall of coal ..	..	1	..	1	J. Sutherland	Very serious.
10. " 25	Koranui ..	" ..	Fall of staging ..	1	..	..	1	J. Blenkinsop	Not reported.
11. " 27	Banbury ..	" ..	Truck	1	..	..	1	J. McMahon.	
12. Aug. 14	Hartley ..	Malvern ..	Riding on truck ..	..	1	..	1	T. Leeming ..	Violation of rules.
13. " 21	Lesmahagow	Otago ..	Fall of coal ..	..	1	..	1	R. M. Sewell.	
14. Oct. 6	Kaitangata ..	" ..	Explosion of powder	..	1	..	1	D. Wilson ..	Carelessness.
15. Nov. 9	Tyneside ..	Greymouth	Fall of coal ..	..	1	..	1	D. Millar ..	Want of caution.
16. " 16	Koranui ..	Westport ..	Fall of timber ..	..	1	..	1	J. Orr.	
				3	14	3	14		

No. 2.

RETURN of the QUANTITY and VALUE of COAL IMPORTED into and EXPORTED from New Zealand during the Year ended 31st March, 1886.

Countries whence imported.	Imports.		Countries to which exported.	Exports.					
				Quantity.			Value.		
	Quantity.	Value.		N. Zealand Produce.	Foreign Produce.	Total.	N. Zealand Produce.	Foreign Produce.	Total.
	Tons.	£		Tons.	Tons.	Tons	£	£	£
United Kingdom	2,443	3,696	United Kingdom	41,145	3,911	45,056*	49,275	4,871	54,146
Queensland ..	1,562	1,586	Victoria ..	2,203	..	2,203	1,526	..	1,526
New South Wales	126,197	138,117	Tasmania ..	1	..	1	1	..	1
			United States on the East Coast	9	..	9	11	..	11
			Hongkong ..	95	..	95	95	..	95
			South Sea Islands	63	..	63	56	..	56
			Guam	1,977	2,023	4,000†	2,471	2,529	5,000
Totals ..	130,202	143,399	..	45,493	5,934	51,427	53,435	7,400	60,835

* For direct steamers to England. † Shipped s.s. "Coptic."

WILLIAM SEED,
Secretary and Inspector.

Department of Trade and Customs,
Wellington, 22nd May, 1886.

No. 3.

Statistics of Workings in Coal Mines, 1885.

