SESSION II.

1906.

NEW ZEALAND.

INSPECTION OF COAL-MINES REPORT.

("THE COAL-MINES ACT, 1905.")

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

No. 1.

Mr. JOHN HAYES, F.S.Sc., Inspecting Engineer, to the UNDER-SECRETARY, Mines Department.

SIR, Mines Department, Wellington, 20th April, 1906.

I have the honour to submit the annual reports on the coal-mines of the colony for the year ended 31st December, 1905.

OUTPUT.

The output of the several classes of coal mined in each inspection district is summarised as follows :—

Class of Coal, &c.	Northern District.	West Coast District.	Southern District.	Total.
	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous coal ...	114,449	850,634	...	965,083
Pitch-coal	...	2,867	20,205	23,072
Brown coal	145,427	2,726	348,783	496,936
Lignite	...	...	100,665	100,665
Totals	259,876	856,227	469,653	1,585,756

As compared with the output for the preceding year, the above statement shows an increase of 47,918 tons, and the comparison of the relative increase and decrease of the different classes of coal, &c., won during the year 1905 is given in the following tabulated form :—

Class of Coal, &c.	Northern District.		West Coast District.		Southern District.		Total Increase.	Total Decrease.	Total Net Increase.
	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.			
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous coal	8,230	...	18,335	...	...	...	...	...	...
Pitch-coal	...	...	470	...	...	1,904	..	...	...
Brown coal ...	9,129	...	472	...	3,477	...	...	...	...
Lignite	...	...	...	...	9,709	...	...	...	...
Totals ...	17,359	...	19,277	...	13,186	1,904	49,822	1,904	47,918

The total number of mines returned as being at work during the year is 177, of which twenty-eight employ more than twenty persons, and therefore require to be under the supervision and control of a manager holding a first-class certificate. Mines employing over six but not exceeding twenty persons number twenty-six, and for their management the holders of second-class certificates may be engaged. For mines at which not more than six persons are employed a suitable man, holding a permit from the Inspector of Mines for the district, can act as manager. These small mines are very numerous in the Southern District, where numerous deposits of lignite exist from which supplies are drawn for the gold-dredging and other industries, as well as for general domestic requirements. Many lignite-pits being worked opencast by quarrying, the number of men employed at such is included in that of persons employed above ground.

The approximate quantity of coal, &c., raised from the several mines throughout the colony up to the 31st December, 1905, is returned at 21,701,419 tons.

The number of persons ordinarily employed at all the mines to which the Coal-mines Act applies is returned at 833 above ground, and 2,436 below ground, making a total of 3,269, which number, divided into the tonnage returned, gives an average output of 485·08 tons per person employed. This, as has been pointed out in previous reports, is admittedly high in comparison with the average of many coal-mining countries, and is accounted for by the thickness of the seams worked in New Zealand, which admits of a greater output per man than can be attained in the working of thin seams.

Accidents.

During the year accidents attended with fatal results occurred to six persons. Of these, one was on surface railway-works, one at an opencast mine, and the remaining four in connection with underground workings. All were duly investigated by officers of the Department. The fatalities were at the rate of one for every 264,292·6 tons raised and 544·8 persons employed.

It may be noted that among those who lost their lives by accidents underground was Mr. R. S. Jordan, general mining-manager of the New Zealand Coal and Oil Company's Collieries at Kaitangata. Mr. Jordan was superintending operations for the suppression of a fire which had broken out in the Castle Hill Mine when he was overcome and suffocated by heat and smoke.

Of the non-fatal accidents reported, only one may be classed as of a permanently serious nature; a few others occurred by which men were off work for somewhat lengthy periods, but the majority were of a simple character, such as are incidental to ordinary conditions of mining-work.

Taken as a whole, very great care is exercised by managers of mines and their officials in the interests of safety of life and limb.

Prosecutions.

Action was taken by the Inspector of Mines for the West Coast District against three employees of the Blackball Coal Company (Limited), for neglecting to sprag their coal whilst holing (in contravention of special rule 36, the Coal-mines Act). The charge was sustained, and the offenders each mulcted in a fine of £1 with costs.

Considering that accidents from falls of coal are not uncommon, it is to be hoped that the proceedings referred to will have a salutary effect, and cause men to recognise that a legal obligation rests on them to pay attention to conditions affecting their own safety.

General.

The mechanical ventilation of mines by centrifugal fans is now general at the most important collieries, the only exception to this practice at any of the larger mines being at Castle Hill Colliery, Kaitangata, where ventilation by furnace is adopted, conditions being favourable to this method. During the year ventilating-fans have been put to work at Blackball and Puponga Collieries, and more powerful plant of this class installed at the Westport Coal Company's Denniston Colliery.

There is also a disposition on the part of the owners of smaller mines to adopt the system, and so obtain more reliable currents than is possible with natural ventilation, or ventilation induced by furnaces in shallow upcast shafts, or the heat from steam-pipes placed in a return airway.

For the drainage of mines the system of water-level adit is generally adopted where the collieries are situated in high country admitting of this arrangement, and the completion of a water-level tunnel has enabled the Blackball Coal Company to dispense with the use of the electrically driven pumps lately employed to drain the dip workings. At both of the collieries belonging to the New Zealand Coal and Oil Company (Limited), at Kaitangata, treble-ram pumps, placed at the bottom of the main inclines, are worked by endless ropes which are independent of the haulage-ropes. This method gives very satisfactory results. The system of rope transmission for pumping purposes was also introduced at the Alexandra Coal Company's pit, Alexandra (Otago), but the distance for transmission of power being

short, and local conditions making several bends in the rope unavoidable, wear-and-tear was found to be very considerable. Acting on my suggestion when visiting the mine in the early part of the year, the system was discarded, and a small pair of engines connected to the pumps by spur-gearing. This arrangement is giving very satisfactory results, and effecting considerable economy. At Allandale Colliery (Otago), where electrical power is used underground for hauling and pumping, a Mather and Platt patent high-lift centrifugal pump (for supplementary purposes) was decided upon during the year, and has recently been put to work. This, the first of its type to be used at any of the mines in this colony, is electrically driven; and the pump, although only a small one, has fully proved its suitability for mine-drainage. Its capacity is 5,000 gallons per hour against a vertical head of 210 ft., with an electrical energy of 200 volts and 37 amperes. The mine-manager informs me it is giving every satisfaction, and that a better pump could not be wished for. From the experience gained in the use of electricity for haulage and pumping it is probable that in the near future the Allandale Coal Company will considerably extend their electrical plant, and substitute an electrically driven high-lift centrifugal pump for the steam-pump now used for the main drainage of the mine. The class of pump under notice was described in the Mines Report (page 75, Goldfields division) presented to Parliament during the session of 1903.

In order to overcome the objectionable features of the exhaust from steam-pumps when discharged into the atmosphere of a mine or into the sump, advantage has been taken at a few mines of the simple condenser described and illustrated in my report (C.–3A) of two years ago. As a vacuum is obtained in addition to the advantage derived by the suppression of what would otherwise be a nuisance and also a source of danger by weakening the roof strata, the arrangement has proved of value in the economies of coal-mining; but, as pointed out in the description alluded to, the system has its limits, and is not applicable where the diameter of the steam-cylinder is more than double the diameter of the ram or water-piston, owing to the excessive proportion of steam to water detrimentally affecting the suction of the pump by the incomplete condensation of the exhaust-steam. To meet those cases where the relative diameters of steam and water cylinders are such as demand some other method of condensation, a very simple yet effective plan is to make the discharge-pipes for some distance from the pump of larger size than is necessary for discharge purposes alone, carrying the exhaust-steam pipe alongside the larger discharge-water pipe, then returning it *inside* the latter almost to the pump, and finally turning it into the suction-pipe. It is to be remembered that the enlarged pipe must be equal in area to the ordinary size of the discharge-pipe plus that of the exhaust-steam pipe. *Example:* Say (*a*) discharge-pipe 5 in. internal diameter, (*b*) exhaust-pipe 4 in. external diameter, then area of (*a*) 19·63 square inches + area of (*b*) 12·56 square inches = 32·19 square inches. The enlarged pipe would have an area of not less than 32·19 square inches, and the nearest size to this would be 6½ in. diameter, giving an area of 33·18 square inches.

In practice it has been found that good condensation has been effected with 120 ft. of exhaust-pipe submerged in the enlarged discharge-pipe in the manner described, and that an average vacuum of 7 lb. per square inch has been obtained. It is a wise precaution to have a check-valve on the exhaust-pipe near where the latter is turned into the pump suction-pipe, and also advisable to turn the end of the exhaust-pipe into the suction in the manner shown in the description of the simple condenser illustrated in the report already referred to.

Operations for the opening of a new colliery at Ngakawau, near Westport, have been commenced by the Westport-Stockton Coal Company (Limited) on the area referred to in my last report as having been taken up by Mr. G. L. Tacon. It is also understood that a Home company will open a colliery on land adjoining that held by the Westport Coal Company (Limited), formerly known as Cooke's lease. A colonial company, the Paparoa Coal-mining Company (Limited), has also been floated to take over the lease of Messrs. Cutten and Neilsen at Paparoa, near Greymouth, and active operations for the establishment of a large colliery are to be put in hand at an early date.

Matters in connection with the working of the New Zealand State Coal-mines form the subject of separate reports by the Managers.

Examinations for Mine-managers' Certificates.

A copy of the papers set for the last examination of candidates desiring to qualify as mine-managers is appended.

Schedules.

The list of persons to whom managers' certificates of service and of competency have been issued is appended, as are also the statistical tables showing the output of coal, &c., from, and the numbers of persons employed at, the several mines throughout the colony.

I have, &c.,

John Hayes,

Inspecting Engineer.

The Under-Secretary for Mines, Wellington.

No. 2.

Mr. JAMES COUTTS, Inspector of Mines, Thames, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Inspector of Mines' Office, Thames, 19th February, 1906.

In compliance with section 75 of "The Coal-mines Act, 1905," I have the honour to transmit the following report on the coal-mines in the Auckland District for the year ended 31st December, 1905:—

Kawakawa.—This mine was for several years under the management of Mr. John Culley. Since his death his son, W. H. Culley, was granted a permit to manage the mine, in accordance with section 26 of "The Coal-mines Act, 1905," and continued to carry on the work as formerly laid out, but the pillars of coal left by the former owners becoming exhausted the lease was surrendered, and operations in the mine stopped on the 27th October, 1905. The output of coal for the year was 1,674 tons, a decrease of 1,838 tons as compared with the previous year. Five men were employed.

Hikurangi Coal Company (Limited).—This company's mine is under the management of Mr. T. P. Moody, who has carried on the various works successfully for the last thirteen years. The company's operations are still being directed to opening up a large area of coal on the western side of the railway, and, so far as this section has been proved, the coal has exceeded the manager's most sanguine expectations as regards thickness and quality. The seam has varied from 7 ft. to 10 ft. in thickness, the coal is easily worked, the roof fairly good, and there has not been the slightest difficulty in getting sufficient coal to supply the demand. Men are constantly employed in extracting pillars from the rise-workings on the eastern side of the railway. The coal from here being taken out in a careful and systematic manner comparatively little or nothing is lost. It was fully expected there would be a large quantity of water to contend with in the dip workings under the swamp, but a small Tangye Duplex steam-pump with 10 in. steam-cylinder is quite large enough to keep the workings dry. The ventilation in the mine when last inspected was all that could be desired; the workings were safe, and abundance of props and timber kept on hand to be used in securing the workings for the safety of the miners as required. The output of coal for the year was 50,410 tons, an increase of 5,436 tons as compared with the previous year. An average of sixty-one men were employed.

The Northern Coal Company (Limited), (W. R. Dunn, manager).—This company are extending their workings in a north-easterly direction. The coal is said to be improving in quality as the bords are being advanced. The seam varies from 6 ft. to 7 ft. in thickness. In the beginning of the year a new tramline and self-acting incline were constructed, which give better facilities for haulage, and have also effected a considerable saving in the cost of conveying the coal from the mine to the railway, where a new siding has been made north of the former loading-bank. The workings being still on the rising ground there is no water to contend with; the coal is easily worked, and therefore can be put on the market at a low price with a profit. The output of coal for the year was 37,733 tons, an increase of 12,014 tons as compared with the previous year, which enabled the directors to pay a dividend. The prospects are so much improved that dividends may be looked for by the shareholders at regular intervals. On an average sixty men were employed.

Waro (Phœnix), (George Kerr, manager).—The company carried on various works during the year, the principal being the extension of the dip incline and opening up another level. The country in this section of the mine has been very much disturbed, faults being frequently met with, necessitating a large amount of extra work in opening up the patches of coal between them, and thereby adding to the cost of production. For some time past the mine has not been a paying concern, and the company entered into negotiations with the Northern Coal Company with a view to bringing about an amalgamation of the two companies. In consequence of this arrangement the mine was stopped in the month of October last. The output of coal for the year was 5,041 tons, a decrease of 2 tons as compared with the previous year. Thirteen men were employed

Panipo, Kiripaka (George Clemo, manager).—This company's operations have been mostly confined to the dip below the water-level, a small duplex steam-pump being used to keep this portion of the mine dry. The seam has varied from 2 ft. to 20 ft. in thickness, the whole (in most instances) being taken out as the levels and bords were advanced. The coal being of a soft, friable nature, there appeared to be no proper method of working, the coal being gouged out any way. As a rule, when a seam opens out to a great thickness the bottom portion is sometimes taken out first, but generally the top is advanced first and the bottoms benched down for the safety of the men, yet this mine under the management of Mr. Clemo has been very free from accidents of any kind. To work the remainder of the coal in this company's lease to advantage it was found (owing to the complicated nature of the boundary) to be to the mutual advantage of this company and the Ngunguru Coal Company to amalgamate their interests, an arrangement which was given effect to at the end of the year, Mr. A. H. Taylor of the Ngunguru Mine being appointed mine-manager of the combined properties. The output of coal last year was 8,720 tons, a decrease of 3,884 tons as compared with the previous year. Fourteen men were employed.

Ngunguru Mine (A. H. Taylor, manager).—This mine has been continuously worked for the last thirteen years with varied success. The seam being very thin, and the operations during the year entirely confined to the extraction of pillars of coal in the rise-workings, and those becoming exhausted,

it was found necessary either to stop operations altogether or open up the coal-seam in a fresh place on the company's property. There being a considerable area of coal adjacent to the Kiripaka Mine, it was found advisable to enter into an amalgamation with that company. The mine is now being opened up near the Kiripaka workings, and it is intended to extend the Ngunguru tram-line from the bottom of the incline to the Kiripaka Mine (a distance of about half a mile) to enable a constant supply of coal being conveyed to the loading-ground, instead of depending on sending it down the river on punts. This latter method made deliveries very uncertain when the river was low in summer. The output of coal for the year was 10,871 tons, a decrease of 3,496 tons as compared with the previous year. Twenty-two men were employed.

The Union Collieries (Limited), Maramarua (F. J. Tattley, manager).—The present manager has made great improvements in the mine, and the various arrangements which have been made are working much more satisfactorily than in the past. A pair of headings are being driven east from the most southerly point of the workings with a view of improving the ventilation and reducing the risk of accidents through having to truck through the old workings. As those headings are advanced a large area of coal will be drained and opened up. It is found that as the workings approach the sandstone cover the quality of the coal greatly improves, and it is fully expected that a better class of coal of its kind will be supplied than has been mined hitherto. The sump (or water-lodgment) in the mine has been enlarged, a larger pump is being put in, and a superheater is being connected to the Cornish boiler. These improvements, when all completed, will enable the water to be pumped out of the mine in a shift of eight hours, and thereby effect a considerable saving. A new barge has been built capable of carrying a load of 100 tons on a 3 ft. 3 in. draught of water, which will greatly facilitate the carriage of the coal from the mine to the loading-siding at the railway. A screening plant is also to be erected for the treatment of the slack, with a view to the separation of the nuts coal as a marketable product. The improvements mentioned will place the plant more in keeping with the requirements of the times. The output of coal for the year was 15,994 tons, an increase of 652 tons as compared with the previous year. Twenty-nine men were employed.

Mangapapa (Mokau Coal-mine), (William Lennox, manager).—This mine has been working for twenty years, and although the coalfield is very extensive and the coal of a superior quality of its kind, very little has been done to facilitate the development of what is known to be a coal-bearing area of considerable extent. The mine is situated forty miles north of New Plymouth, where there is a good market for the coal, but the demand can seldom be supplied owing to the difficulties of transport, the mine being twenty miles up the Mokau River. The course of the river is very tortuous, the four miles next the mine being narrow and difficult for navigation of steamers, and little has been done to improve it beyond removing a few snags in the lower reaches. The land adjacent to the river being hilly and covered with bush, landslips are of frequent occurrence. The timber and *débris* from the slips find their way into the river and sometimes stop the steamers from getting up to the mine. Of all the mines in this district this is the most isolated. It is almost impossible to reach the mine except by the river, therefore connection by telephone would be a great boon to the people who are compelled by circumstances to reside there. The mine plant is of a most primitive character, and as the coal-seam crops out on the banks of the river very little capital was required to open the property on the small scale hitherto worked. The cover of the coal being a good bed of hard sandstone little timber is required, and as the coal is easily worked the cost of production at the mine is very low. Early in the year a new section of working was opened up on good coal where the present operations are being chiefly directed, and as this is only in 6 chains from the mouth of the main tunnel a large saving is effected in the cost of haulage. The output of coal for the year was 3,753 tons, a decrease of 527 tons on the previous year. Thirteen men were employed.