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1885.			Approximate Total Output to 31st December, 1885.	Approximate Total Output to 31st December, 1886.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Tunnel.	Depth of Shaft or Length of Tunnel.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
KAWAKAWA DISTRICT.													Tons.	Tons.	Tons.	Tons.	Tons.									
1. Kawakawa Mine, Bay of Islands	Moody, T. P. ..	21	semi-bitum.	1	2′ 6″ to 15′	2′ 6″ to 15′	varies	bord and pillar	4	7′ x 10′	..	engine-incline	37,172	..	37,172	547,455	584,627	20	75	95	steam	6′	12″	247′	furnace	..
2. Kamo, near Whangarei ..	Kerr, George ..	9	brown	2	4′ to 12	4′ to 10′	″	″	3	6′ x 15′	..	engine-shaft	20,579	..	20,579	83,444	104,023	16	44	60	″	3′ to 7′	10″	268′	natural	..
3. Whauwhau, near Whangarei	Love, Alexander	21	″	1	5′ to 10′	5′ to 9′	″	″	1	..	..	tunnel	6,268	..	6,268	39,091	45,359	7	6	13	horse	..	..	..	″	..
WAIKATO DISTRICT.																										
4. Waikato, near Huntly ..	Taylor, B. ..	9	″	1	6′ to 18′	6′ to 18′	″	″	1	..	..	″	10,490	..	10,490	60,847	71,337	5	19	24	″	..	..	..	″	..
5. Taupiri, near Huntly ..	Collins, William	10	″	1	6′ o 45′	6′ to 35′	″	″	2	5′ 3″ diam.	..	engine-incline	37,225	..	37,225	167,687	204,912	7	54	61	steam	tangye	..	..	″	..
WEST WANGANUI DISTRICT.																										
6. Wallsend, Collingwood ..	Walker, James ..	17	bitum.	1	4′	all	W. 12°	long wall	..	..	..	adit	1,877	279	2,156	14,832	16,988	6	17	23	horse	..	..	..	natural	17/3/86
WESTPORT DISTRICT.																										
7. Mokihinui, Westport ..	Reed, F. ..	5½	″	2	2′ 9″ and 2′ 6″	″	N. 20° E. 1 in 6	bord and pillar	1	..	..	″	200	75	275	..	275	25	6	31	self-acting incline	..	..	..	″	28/3/86
8. Koranui	Holdsworth, W., General Manager Jamison, W., Mine Manager	5	″	3	12′ to 12′ 8″	16′	S.E.	″	1	4′ diam. x 53′	53′	″	30,539	..	30,539	13,891	44,430	30	75	105	″	..	..	..	″	24/3/86
9. Banbury	Dickson, W. H., General Manager Brown, T., Mine Manager	7	″	1	19′	16′	varies	″	1	4′ x 3′	90′	″	37,022	10,448	47,470	189,412	236,882	28	140	168	endless chain	..	..	..	fan 6′	25/3/86
10. Murray Creek, Reefton ..	Trennery, J. (owner)	2	pitch	1	14′	10′	E.	″	..	..	..	″	530	..	530	387	917	..	1	1	hand	..	..	..	natural	2/4/86
11. Golden Treasure, Reefton	Connolly, James	14	″	1	14′	10′	E.	″	..	..	..	″	120	..	120	1,620	1,740	1	1	2	″	..	..	..	″	2/4/86
12. Lankey's Gully, Reefton	Scollock, R. J. ..	..	″	1	8′	all	varies	″	..	..	..	″	320	..	320	2,760	3,080	1	1	2	″	..	..	..	″	15/8/85
13. Inkermann	Vivian, S. ..	1	″	1	4′ 6″	″	S. 70° W. 60°	stoping out	..	..	..	″	1,000	..	1,000	..	1,000	..	2	2	″	..	..	..	″	2/4/86
14. Billett's, Boatman's ..	Billett, J. ..	½	″	1	6′	6′	N.W. 33°	bord and pillar	1	4′ x 3′	16′	shaft	15	..	15	..	15	..	1	1	″	..	..	..	″	21/8/85
15. Boatman's	Coghlan, J.	..	″	2	2′ 6″ to 2′ 4″	all	S. 30° W. 12½°	″	..	..	..	adit	71	11	82	1,284	1,366	1	1	2	″	..	..	..	″	1/4/86
16. Burke's		..	″	1	18′ 6″	6′	N. 80° W. 29°	″	..	..	..	″	41	43	84	1,124	1,208									
17. Phœnix, Reefton ..	Connolly, James	1	″	1	20′	10′	E. 30° to 40°	″	..	..	..	″	160	..	160	..	160	1	1	2	″	..	..	..	″	2/4/86
18. Brunner, Greymouth ..	Bishop, J. ..	21	bitum.	1	16′ to 8′	all	S.W. 1 in 4	″	..	..	..	″	80,642	23,359	104,001	372,904	476,905	25	210	235	endless rope (self-acti'g) and eng.-pln.	..	..	..	fan 16′	17/4/86