Taupiri Coal-mines (Limited), (E. S. Wight, manager).—Ralph's section: The principal development-work in this section of the mine has been the extension of the main heading towards a point under Waahi Lake. This has been driven a distance of 20 chains during the year, and is draining and opening up a large area of coal of good quality. A great amount of the haulage in the mine is done on the endless-rope system (which has lately been introduced) and is effecting a large saving as compared with the old method. As the levels and headings are always kept well in advance there is always a number of bords ready where a large number of men can be employed at very short notice in case of emergency. Although the workings are under the Waikato River and extend for a considerable distance on the other side of it, the mine is comparatively dry, the cost of pumping the water that accumulates being a mere trifle. A substantial ladderway has been put in the outlet (or upcast) shaft to give the men better facilities for getting out of the mine in case of emergency. This provision gives an alternative to the ordinary method of raising the men by engine-power.

The Extended section: Very little development-work has been carried out in this mine during the year as there was an ample number of bords ready for the men likely to be employed for some time to come, but it is now intended to at once extend the dip for a further distance of 6 chains to open up a large area of coal which has been proved to be of good quality. Screens of a modern design have been erected on the pit-bank, and an air-compressor to supply air for the men working in the dip. For working the endless rope an engine (with a pair of 12 in. cylinders by 30 in. stroke) has been erected on the surface, the ropes working through two pipes that have been placed in position between the surface and the workings in the mine. This section is now being equipped for an output of 600 tons per day, and vigorous development-work is to be carried out to enable this to be done. To meet the demands for increased ventilation a fan of the "Sirocco" type has been ordered. This will have a capacity for 107,000 cubic feet of air per minute, and be driven by a compound engine.

Taupiri Reserve: As sufficient coal to supply demands has been obtained for some time past from the other two sections of the company's property only four men are now employed in this section. These men send out enough slack coal to raise the steam necessary to keep the pumps going and the workings properly drained. The mine is in good order and so circumstanced that in the event of an increased demand, or any breakdown at the company's other mines, a number of men can be put on to get coal at very short notice. A sufficient output of coal is obtained from this section every year to comply with the terms of the lease.

The output of coal for the year from the combined properties was 118,612 tons, an increase of 2,151 tons as compared with the previous year. 254 men are employed by the company.

Taupiri South (formerly Harrison's), (William Morgan, manager).—This mine is situated on the eastern side of the railway at Huntly, and opened out on the outcrop above what is termed "Ralph's old section of the Taupiri Coal-mines (Limited)." The quantity of coal in this company's lease is limited, and the entire section that has been worked during the year is exhausted. Prospecting, with the object of discovering another patch of coal, is now being undertaken; but, on the whole, the work has been of a very unsatisfactory character. The output of coal for the year was 6,705 tons, an increase of 6,490 tons as compared with last year.

Drury Colliery, Drury (Robert McEwen, manager).—This company was ill-advised in expending a large sum of money in constructing a tram-line for a distance of two miles from the railway to the mine. The operations carried on in the mine have so far proved the coal-seam not to be of a payable character, on account of the numerous faults met with and ribs of stone running through the seam. This was very disappointing to the shareholders, as the works had got to that point when the mine was expected to pay; as the prospects were anything but encouraging, the operations in the mine were stopped. The company's attention is now directed to the fireclay deposits on the property, and they intend erecting machinery for the purpose of making firebricks, gas-retorts, and sanitary drain-pipes, &c. The output of coal was 363 tons. Thirteen men were employed.

The total output of coal from all the mines in this district was 259,876 tons, an increase of 17,359 tons as compared with the previous year.

Non-fatal Accidents in Coal-mines.

The following are the names of persons injured in the mines in the Auckland District who sent in claims to be placed on the Coal-miners' Accident Relief Fund, the number of days they were off work, and the amount of money received:—

Date of Injury.	Name.	Mine.	Injury.	Number of Days off Work.	Amount received.
					£ s. d.
July 1, 1904..	S. Moreland ..	Ngunguru ..	Body severely injured ..	301	31 7 1
Feb. 3, 1905..	J. Lennon ..	„ ..	Thumb injured ..	20	2 1 8
Feb. 22, „ ..	E. Keatley ..	Northern ..	Jarred hand	28	2 18 4
March 3, „ ..	W. McKegg ..	„ ..	Foot injured	22	2 5 10
March 17, „ ..	T. Tatlock ..	Ngunguru ..	„	9	0 18 9
April 13, „ ..	J. Flannagan ..	Union ..	Leg broken and shattered	203	21 2 11
April 20, „ ..	A. Yates ..	Northern ..	Foot injured	24	2 10 0
May 22, „ ..	W. Holland ..	Ngunguru ..	Leg injured	15	1 11 3
June 6, „ ..	F. Cairns ..	„ ..	Sprained knee ..	14	1 9 2
Sept. 18, „ ..	C. Kerr ..	Northern ..	Bruised leg, and seriously injured	72	7 10 0
Sept. 18, „ ..	G. Goodhue ..	Hikurangi ..	Hand injured ..	12	1 5 0
Oct. 12, „ ..	W. Jackson ..	„ ..	Eye injured	15	1 11 3
			Total	735	76 11 3

Samuel Moreland, who, having been off work for 301 days, was found after examination by a medical officer to be permanently disabled, was paid the sum of £50 in satisfaction of all claims.

The total number of days men who were injured in the Taupiri Coal-mines were off work and received the usual weekly allowance through the Waikato Medical and Accident Society, Huntly, was 690 days, at 2s. 1d. = £71 17s. 6d.

I have, &c.,

James Coutts,

Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

No. 3.

Mr. ROBERT TENNENT, Inspector of Mines, Westport, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Inspector of Mines' Office, Westport, 28th March, 1906.

I have the honour, in compliance with section 75 of "The Coal-mines Act, 1905," to report as follows on the West Coast coal-mines for the year ending 31st December, 1905 :—

Enner Glynn Coal-mine.—Further prospecting on this property has been practically abandoned.

Shakespeare Bay.—Further prospecting for coal has been abandoned during the year.

Terakohi Coal Syndicate, Motupipi (owners, Messrs. Nalder and Gilmer).—(22/11/1905) : With the exception of driving a rise-heading and completing connection with a surface shaft for ventilating purposes, further extension of the main tunnel is practically abandoned. The drives, however, are securely timbered and in good order, but the difficulty of shipment in the Motupipi River seems to be the chief obstacle against further progress.

Golden Bay Coal-mine, Motupipi (A. G. French, general manager).—(10/9/1905) : To win the coal-seam at a depth of about 20 ft., below tidal level a short incline dip crosscut was driven, and the level extended in coal eastward under the terrace land a distance of about 100 ft. The coal-seam (brown) is parted by a middle band stone, the roof requiring careful timbering. (22/11/1905) : Pending the erection of lime-kilns and machinery applicable for the manufacture of Portland and other building cements, operations in connection with the coal-mine are suspended, and mine flooded. At time of writing, portion of the cement-making plant was delivered on the property.

Pakawau Coal-mine.—Mr. E. G. Pilcher, of Wellington, having recently acquired the legal and mining rights of this property formerly owned by Mr. Caldwell, of Ferntown, operations were recommenced in July last, Mr. P. McCaffrey being mine-manager. Under the new ownership the surface tram-line and loading-jetty have undergone a general overhaul, while attention was directed to unwater the dip workings and effect repairs necessary to restore ventilation, and extend further development. (20/11/1905) : Haulage, effected by a double-cylinder steam-driven winch, was in full work, the dip-heading face being worked continuously with three shifts of two miners each, the coal in face showing an average thickness of 3 ft., parted with two thin stone bands. The workings were in good order and well ventilated, and, in all, nineteen men were employed. At time of writing, work was confined to keeping the dip working free of water, effecting repairs to No. 1 rise level, and cutting out a siding at head of dip. Fifteen men employed.

Puponga Colliery (owners, Puponga Coal and Gold Mining Company (Limited); Mr. Sidney George Hayward, attorney).—(20/11/1905) : The mining operations continue to make steady progress northward to the dip of the coalfield, whilst favourable promise is maintained as developments extend towards the east, the output showing an increase of 7,727 tons, as compared with that of the previous year. Until lately some trouble was experienced in the west side workings (off main haulage-road), owing to the partial displacement of the upper section of the seam by the intrusion of a thickened middle band of fireclay. It is, however, worth noting that the geological features of the field show favourable change, whereby a still lower section of the seam (which formerly formed the floor of the main seam) is now thickening into a coal of excellent quality, which, together with the thinning of the band, will enable the two to be profitably worked. Thus a more pleasing aspect is reflected on this portion of the coalfield, and considerable saving in rock-drilling is effected. Had conditions continued to remain unchanged, rock-cutting was practically unavoidable, provided development was extended in that direction. As mentioned in my previous report, the Snow pump then installed has given satisfactory results, and enabled a further extension of the main dip heading to be made to a total depth of 600 ft., exposing a valuable area in the direction of the present working. In view of heading further dipward, and to provide ample power against probable increase of water at depth, the installation of a much larger type of pump, together with an additional 40-horse power boiler now under order, will, when completed, meet the present and anticipated requirements of the property for a considerable time, and command a large and valuable coal-bearing area. Throughout the whole working and disused areas ventilation is amply controlled by a fan of the Hayes type, which gives general satisfaction. Recent improvements in the screening and sorting plant enable the company to place a better class of household fuel on the market, while the new nut-washing plant and nut-storage bins have received considerable attention, with the result that the new plant not only provides a more perfect exclusion of small stone and pyritical matter, but the fine, coaly smudge is also more efficiently run off, thus insuring a larger and more uniform size of nut. Altogether, the developments of the coalfield show satisfactory promise, particularly in view of the recent thickening of good coal in the bottom seam. The provisions under the Coal-mines Act are strictly observed, and all reports duly recorded.

Mokihinui Colliery.—In the early part of the year the co-operative party was again reconstructed with a limited number of six shareholders, who during the two first quarterly periods produced 1,146 tons. Unhappily, with the continued soft character of the coal won and the keenly reduced selling-price obtained, the property was ultimately left as a standing memorial of absolute failure in winning coal on co-operative principles, and abandonment mutually declared. With the approval of the Hon. the Minister of Mines, possession was finally taken over by the management of the Seddonville State Colliery, when a general survey was made of the workings, all movable plant withdrawn, and all openings to the workings securely fenced off. There is little change to note regarding the burning mine.

Seddonville Colliery (New Zealand State mine; James Bishop, manager).—Details of working of this State coal-mine are published in Parliamentary Paper C.–3B.

Millerton Colliery (owners, Westport Coal Company (Limited); George Fletcher, mining-manager).—(23/12/1905): Mining operations have been somewhat depressed, owing exclusively to the restricted demands on the colliery as affected by trade requirements; on this account the management (in November last) deemed it advisable to shorten hands and keep the mine more fully employed on single shift, the output showing a marked decrease of 45,956 tons as compared with that of the previous year. The general equipment and working-conditions continue to maintain their former standard.

East Dip section: This partly exhausted pillared area gave further indications of heating, under conditions which necessitated the whole area being sealed off absolutely. In view of a contingency of this character ample provision was made for keeping an outbreak under control, the whole affected area being so arranged as to admit of being sealed by simply shutting two doors which were purposely left open for the purposes of free ventilation. These stoppings are now securely cast with Portland cement as an additional precaution against leakage, the escaped gases being swept directly into the main-return airway without annoying or interfering with any other part of the mine working. Suitable appliances are also securely built into the walls at regular intervals whereby the pent-up gases can be safely tested in the ordinary safety-lamp.

Mine Creek section: The gross output continues to be taken from this district, whilst the ordinary and progressive developments in connection with surface and underground operations are consistently maintained. In the main south heading district the aggregate drivings for the year comprise a total of 46 chains, intersecting coal of superior quality and hardness over an area extending to the Eastern boundary. No. 3 district west, employing twelve sets of miners, is showing very favourable promise, the coal being specially recommended for naval purposes; whilst No. 16 district pillars, receding from the eastern boundary, are being successfully removed, the hardness of seam and roof being favourable factors relative to safety and total extraction.

West section: In order to win the coal-seam and effect a direct connection between this section and the New Tunnel district, two crosscut headings were recently set off in a north-westerly course from a defined point in No. 6 winning heading at a distance of 26 chains from the Mine Creek haulage terminal. On completion of these drivings it is anticipated that a valuable and extensive addition to the present working-areas will be assured, and eventually supply a much-needed want towards maintaining the full capacity of the Big Brake haulage which connects with the loading-station on the Government Railway-line.

New Tunnel area: In continuation of my previous report, the extensive rock-drivings then in progress to win and exhaust the western division of the leasehold have reached the main coal-seam, and permanent connection has been made for ventilation, &c.; but, pending erection of the new hydraulic-brake installation, coal for commercial purposes was not run over the newly constructed endless-rope system until September last. The coal-seam is showing favourable promise as the drivings extend.

New works: Free drainage is now successfully completed, both from an engineering and drainage standpoint, while the connection effected from both sides reflects credit. Since holing, the usefulness of free drainage has been fully realised, and the cost of driving is already amply repaid, as the 6 ft. by 5 ft. water-channel was almost taxed to its full capacity owing to an excessive inflow of flood-water breaking through heavily fallen pillar and other weak ground.

At the power-station situate at the mine-mouth two air-compressors are newly installed, and the old vertical boilers formerly used are now replaced by one of the Babcock and Wilcox type, whilst at Mine Creek Station the power is unchanged. The electric-light installation now in use at the principal underground haulage terminals has only simplified traffic operations, and its general adoption is recommended. The screening plant was recently supplemented with two picking-belts which give fair results in cleaning and improving the quality of the coal. General repairs recently effected to enlarge and otherwise improve the main fan-drift increased the ventilation in the Mine Creek section alone from 70,000 to 100,000 cubic feet per minute—engine-speed unchanged. The provisions of the Coal-mines Act are strictly observed. Seven inspections were made, both sections of old workings being carefully examined with safety-lamp, and no indications of gas or heating found. No serious accidents reported. Temperatures are practically unchanged, the main return showing a constant 54°.

Denniston Colliery (owners, Westport Coal Company (Limited); J. Dixon, mining-manager).—This colliery raised, exclusively by single shift, the largest output yet recorded for any previous corresponding period, being an increase of 12,179 tons on the preceding year; whilst in point of production, development, and general equipment, the former standard of efficiency is well and consistently maintained.

Coalbrookdale Mine (19/12/1905): In making mention that the West Cascade section of working is approaching a geological limit (governed by a thinning of the coal-seam), it is also interesting to note that beyond the area of intervening barren ground, exploration has proved a coal-seam of equal quality and thickness extending westward, and including a considerable area of the Whareatea lease. Regarding the general working there is little of importance to note outside the ordinary routine of operations, while the removal of pillars continues to be very successfully effected, both with respect to the minimum of accidents and the high percentage of coal won.

Cascade dip has fully justified development, as the quality of and thickness seam—determined in the general progress of working—has exceeded any previous anticipations, whilst the preparatory work in grading and timbering the extension of main haulage-road is well advanced, and may be expected operative during the current year, drainage and ventilation being amply provided by adit on Cascade Creek.

Cascade East district of solid working is exhausted, and output wholly maintained by the removal of pillars; but, owing to the considerable thickness of very friable roof, the use of close and costly timbering is necessitated. Extra care is thus entailed to insure the maximum of safety, cost of production taking a secondary place in the working economies.

Munsie's section of solid working dipward is meanwhile abandoned in view of winning the coal-seam to better advantage and economy from the lower levels of the Cascade district. Consequently, the supply of coal won here is exclusively from the removal of pillars, which yield a high-class steaming-fuel.

Ironbridge Mine (20/12/1905): The Dundee dip section of solid working continues to maintain its former reputation as a first-class coal-seam, specially suited for steaming and general commercial purposes, excellence in quality and hardness showing no depreciation. Preparatory work is actively pushed in extending the main haulage, whilst rock-cutting has been a considerable item of cost in effecting uniformity of grade. Free drainage and mechanical ventilation are efficient and standard factors in the working economies of the mine.

Big Pillars includes two separate pillar districts, from which total extraction is maintained in a workmanlike manner, both with respect to economy and absolute immunity of serious accident, items of interest which command attention in the exhausting of these thick-seam areas.

Kiwi district: This newly developed district of solid working, situated between the north branch of Waimangaroa River and the eastern outcrop, gives very favourable promise as the working-face extends northward, the hardness of the coal-seam being a natural feature which commends its use for general purposes. The working-conditions are very satisfactory, while natural ventilation is well maintained through the outcrop-openings, frequently holed through to daylight.