19. Coal-pit Heath, Greymouth	Alexander, T. ..	9	"	1	16′	"	"	"	2	10′ x 6′ 8′ diam.	280′,75′	shaft	29,548	3,730	33,278	113,616	146,894	17	73	90	engine, 90 h.-p.	3′ 1′	6″ 4″	240′	furnace	21/4/86
GREYMOUTH DISTRICT.																									
20. Tyneside, Greymouth ..	Hodgson, James	1	"	1	16′	12′	E. 20° S. 1 in 3½	"	..	..	..	adit	2,903	..	2,903	..	2,903	2	8	10	hand	..	..	..	natural	22/4/86
21. Wallsend, Greymouth ..	Elliot, R. ..	9	"	1	18′	12′	S.W. 1 in 4	"	2	11′diam. 14′	670′ unfinished	shaft	..	..	..	12,123	12,123	19	24	43	..	5′	10″	670′	fan 15′	22/4/86
MALVERN DISTRICT.																									
22. Springfield, Springfield ..	Lindop, G. B., General Manager Moore, W., Mine Manager	9	brown	1	7′ 6″	all	S.E. 6 to 1 in 12	"	1	12′ x 5′ 2″	246′	"	3,432	841	4,273	51,100	55,373	5	10	15	engine	22″	8″	263′	steam	12/1/86
23. Canterbury, Sheffield ..	Austin, J. ..	23	"	2	2′ and 1′ 6″	"	S.E. 1 in 3	"	1	5′ diam.	25′	adit	1,039	123	1,162	28,855	30,017	1	4	5	horse	..	..	..	furnace	13/1/86
24. Baron's, Sheffield ..	Baron, J. ..	22	"	1	2′ 8″	"	S.E. 1 in 3	"	1	6′ x 4′	33′	"	80	..	80	..	80	..	2	2	hand	..	..	..	natural	13/1/86
25. Homebush, South Malvern	McIlraith, J. A., General Manager Brown, T., Mine Manager	13	"	2	3′ 6″ to 7′	"	E. 10° S. 1 in 3	"	2	3′ 6″ x 3′, 3′ 6″ x 3′	60′, 20′	"	6,967	230	7,197	63,274	70,471	2	15	17	horse	..	..	..	"	14/1/86
26. Hartley, Whitecliffs ..	Fergusson, A. ..	..	"	1	11′	"	S. 60° E. 1 in 3½	"	1	3′ x 2′	52′	engine-plane	5,033	178	5,211	13,505	18,716	5	20	25	engine, 14 h.-p.	15″	6″	45′	"	15/1/86
27. Whitecliffs, Whitecliffs ..	Smart, W.	5	"	1	7′ 6″	"	S. 52° E. 30°	"	1	..	..	adit	352	..	352	4,600	4,952	..	2	2	hand	..	..	..	"	15/1/86
28. St. Helen's, No. 1, Whitecliffs		2	"	2	5′ 6″	"	S. 52° E. 30°	"	..	..	..	"	338	..	338	..	338	..	7	7	"	..	..	..	"	15/1/86
29. St. Helen's, No. 2, Whitecliffs		1	"	1	3′ 6″	"	S.E. 1 in 4	"	..	..	..	"	100	..	100	..	100	..	1	1	"	..	..	..	"	15/1/86
30. Snowdon, Rakaia Gorge	Gerard, W. (owner)	..	altered brown	1	9′ 3″	"	N. 80° W. 32°	"	..	..	..	"	50	..	50	..	50	..	1	1	"	..	..	..	..	18/4/85
31. Acheron, Acheron ..	..	18	..	1	5′ 3″	"	S. 45° W. 18°	"	..	..	..	"	50	..	50	50	100	..	1	1	"	..	..	..	..	18/4/85
32. Mount Somers, Mount Somers	Milne, James ..	20	brown	1	25′	20′	..	open work	..	..	..	..	210	..	210	3,781	3,991	1	..	1	..	..	..	..	..	27/12/79
TIMARU DISTRICT.																									
33. Elephant Hill, Waimate	..	5	"	1	14′	7′ 6″	N. 70° E. 15°	bord and pillar	..	..	..	adit	..	..	..	726	726	..	..	..	hand	..	..	..	natural	14/10/85
34. Studholme, Waimate ..	Packer, W. ..	1	"	1	11′	8′	S. 60° W. 10°	"	..	..	..	"	200	..	200	..	200	..	1	1	"	..	..	..	"	13/10/85
OTAGO DISTRICT.																									
35. Wharekuri, Wharekuri	Cairns, W. B. ..	19	"	1	25′	14′	S. 60° W. 60°	narrow work	1	4′ x 3′	80′	"	600	..	600	6,820	7,420	2	2	4	"	..	..	..	"	16/9/85
36. Kurow, Kurow ..	Muir, R. ..	6	"	1	18′	all	N.E. 63°	"	1	..	..	"	95	..	95	860	955	..	2	2	"	..	..	..	"	16/9/85
37. Prince Alfred (No. 1), Papakaio	Willetts, John	16	"	1	8′	"	N. 50° E. 12°	bord and pillar	1	4′ diam.	42′	"	2,630	..	2,630	20,098	22,728	2	8	10	"	..	..	..	"	16/12/85
38. Prince Alfred (No. 2) ..		9	"	1	9′	"	E. 10° S. 1 in 5	"	1	"	60′	"														
39. St. Andrews	Nimmo, John ..	7	"	1	6′ 6″	"	E. 13°	"	1	"	26′	"	1,123	..	1,123	5,973	7,096	2	2	4	horse	..	..	..	"	16/12/85
40. Ngapara, Ngapara ..	Nimmo, James ..	7	"	1	25′	7′ to 8′	N. 5°	"	1	4′ 6″ x 2′ 8″	36′	"	828	..	828	5,428	6,256	1	2	3	"	..	..	..	"	17/9/85
41. Diamond Hill, Hampden	Donaldson, W. ..	2	"	1	3′ 6″	all	N.E. 1 in 17	"	1	3′ 6″ x 2′	30′	"	163	..	163	174	337	..	1	1	hand	..	..	..	"	18/9/85
42. McDonald's	McDonald, A. ..	1	..	1	15	"	S.E. 1 in 5	"	1	2′ 9″ x 4′	3′ 6″	"	175	..	176	..	176	1	..	1	"	..	..	..	"	18/9/85
43. Shag Point, Palmerston	Williams, W. H.	22	pitch	2	3′ 6″ to 5′ 6″	"	E. 1 in 4	"	1	13′ x 5′	247′	shaft, e. p.	4,873	275	5,148	165,027	170,175	10	25	35	engine	..	..	..	steam	4/11/85
44. Hill's Creek, Hill's Creek	McKnight, James	21	lignite	1	6′	"	S.S.W. 40°	open work	..	..	..	..	78	..	78	217	295	1	..	1	..	..	..	..	"	24/3/84