Old shaft workings: After a lengthened period of active and persistent prospecting, by which series of faulted ground have been successfully intersected, the managementis confident that the continuation of the Dundee main seam is practically assured, and suggests an extensive area, the opening of which will be easily obtained from Dundee dip, and, according to indications afforded, will materially increase the life of the mine.

Deep Creek area: With the object of providing a more improved system of haulage and affording facilities whereby a large area of standing pillars can be more economically extracted, extension of a new haulage road is making satisfactory progress, but the bridging of the Waimangaroa River and Deep Creek will be works of considerable cost and magnitude. However, according to the prospects anticipated, a valuable yield of coal will be available on completion of these works, which are estimated to extend over eighteen months.

New works: As mentioned in previous report, the new 12 ft. diameter, steam-driven, double-inlet ventilating-fan of the Hayes type is now circulating an average air-current of 100,000 cubic feet per minute at 1 in. water-gauge, the maximum calculated capacity being considerably in excess of the quantity stated. Construction of the new storage-bins with a capacity of 2,000 tons is now nearing completion, together with the travelling picking-belt, viaducts, and tipping-platforms, which will be equipped directly on arrival of the necessary appliances. A more economical and comprehensive steam-generating battery was recently installed at the brake-head, comprising four Babcock and Wilcox boilers (aggregating 496-horse power) calculated to meet all present and anticipated requirements.

Shots fired during the year: Mr. Dixon kindly furnishes the following: According to the official record kept at the respective mines, there were 41,672 shots fired, which, when calculated on the gross tonnage raised, gives an average yield per shot of 6·44 tons; while the ratio of mis-shots was 0·78, or 1 in 360.

Prosecutions were *nil* at Denniston for the year 1905.

Throughout the whole system the working-conditions have been strictly observed in accordance with the requirements of the Coal-mines Act, while seven inspections were made during the year.

Temperatures in the main return-airways continue to maintain a constant 54°.

Coal Creek Coal-mine, Buller Road (George Walker, lessee).—During the first six months of the year coal was supplied to the Rocklands Dredging Company, but this company being now dissolved, and the dredge deeply silted up in the river-bed, the demand for coal ceased, and further mining was consequently abandoned. The rise level also collapsed to the surface by a run of sand during a heavy rainfall.

White Cliffs Coal-mine, Buller Road (Job Lines, lessee).—Work at this mine is still continued by one man, the demand being chiefly for dredging requirements on the Buller River, the steaming properties of the coal being fairly suitable for dredge-work. To effect ventilation as the workings proceed, an upper level was recently opened from the outcrop. Timbering is strictly attended to.

Flaxbush Coal-mine, Three Channel Flat (De Filippi, owner).—(17/10/1905): Coal is still mined for the Mokoia and Feddersen Dredges. Regarding quality of seam and method of working there is little to note, the opened ground being very securely timbered, while ventilation is well maintained by holings to the outcrop as the face is advanced.

Coal-mining in the Longford and Murchison districts is a matter for future enterprise,

Bourke's Creek Coal-mine (owners, Cairns and McLiver).—(11/12/1905): For reasons best known to the owners, coal-mining on this lease may be considered at a standstill, the remnants of some old outcrop pillars being the chief source of supply. In the early part of the year a drive was cut into a rising outcrop on the western side of the creek, but the coal (soft) so far won is practically valueless for household purposes.

Archer's Freehold, Capleston (F. W. Archer, owner).—(11/12/1905): Owing to a fall of roof which occurred on the rise-level pillar-working, coal for local demands has been chiefly taken from the lower level working. Regarding the upthrow fault mentioned in previous report, nothing further has been done to prove the extent of displacement, it being the intention of the owner to cut the fault on a lower level tunnel which is partly driven. Local demands are not pressing owing to the continued depression in the dredging industry.

Coghlan's Freehold, Capleston (J. Coghlan, owner).—(11/12/1905): In the rise mine from which the coal is trolleyed down a self-acting incline, one man finds employment, getting coal for dredging and general use in the district. The field is further opened by a low level and staging erected for screening appliances, but up to time of writing coal for market purposes is not yet produced. The coal in the face is a fair sample.

Murray Creek Coal-mine (J. Billett, owner).—(12/12/1905): Coal from this property continues to be supplied for steaming purposes, both at the Murray Creek Battery-works and the Energetic Mine, owned by the Consolidated Goldfields of New Zealand. In approaching the rising hill country faulting seems to exist, and, so far as development has extended, the probable continuation of the seam cannot be accurately determined. The leasehold shows a very good supply of coal eastward in open face.

Phœnix Coal-mine, Reefton (John Knight, owner).—(12/12/1905): The deep-level open-face coal located in the creek-bed has been carefully won, and a low-level drive commenced and securely timbered to win and open out the bottom section of coal-seam. However, success has not followed the venture, owing to an unknown and very intrusive faulting, the cutting of which has incurred considerable expenditure in rock-driving without showing any immediate indications of coal. Meanwhile local demands have been supplied from the Old Rise Mine (recently opened), the quality of coal continuing to show a fair sample, while ventilation is well maintained on the face through a newly cut rise connecting with the surface.

Lockington's Leasehold, Bourke's Creek, Reefton.—(11/11/1905): There has been little coal won here owing to the limited demand. Preparatory to winter trade a new screening plant has been erected, and connection effected by new tram-line. The owner having constructed an extensive sawmilling plant adjacent to the mine, it is his intention to utilise the small coal for steaming purposes.

Blackadder's Leasehold, Reefton Town Belt.—(12/12/1905): In consequence of a total collapse of the roof in No. 2 tunnel further coal-getting was abandoned, and a third tunnel commenced on a lower level of the coal-seam. Having driven this No. 3 tunnel, and securely timbered it a distance of 100 ft., operations were abandoned owing to a break of wet, sandy ground in the face. Ultimately the property was offered for sale without success.

Lankey's Creek Coal-mine, Reefton.—(12/12/1905): The demands on this small mine have shown a marked improvement, affording full employment to both partners. During the busy season work was continued on the single drive until further extension became impracticable; the attention of the party was then directed to opening a second tunnel from the outcrop, which is now progressing in good coal.

New Inkerman Mines (Limited), Reefton, continued to take coal for steaming purposes at their battery-works until operations ceased, and the property was sold to the Consolidated Goldfields of New Zealand (Limited), who have meantime abandoned all mining operations.

Devil's Creek Coal-mine, Reefton.—Since the present lessee reopened and securely timbered this drive, nothing further has been done. The seam is practically vertical, and the coal does not command a ready market notwithstanding the proximity of the mine to the town.

Progress New Coal-mine, Reefton.—(12/12/1905): Regarding the working of the mine, development is chiefly confined to the extension of the main level westward, and rising to the outcrop, ventilation being well maintained through the regular holdings. The coal is exclusively won for steaming purposes at the A and B shafts, Progress Mines.

Loughnan's Coal-mine, Reefton.—(12/12/1905): Slow but steady progress continues to be made. The output is very limited.

Waitahu Coal-mine, Reefton (J. Scarlett, lessee).—(11/12/1905): Operations here are continued by one man, who supplies about 30 cwt. of screened coal per day, the seam showing no improvement towards hardness, while the situation of the mine gives ample facility to deposit the small coal into the Waitahu River. In extending the low level, faulting of a very formidable character was recently met, which may account for the absence of coal, visible at the seat of fire on the adjoining property.

Burning Coal-seam, Boatman's.—During the many visits paid to this property indications of heating or smoke have been absolutely nil, even when water was not available, the water-supply being almost dependent on rainfall. Water-races are in good order.

Blackball Colliery (owners, Blackball Coal Company (Limited); Walter Leitch, mining-manager).—(8/12/1905): Owing to restricted demands on the colliery, operations have been strictly confined to single shift, with the exception of urgent development in the new dip district. The gross tonnage raised, 64,713 tons, was a decrease of 20,815 tons, as compared with the previous year. Output has continued to be supplied from the extraction of pillars in the original rise working, but at time of writing pillar-work is limited to a few hands in the eastern district, the western district having become exhausted and sealed off with an effective series of thoroughly built stoppings. Happily, ample provision was in readiness to employ all hands in the new dip section of solid working, the coal-seam maintaining favourable promise both in quality and hardness. Spontaneous ignition has not failed to be a continued source of heavy expenditure and anxiety as the working of the pillared areas receded homeward, notwithstanding the careful and prompt measures taken to insure safety, the greatest difficulty experienced being the sudden emission of fire bursting through the crushed and broken coal forming the sides and roof. In many instances the whole surroundings would be found in the morning enveloped in a mass of flame, when to all practical knowledge the stoppings were left perfectly secure at night. It is worthy of note that in fighting these fires freedom from serious accident has been a marked feature.