Statistics of Workings in Coal Mines, 1885—*continued*.

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1885.			Approximate Total Output to 31st December, 1885.	Approximate Total Output to 31st December, 1886.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Tunnel.	Depth of Shaft or Length of Tunnel.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
Otago District—*continued*.													Tons.	Tons.	Tons.	Tons.	Tons.									
45. Idaburn, Rough Ridge ..	Grant, W. A. ..	15	lignite	1	23′	all	N. 10°	open wk.	..	..	..	..	2,128	..	2,128	11,029	13,157	2	..	2	..	6′	2″	20′	..	27/1/86
46. Border, Rough Ridge ..	Turnbull, George	15	"	1	20′	12′	N.W. 10°	"	..	..	..	..	367	..	367	232	599	1	..	1	..	..	..	..	..	27/1/86
47. Cambrian's, St. Bathan's	Jones, J. R. ..	24	"	1	25′	all	W. 10°	"	..	..	..	..	593	..	593	6,547	7,140	2	..	2	..	..	..	..	..	26/3/84
48. Cambrian's	Dungan, Caleb ..	1	"	1	23′	"	..	"	..	..	..	..	200	..	200	..	200	2	..	2	..	..	..	..	..	..
49. Kyeburn, Kyeburn ..	McCready, D. ..	12	brown	1	25′	12′	S. 45′ W. 40°	bord and pillar	1	2′ x 3′	10′	adit	481	250	731	11,447	12,178	..	3	3	hand	..	..	..	natural	26/1/86
50. Perseverance, Kyeburn	Stuart, J. ..	7	lignite	1	18′	12′	S. 45′ W. 40°	"	2	2′ 3″ x 6′ 2′ 6″ x 5′	50′ 50′	" "	140	150	290	3,736	4,026	1	1	2	"	..	..	..	"	26/1/86
51. Archer, Kyeburn ..	Archer, C. ..	3	"	1	8′	5′ 6″	S. 45′ W. 70°	"	1	2′ x 5′	50′	shaft	100	20	120	250	370	1	1	2	"	..	..	..	"	26/1/86
52. Taieri, Hyde	Boulter, G. ..	6	"	1	15′	15′	E. 15°	"	1	..	..	adit	107	50	157	..	157	1	1	2	"	..	..	..	"	28/1/86
53. Alexandra, Alexandra ..	Thomson, W. ..	7	brown	1	12′	6′	N.W. slight	"	2	5½′ x 2¾′ 4½′ x 2½′	60′ 50′	shaft	728	..	728	8,281	9,009	1	1	2	horse	..	..	..	"	19/3/84
54. Macqueenville, Alexandra	Mackersey, John	..	"	1	5′	all	..	"	1	3′ x 5′	42′	"	750	..	750	2,173	2,923	2	1	3	"	..	..	..	"	..
55. Excelsior, Cromwell ..	Johnston, R. ..	4	"	1	12′	7′	E. 6° S.	narrow work	1	3′ x 4′	70′	adit	450	..	450	652	1,102	..	1	1	hand	..	..	..	"	21/3/84
56. Bannockburn, Cromwell	Parcel, William ..	14	"	1	12′	6′	N. 70° W.	bord and pillar	..	..	..	engine-plane	608	20	628	6,412	7,040	1	2	3	engine, 8 h.p.	3′	6″	50′	"	21/3/84