The New Tunnel district continues to be developed, the drainage and haulage levels having now attained a total length of 800 yards, of which the last 300 yards show a decided improvement in quality and hardness of seam. As previously mentioned, the natural level course suddenly dipped at a point 25 chains west from the bottom of the rock crosscut, when, after considerable prospecting to determine true level, a deviation of 40° riseward was unavoidable. Fortunately the deviation stated has not seriously affected the line of working, and although minor displacements have been occasionally met with, varying from a few inches to 9 ft., the set course has been maintained without further change.

The drainage-tunnel driven from the bed of Ford's Creek was successfully connected with the lowest level of No. 2 tunnel working, at a driven distance of 1,304 ft. Thus, free drainage is permanently affected over the whole opened areas, and all pumps withdrawn. Endless-rope haulage was installed during the Christmas holidays and since has worked satisfactorily, the plant being up to date in all details. Mechanical ventilation by Capell fan was also effected during the year, but owing to local circumstances directly connected with the character of the mine as regards liability to spontaneous fires it was found necessary to utilise the fan as a blower instead of an exhauster as is usual. This inverted action of the fan has tended not only to keep back the poisonous fumes, but enabled several serious fires to be dealt with, which under furnace or exhaust-fan ventilation would have been practically impossible. In fact, the life of the rise-workings has been prolonged by the utility of the fan under the altered conditions. The aerial tram-line was furnished with a new haulage-rope, measuring $\frac{3}{4}$ in. diameter by 6·5 miles in length, and weighing about 12·5 tons.

Engines, boilers, and aerial tram-line, &c., are all in good order and condition, whilst absolute freedom from serious accident may be regarded as a feature worth noting.

Strict observance under the Coal-mines Act is duly enforced. At the Warden's Court, Greymouth, legal proceedings were instituted by me on two counts affecting three persons employed at this colliery for breach of Special Rule No. 36 under the Coal-mines Act. Fines, £1, and £2 costs.

Tyneside Proprietary Company (R. Alison, mining-manager).—(7/12/1905): As the result of mining operations being chiefly confined to single shift during the year, employment at the mine gave a more regular and uniform average of time worked. The tonnage raised (44,047 tons) was an increase of 5,641 tons as against the preceding year. With regard to development, further extension of the main dip haulage-road has not been made (the face standing at 20 chains from the winding-shaft as previously reported), attention being more actively directed to push forward the eastern section of working, as this section of the lease comprises the most important and extensive area, the quality of seam showing a marked improvement as development in the bottom winning levels advances. In extending the east face riseward several heavy feeders of water were tapped, much to the annoyance of the management, as the pumps then in use were nearly taxed to their full capacity. However, to meet the present requirements in pumping, the erection of a new Hornsby boiler is actively pushed, and may shortly be expected operative. On completion of this additional steam-generator, it is anticipated the pumping-power will have a capacity equal to any probable increase. The roof in several places has for some time been somewhat changeable, necessitating the use of heavy timbering, and it may be stated that it was at these irregularities of the roof that the feeders occurred. Referring to the west side working there is little change to note, the output therefrom being confined to four pairs of miners, the coal continuing to maintain its previous good quality. The screening and sorting of the coal has received special attention by the addition of a travelling picking-belt, while the revolving nut-screening appliances have given satisfactory results. This class of (nut) fuel for steaming and household purposes is largely in demand, the nuts being considered more free from earthy and pyritical impurities than the ordinary screened coal. Additional storage capacity is also under construction. The ventilating-fan, now actuated by a more powerful steam-engine, is capable of maintaining very effective results, whilst a section of the main intake (east), which intersects a large fault line, has been much enlarged. No serious accidents reported. Reports to date; and seven inspections made.

Brunner Mine (R. Alison, mining-manager).—(7/12/1905): Apart from the ordinary routine of work necessary to clear out, timber, and relay the old disused headings and levels to effect total extraction of the standing-pillar areas, there is nothing to note of any particular importance. It is nevertheless a fact, which seriously concerns the residential interests of this old-established mining district,

that the rapid exhaustion of this mine must in the near future eventually terminate its working-life, notwithstanding the care taken to win every ton of coal and fireclay available. In my previous report mention was made that the Brunner Mine was likely to take a place in the present issue as a going concern; but, in reference to the life of the mine during the forthcoming year, conditions are more doubtful. Unless the surface subsidence as affecting the heavy overlying terrace-lands admits the further removal of pillars with safety, the date of absolute abandonment cannot be definitely estimated. However, with the precautionary measures observed in working the few remaining pillars in a regular and systematic manner, subsidence of the elevated terraces has shown no marked features of danger during the year, although some of the pillars taken out consisted of coal of fair thickness. The manufacture of firebrick and coke continues to give full employment, and it may be assumed that with the large accumulations of fireclay in stock, the Brunner firebrick will yet take a leading place for some considerable time to come. The workmen continue to maintain their monthly examinations of Brunner and Tyneside Mines, while the reports recorded at the colliery-office may be justly regarded as creditable records. There were no serious accidents reported; all reports under the Coal-mines Act are strictly kept to date. Seven inspections made.

Point Elizabeth Colliery (New Zealand State Coal-mine; James Bishop, manager).—Details of the working of this State coal-mine are published in Parliamentary Paper C.–3B.

Nine-mile Beach.—John Kane of Greymouth continues to take coal from the area held under license (previously cancelled) on the ocean side of Point Elizabeth property.

Coal-miners' Accident Relief Fund, administered under the Coal-mines Act.

Where the funds are managed under medical associations the following table shows the contributions paid by the various coal companies, the balances credited at the Post-Office Savings-Bank, the amounts expended on accident allowance, and the increase on fund for the year 1905:—

Name of Colliery.	Contributions.	Balance in Savings-Bank.	Accident Allowance.	Increase.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Denniston	576 9 5	4,798 9 11	150 11 6	508 18 11
Millerton	513 3 4	1,973 3 9	363 15 0	205 8 4
Blackball	137 12 11	831 1 2	84 5 5	76 17 3
Brunner and Tyneside	163 17 11	937 16 4	96 7 1	92 8 7
Interest	244 14 10	..	..	..
Totals	1,635 18 5	8,540 11 2	694 19 0	883 13 1

The contributions paid by the colliery-owners to the Coal-miners' Accident Relief Fund, under the Public Trust Account, was £416 17s. 7d., while payments made towards accident-relief amounted to £241 5s. 2d., leaving a balance of £175 12s. 5d.

Accidents.

Of the number of accidents reported as coming within the meaning of section 60 of "The Coal-mines Act, 1905," two were fatal, and ten not serious. Of the persons killed, one was underground, and the other a (youth) surface hand. In terms of Regulation 11, paragraph (*b*), administered under "The Coal-mines Act, 1905," the sum of £25 was paid to the widow of the deceased Walter Meadowcroft, Blackball, death being certified as the result of a strain while lifting the end of an ordinary 7 ft. prop. Such an occurrence cannot be regarded as an accident under the Act.

Fatal.

Denniston Colliery.—(12/1/1905): John Champion (youth), screen-worker, killed with railway-wagon at Denniston brake-head.

Puponga Colliery.—(26/1/1905): James Muirhead, underviewer, killed with runaway loaded trucks on dip haulage-road, caused by breakage of coupling-chain.

Non-fatal.

Puponga Colliery.—(25/2/1905): John Keenan, deputy, sustained compound fracture of leg, caused by fall of stone while setting timber.

Denniston Colliery.—(6/6/1905): A. Croft, coal-cutting-machine attendant, had small bone of leg broken, caused by fall of stone on main road while shifting machine.

Puponga Colliery.—(12/6/1905): Frank Lomas, trucker, sustained scalp wound and otherwise bruised, caused by runaway empty truck.

Denniston Colliery.—(31/7/1905): James O'Gorman, roadsman, had leg broken, caused by a rail slipping off an empty iron pit-truck.

Brunner Colliery.—(11/8/1905): John Hazeldine, collier, was injured on head and face by a 6 ft. rail, slipping in front of full truck.

Denniston Colliery.—(19/10/1905): James Dowse, coal-cutting-machine attendant, had back injured by piece of coal breaking over sprag.

Denniston Colliery.—(18/12/1905:) George Smith, deputy, had hip dislocated and was bruised generally, caused by fall of top coal in face.

Denniston Colliery.—(18/12/1905): James Duguid, miner, had leg broken, caused by same fall of coal as injured Smith.