57. Kawarau, Cromwell ..	Pryde, John ..	8	"	1	15′	all	W. 1 in 4	"	1	6′ x 2′	30′	adit	996	..	996	4,622	5,618	..	2	2	hand	..	..	..	"	21/3/84
58. Clyde, Clyde	Hoet, James ..	5	"	1	20′	..	S. 1 in 1	narrow work	2	3′ x 3′ 6″ 3′ 6″ x 4′	160′ 36′	shaft	220	..	220	16,797	17,017	1	1	2	horse	..	..	..	"	20/3/84
59. Clyde, Clyde	Marie, C. T. ..	14	"	1	20′	10′	S.E. 5°	bord and pillar	2	3′ 6″ x 4′	36′	adit	150	10	160	3,232	3,392	1	1	2	hand	..	..	..	"	20/3/84
60. Earnscleugh, Clyde ..	Buckley, John ..	9	"	1	14′	8′	S.W. 1 in 8	"	1	3′ x 4′	32′	"	276	140	416	2,262	2,678	..	2	2	horse	..	..	..	"	20/3/84
61. Gibbston, Arrow ..	Williams, S. ..	18	"	1	40′	..	S.W. 30°	"	..	..	..	..	1,650	..	1,650	8,070	9,720	2	4	6	hand	..	..	..	"	22/3/84
62. McPherson's, Roxburgh	Jones, J. ..	15	lignite	1	25′	20′	W. 1 in 7	open work	..	..	..	..	380	..	380	1,891	2,271	..	2	2	..	..	..	..	..	19/3/84
63. Robertson's, Roxburgh	Robertson, James	22	"	1	28′	20′	W. 1 in 7	"	..	..	..	..	700	200	900	8,586	9,486	..	3	3	..	..	..	..	..	19/3/84
64. Fernhill, Green Island ..	Shaw, J. E. ..	8	brown	1	19′ 6″	7′	N. 10° E. 1 in 10	room & rance	1	3′ 6″ x 4′ 9″	40′ x 50′	adit	8,764	1,840	10,604	34,997	45,601	1	9	10	horse	..	..	..	furnace	19/1/86
65. Green Island, Green Island	Richardson, D. ..	13	"	1	14′	7′	E. 10° N. 1 in 10	"	1	4′ 6″ x 12″	130′	engine-plane	4,910	2,500	7,410	80,982	88,392	3	12	15	engine	..	..	..	natural	22/9/85
66. Saddle Hill, Green Island	Campbell, J. ..	11	"	1	19′ 6″	11′	E. 1 in 10	"	2	4′ 4″ x 8′	60′	shaft	2,481	2,937	5,418	47,887	53,305	3	6	9	horse	..	..	..	furnace	9/2/86
67. Saddle Hill, Green Island	Harris, A. ..	2	"	1	19′ 6″	6″	"	"	1	2′ 4″ x 5′	35′	adit	1,200	50	1,250	76	1,326	1	2	3	"	..	..	..	natural	22/7/85
68. Glenochiel, Green Island	Bryce, A. ..	4½	"	1	10′	7′	varies	"	1	4′ x 8′	48′	shaft	415	107	522	1,906	2,428	1	1	2	"	..	..	..	"	2/2/86
69. Walton Park, Green Island	London, J., General Manager Lindsay, W., Mine Manager	15	"	1	18′	7′	E. 1 in 9	"	3	4′ x 11′ 4′ 6″ x 12′ 6″ 4′ x 5′	175′ 173′ 25′	" " adit	18,025	5,190	23,215	270,199	293,414	8	45	53	engine and horses	4′ 6″	11″	175′	furnace	16/7/85