Point Elizabeth Colliery.—(16/6/1905): James Connolly, miner, had leg and ribs broken and injury to back, caused by fall of coal in the face.

Point Elizabeth Colliery.—(13/10/1905): Michael Connolly, trucker, was bruised by runaway empty truck.

GENERAL REMARKS.

The output of coal for the year ending the 31st December, 1905, was 856,227 tons, which is an increase of 19,277 tons as compared with the previous year.

In continuation of my previous remarks, mechanical ventilation is now efficiently installed over the whole West Coast colliery system.

New Leases.—The New Stockton Coal Company, Westport, is making satisfactory progress in connection with the initiatory development in setting out rock and coal drivings and other important surface works. In further addition to the working and projected properties, the coal-bearing area locally known as Cooke's lease was recently granted to a British syndicate. The coal lease granted on the Paparoa Ranges, Blackball, is now to be developed by a limited liability company.

Fleming's Lease, Stillwater.—Driving has been continued for a distance of 600 ft., intersecting a series of marine formation, which, so far developed, gives very unfavourable indications of coal-bearing strata.

Drainage.—The deep-level rock adits at Millerton and Blackball are now completed and operative. Completion of these drivings effects free drainage over the whole working-areas.

FOREIGN TRADE.

Westport Coal Company.—The total tonnage shipped directly from Westport to ports outside the colony during the year 1905 was 34,769 tons, this being a decrease of 9,550 tons as compared with the year 1904, and in comparison with the year 1903, a decrease of 19,047 tons.

I have, &c.,
R. TENNENT,
Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

No. 4.

Mr. E. R. GREEN, Inspector of Mines, Dunedin, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Office of Inspector of Mines (Southern District), Dunedin, 30th March, 1906.

In accordance with the requirements of section 75 of "The Coal-mines Act, 1905," I have the honour to submit the following report on the coal-mines in the Southern District for the year ending 31st December, 1905:—

CANTERBURY.

Springfield Colliery, Springfield (J. Taylor, permit).—(26/4/1905): During the month of February last the district was visited by heavy rains which so increased the drainage of the pit that the pump broke down under the extra strain, and being unable to overcome the inflow, the water rose in the workings, which collapsed and were abandoned. The coal-seam had been practically exhausted in the shaft area, and fireclay had latterly been the principal production. A new drive from the surface is being put in for fireclay for pottery-works, also to prospect for an upper seam of coal supposed to exist in the direction being driven.

Victoria Mine, Springfield (W. J. Cloudesley, owner).—(26/4/05): Behind the fault the coal became soft and inferior. Hard coal pillars were then withdrawn to the outcrop, and the ground behind is falling in.

Dalethorpe Coal-mine, Springfield (G. Rutherford, owner; P. Campbell, manager).—Coal mined for station purposes and local requirements.

Homebush Colliery, Glentunnel (J. C. Campbell, manager; Dean's trustees, owners).—(26/4/1905): Dip section: Coal thinning and stone making in south-going places. Ventilation unsatisfactory, partly owing to airways through stentons requiring attention from deputies, also promiscuous shot-firing causing pollution of air. On examination, the upcast airshaft drift was found partially choked by gravel. These matters received immediate attention. It is, however, apparent that natural ventilation is inadequate for the extent of workings, which now require to be more effectively ventilated. In drum heading section work still confined to extraction of pillars. Timber ample; ventilation fair.

(13/12/1905): Dip section: False roof above coal troublesome, necessitating props to faces, and sets where required. Compressed powder now in use for blasting giving satisfaction. Gauze shields in use in proud and flying coal for protection to miners' eyes. Timber plentiful and freely used; a large stock on colliery premises. All shots are now fired within twenty minutes from "knock-off," to the safety of the men and the purification of the air during working-hours. The new uprise shaft and second outlet with furnace and chimney on surface will enable dip workings being ventilated independently from rise section. Drum heading section to rise: Pillars continue to furnish a fair proportion of the total output. It is estimated that over 90 per cent. of coal available has been won from the pillared area.

The mine-manager reports that two old shafts on the Whitecliffs roadside have been filled up to the surface. Rules posted; plan kept; and report-books to date. 480 tons of fireclay were dug for manufacture of sanitary-ware and fire-clay goods in pottery-works on the property. Mr. Deans recently sent a working sample of the clay to a Liverpool firm who reported "that it was as good a clay for taking salt-glaze as they had ever used, and they only wished that they had plenty of such clay on their own premises."

St. Helen's Colliery, Whitecliffs (H. Levick, permit).—(27/4/1905: A fire had broken out in the gob, and the balance of in-bye pillars had to be left. Coal to the rise in Nos. 4 and 5 tunnel sections now practically exhausted to water-level. By far the larger proportion of output for past few years has been recovered from pillars left by former workers twenty or more years ago. Mr. Levick is to be commended for the thorough and safe manner in which, under difficulties, he has withdrawn some thousands of tons of coal from ground which had been abandoned as worked out so far as was considered practicable. No well-sustained effort has, however, been made to win coal below water-free level, but to any one willing to incur the necessary expense there is apparently nothing to prevent setting away to the dip at several convenient points.

Craigieburn Coal-mine, West Coast Road (D. Manson).—Coal mined for station purposes and local requirements.

Snowdon Coal-mine, Rakaia Gorge (George Gerard).—Coal mined for station purposes and local requirements.

W. McClimont's Area (200 *acres*), *Mount Somers* (W. McClimont, lessee).—(14/12/1905): This lease was granted in the beginning of the year, but no effort has been made to work the coal-seam for an output.

Mount Somers Coal Company, Mount Somers (M. Neilson, mine-manager; W. Allan, secretary, Ashburton).—(14/12/1905): Work extending in direction of dip, free drainage being effected by a low-level adit. Roof being good, very little timber is required. Ventilation good; plan kept; rules posted; and report-book to date.

Woolshed Creek Colliery, Mount Somers (W. T. Doak, secretary; Thomas Harris, permit).—(14/12/1905): Mine workings and roadways now in good order. A new drive to solid coal to rise will cut off the present drawing-road through the old workings. The question of opening up the dip section is still under consideration.

Taylor's Stream Lime and Coal Company, Alford Forest District (Andrew MacFarlane, lessee).—(13/12/1905): Area, 60 acres. The limestone on the ground is, when burnt, said to be excellent for agricultural purposes. Prospecting in the coal-measures was carried on for some considerable time without success, only thin unworkable seams of coal having been found. The lessee intends to give the area a further test for workable coal-seams.

Christchurch Lime Company (*late Springburn Lime and Coal Company*), *Staveley* (R. L. Scott, Christchurch, secretary; Andrew Thompson, mine-manager).—(15/12/1905): These works, formerly conducted under the title of the "Springburn Lime and Coal Company," were closed down during the year 1904. Operations have lately been resumed, and three men were making preparations for lime-burning at the time of my visit. There are several seams of coal in the property, but on this date no work was being done in connection therewith.

Albury Coal-mine, Chamberlain Settlement, Albury (J. M. Willetts).—(5/11/1905): Preparations being made for winning coal to the dip of main level. New airshaft acting well and ventilation good.

Waihao Forks Coal-mine, Waihao Forks (D. McPherson, owner; J. Preece, Christchurch, lessee; George Lomas, permit).—(14/12/1905): An area of 80 acres has been leased, but operations are continued in the old mine, drawing pillars and taking down head coal. The smallness of the seam and its distance from the railway have militated greatly against its successful working.

Waihao Coal-mine, Waihao Forks (W. Grant, Timaru, owner).—(14/12/1905): This mine has not been reopened since the fire in early part of year 1904.

Elephant Hill, Waihao Downs (Lewis Mathias, owner).—Coal mined for station and local requirements.

NORTH OTAGO.

Dalgety Coal-pit, Hakataramea (New Zealand and Australian Land Company, owners; J. Drysdale, manager).—The coal is mined for station purposes and local requirements.

Wharekuri Coal-pit, Wharekuri (A. Shanks).—(1/11/05): Openings in connection with worked portions of seam now blocked off. A new level has been driven in the sand formation, parallel to the seam for a distance of 100 yards to reach a point ahead of the old workings. The seam was broken into and driven along narrow for a distance of 80 yards when softer coal was struck. The lessee then decided to return with the head and side coal working it out in sections, each section to be blocked off to minimise risk of fires. Return air is conducted from the working-face to the upcast shaft by means of an air-box, which seems to answer the purpose. Work is at present being carried on in Matheson's Freehold.

Cairn's Coal Area, Awakino, Kurow (W. B. Cairns, licensee).—(2/11/05): A covered-in box drain was brought up from the creek and a drive 30 ft. in length was driven, at which point operations have apparently been suspended for a considerable period.