70. Abbotsroyd	Freeman, James	4½	"	1	16′	7′	E. 10° N. 1 in 10	"	1	..	..	engine-plane	9,731	2,299	12,030	74,656	86,686	6	20	26	engine	2′ 6″	6″	47′	natural	21/1/86
71. Mosgiel	Sneddon, James	1	"	1	15′	7′	S. 1 in 10	"	1	2′ 4″ x 3′ 10″	32′	adit	150	..	150	..	150	2	3	5	hand	*	*	*	"	2/2/86
72. Bruce, Milton	Hardwick, N. ..	11½	pitch	1	12′ 6″	6′	varies	bord and pillar	..	..	..	"	1,500	20	1,520	10,364	11,884	2	3	5	"	..	..	..	"	28/9/85
73. Real Mackay, Milton ..	Young, A. ..	17½	"	1	25′	8′	N.E. to E. 1 in 8	"	..	..	..	"	400	..	400	11,869	12,269	..	2	2	"	..	..	..	"	13/2/85
74. Fortification, Milton ..	Reid, T. ..	2	"	1	12′	6′ to 7′	S. 60° E. 5°	"	..	..	..	"	400	..	400	384	784	..	2	2	"	..	..	..	"	12/12/84
75. Cannon's, Lovell's Flat..	Cannon, T. ..	15	lignite	1	20′	all	varies	open work	..	..	..	..	600	..	600	2,460	3,060	1	..	1	"	..	..	..	..	21/7/85
76. Paskell's, Glenore ..	Paskell, J. T. ..	21	"	1	8′	"	N.E. 1 in 6	"	..	..	..	..	44	..	44	202	246	1	..	1	..	..	..	..	..	25/9/85
77. Adams's, Clarkesville ..	Reid, John ..	..	"	1	8′	"	S. 45° E. 12½°	"	..	..	..	..	80	..	80	78	158	..	1	1	..	..	..	..	..	5/2/85
78. Benhar, Balclutha ..	Nelson, John ..	21	brown	1	40′	"	S. 17°	bord and pillar	1	4′ x 4′	28′	engine-plane	4,801	1,500	6,301	36,340	42,641	1	9	10	engine 8 h.p.	†	†	†	furnace	24/9/85
79. Kaitangata, Kaitangata	Watson, W. P., Gen. Manager Shore, W. M., Mine Manager	10	pitch	1	30′	9′	N.N.W. 1 in 5 to 1 in 2	"	2	4′ 6″ x 11′ 9″	392′	"	32,665	13,603	46,268	242,103	288,371	8	102	120	engine	..	..	..	"	8/10/85
80. Wangaloa, Wangaloa ..	Smith, Joseph ..	5	"	1	10′ 6″	6′	E. 1 in 6	"	..	..	..	adit	30	10	40	680	720	..	1	1	hand	..	..	..	natural	9/10/85
81. Lesmahagow, Wangaloa	Sewell, R. M. ..	4	"	1	5′	all	N. slight	"	..	..	..	"	104	..	104	430	534	1	1	2	"	..	..	..	"	9/10/85
82. Wyndham, Wyndham ..	George, Thomas	8	lignite	1	4′	"	..	open work	..	..	..	..	450	..	450	508	958	1	..	1	"	..	..	..	..	18/2/85
83. Sheddon's and Dawson's, Gore	S. and D. (owners)	8	"	1	6′	"	..	"	..	..	..	..	40	..	40	448	488	1	..	1	..	..	..	..	..	19/2/85
84. Lieze's, Gore	Lieze, M. ..	2	"	1	5′	"	..	"	..	..	..	..	200	50	250	50	300	2	..	2	..	..	..	..	..	19/2/85
85. Chittock's, Gore ..	Chittock, C. ..	3	"	1	5′	5′	..	"	..	..	..	..	706	..	706	1,128	1,834	3	..	3	..	..	..	..	..	19/2/85
86. McKinnon's, Gore ..	McKinnon, A. ..	4	"	1	5′	all	..	"	..	..	..	..	80	..	80	612	692	1	..	1	..	..	..	..	..	19/2/85
87. Chatton, Chatton ..	Pacey, W. R. ..	9	"	..	..	..	..	..	..	..	..	..	80	..	500	2,598	3,098	2	..	2	..	..	..	..	..	..
88. Pukerau, Pukerau ..	Mackenzie, James, Genral Manager McLachlan, S., Mine Manager	6	"	1	16′	6′	W. 1 in 10	bord and pillar	..	..	..	adit	3,290	..	3,290	8,957	12,247	1	6	7	hand	..	..	..	natural	16/12/84
SOUTHLAND DISTRICT.																									
89. Mataura, Matarua ..	Beattie, John ..	10	"	1	12′ 6′		..	open work	..	..	..	..	1,864	..	1,864	8,717	10,581	2	..	2	..	6′	3″	22′	..	15/12/84
90. Mataura, Mataura ..	Culling, Thomas	10	"	1	6′	all	W. 1 in 20	"	..	..	..	..	1,500	..	1,500	5,246	6,746	3	..	3	..	..	..	..	..	15/12/84
91. Menzie's Ferry, Wyndham	Morris, John ..	5	"	1	3′ 7″	"	level	"	..	..	..	..	476	..	476	1,091	1,567	2	..	2	..	..	..	..	..	18/2/85
92. Nightcaps, Nightcaps ..	Llyod, John ..	8	pitch	2	2′ 4″ to 10′	"	S. 10° E. 1 in 3½	bord and pillar open wk.	2	3′ x 6′ 4′ 6″ x 6′	138′ 12′	engine-plane	5,100	..	5,100	32,990	38,090	8	12	20	engine	3′ 9″	6″	135′	furnace	19/6/85
93. Morley's Creek, Nightcaps	Mackinnon, R. (owner)	1	"	..	..	"	..	..	..	..	..	..	55	..	55	..	55	2	..	2	..	..	..	..	..	..
94. Wairio, Nightcaps ..	Knight, Thomas	5	"	1	7′ 6″	6′	..	open work	..	..	..	..	750	..	750	1,180	1,930	2	..	2	..	..	..	..	..	19/6/85
95. Fairfax, Fairfax ..	Todd and Graham (owners)	8	lignite	1	5′ 6″	all	S.W. 1 in 20	"	..	..	..	..	960	..	960	2,800	3,760	3	..	3	..	..	..	..	..	17/2/85
96. Orepuki, Orepuki ..	Shore, T. ..	3	pitch	1	9′	..	..	bord and pillar	1	5′ x 10′ 6″	202′	shaft	1,551	540	2,091	14	2,105	4	7	11	engine	..	..	..	..	18/6/85
Totals	..	..	..	..	..	..	..	..	..	..	..	..	439,985	71,078	2971136	..	3,482,199	..	..	..	..	..	..	..	..	..
Output from mines whose operations have been suspended, but were included in return for 1884																	26,236									
Output from mines whose operations have been suspended last year																	9,826									
Total output																	3,518,261									

* Syphon. † Steam jet.

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