Phillip's Coal-mine, Awakino, Kurow (J. Sutherland, manager; J. Phillips, owner.)—(2/11/05): This mine, which was closed about the year 1896, was reopened in March, 1905. A dip drive was driven to the seam, and the coal is now being won from a level. The hard coal in the seam varies from 6 ft. to 10 ft. in width. I cautioned both the owner and manager against making the level too wide and high during inward work. Several sets of timber were required in the level. All dross is being left in the mine. A new level drive is being put into the seam for easy haulage, and when this reaches completion the dross is to be drawn. Should operations be continued on this property the seam will require to be tapped at a lower level in the near future.

Awakino Coal-mine, Kurow (George Orr, owner; J. Sutherland, manager).—(2/11/05): Pumping appliances driven by a portable engine were introduced and the inclined dip drive was continued until at a depth of 20 ft. the drainage became too heavy. Also, owing to the seam becoming narrow and the sides weak, necessitating use of strong timber, the work became too expensive and was discontinued in March, 1905.

Otiake Coal-mine, Otiake (J. Cunningham).—Nothing was done at this mine during the year. Mr. Cunningham reports that the mine is now abandoned.

St. Andrew's Colliery, Papakaio (Thomas Nimmo, owner and manager).—(31/10/05): Pillars and head coal continue to be withdrawn in a safe manner. Adequate supply of timber on hand and in use for safety of the workmen. Ventilation good; rules posted; plan kept; and report-book to date.

Prince Alfred Colliery, Papakaio (G. H. Willetts, permit; Mrs. J. Willetts, owner).—(31/10/05): Present work being carried on along the boundary of old worked ground to eastward, and to the westward inferior coal is encountered, causing restriction of the workings to some extent. Pillars and head coal are being extracted. A good supply of timber on hand for use as required. Ventilation good; plan kept; report-book to date.

Ngapara Colliery, Ngapara (William Nimmo, owner and manager).—(31/10/05): Operations in this mine continue to be well conducted; roadways and working-places in good order. Ventilation good; rules posted; plan kept; report-book to date.

Kartigi Coal-mine, Kartigi (C. E. Twining).—Mr. Twining reports that he had ceased prospecting operations on Section 11, Block XI, Moeraki district. Abandoned.

Allandale Colliery, Shag Point (C. H. Westfield, mine-manager; W. Everest, secretary, Shag Point).—(5/10/1905): Air volume at intake 10,000 cubic feet per minute, with fan at 90 revolutions per minute. The general dip of all seams in this mine is periclinal. North section (No. 1 seam): Extension of levels is being continued with a view to future development. Dip section: No. 1 and 2 seams have come together at face making 11 ft. of coal-thickness, roof tender and hard to keep, necessitating liberal use of timber all over the section. South-going places thinning somewhat, but northward the seam continues to improve. Long Jig section: Pillars are now practically exhausted. This district has been capably worked for a number of years, and a high percentage of the coal seam won without serious accident. Ventilation at several of the far-in working-faces not quite up to the mark. I arranged with the manager that the fan was to be run at a minimum speed of 100 revolutions per minute, to be increased as became necessary when certain well-known unfavourable atmospheric conditions occurred. Mine and workings generally in good order; an adequate supply of timber kept on hand and used freely. General and special rules posted; report-books and plan to date. Three visits of inspection were made during the year. The electrical generating plant has been satisfactorily installed. Power is transmitted to the fan on the surface and to the main pump below, also for dip haulage and main-road haulage underground, and the haulage-road is lighted by electric light.

Shag Point Colliery, Shag Point (William Hunt, permit; late E. Brooke).—(5/10/1905): Work is now confined to drawing the pillars left in by the former lessee, Mr. Brooke.

SOUTH OTAGO.

Fernhill Coal Company, Abbotsford (James Gray, manager and owner).—(10/2/1905): Fire-stoppings on the line of old workings are maintained in good order. Advancing places are being driven narrow underneath the Silverstream Water-race and immediate neighbourhood. There is evidence of movement on a fault-line in several of the places as though further displacement were taking place. A very fine deposit of building-sand, which is worked for use in Dunedin and surrounding districts, occurs in this property.

Freeman's Coal Company, Abbotsford (R. Hill, mine-manager).—(10/2/1905): All plant is now removed to the new drive at Fernhill Railway-yard where coal output is delivered into railway-trucks, and the surface tramway for haulage to siding on main south line of railway is now discontinued. Air satisfactory, and working-places in good order. I observed several places where faults or "lipes" in the roof crossed roadways. At my request the manager promised to set timber to the roof at these places for protection and safety of workmen. (5/12/1905): Air at intake 12,187·5 cubic feet per minute. Working-places clean and generally well ventilated; the tendency, however, exists of allowing bords to be overdriven before connecting for air-circulation. Dip places driven narrow owing to proud nature of roof, which will not stand bord width. Numerous thread-faults are also troublesome.

Walton Park Colliery, Walton Park (abandoned).—(18/10/1905): At the request of the District Railway Engineer I examined the surface "plump" on the Saddle Hill branch line of railway. According to the plans of the colliery the plump appears to be on a siding off the underground haulage-road where the roadway would no doubt be wide, and roof having fallen had reached the surface. By attention to depressions and filling of material, solidity will gradually be restored. The surface fires, referred to in my last annual report, are gradually waning and dying out. The only work now being done on the property is production of a fine quality of building-sand, which outcrops in the measures overlying the coal-seams.

Jubilee Colliery, Saddle Hill (Peter Campbell, mine-manager; Louden and Howorth, owners).—(29/6/1905): Roadways and working-places in good order, and ventilation satisfactory. The coal is naturally strong, and working-places are driven wide and high with safety, a minimum quantity of timber being necessary for securing the workmen from accident; falls from roof or side being of rare occurrence. (18/10/1905): Ventilation decidedly weak, and air consequently dull at a number of the working-faces, aggravated by shot-firing, which had occurred prior to my visit, in apparent disregard of the manager's notification posted in the mine that shooting was only allowed at "knock-off" each day. I also found that proper canisters were not in use for safe carriage of compressed powder, a source of danger, as naked lights are in use in the mine. (20/12/1905): On this occasion I found the ventilation good, blasting prohibited except at end of day's work, and proper powder-canisters are in course of construction. A new upcast air-shaft being sunk to the rise of the workings will solve the ventilation problem.

Burnweil Colliery, Saddle Hill (Adam Harris, owner and manager).—(17/2/1905): This visit was paid by request of Mr. Harris, who reported an accumulation of water in his mine as being likely to endanger his neighbours, Messrs. Christie Bros., whose workings were advancing in the direction of Mr. Harris's property. I examined both mines and conferred with Messrs. Christie and Harris, who were very reasonable in the matter, the consequence being that an ample barrier of solid coal is being left for protection of workmen and safety of property from water and fire. Some trouble is being experienced with the old fire, but a double row of stoppings is keeping it in check. Accumulation of water in dip is softening the bottom, and pillars are consequently sinking to a considerable extent, the effect being visible on the surface.

Glenochiel Colliery, Saddle Hill (A. Harris, owner and manager; late D. Bryce).—(20/12/1905): Very little work has been done here during the year. Mr. Bryce notified me, under date the 4th October, that he had disposed of his interest in the property to Mr. A. Harris, of the Burnweil Colliery. Mr. Harris is engaged driving a tunnel in this property to effect a convenient inlet to the Burnweil portion of the seam.

Saddle Hill No. 1 Colliery, Saddle Hill (Christie Bros., owners; W. W. Ogilvie, manager).—(17/2/1905): I examined the section of work known as McIntyre's, also the westerly workings advancing in the direction of Harris's Burnweil Colliery. The further places showed signs of dampness, also several small streams of water trickling from the faces. The manager stated that two months ago these faces were dry, and added that they were still one chain from Harris's boundary, which the plan showed they were. (20/12/1905): McIntyre's area now driven to boundary may come back on splitting pillars. Water from Harris's workings percolating freely through joints of coal, but no apprehension need be felt, as in addition to the safety barrier it has been observed that water in Harris's mine rises and falls in sympathy with Christie's. Principal work comprises dropping head-coal and splitting pillars in rise-workings. Ventilation fair. Mr. Christie proposes to proceed with erection of brick furnace to upcast shaft. Plan and report-book to date.

Saddle Hill No. 2 Colliery, Saddle Hill (Christie Bros., owners; James C. Christie, manager).—(29/6/1905): Operations confined to extraction of pillars to boundary, and robbing of roof in isolated sections as prepared beforehand; a row of stoppings is inserted as each section becomes exhausted in order to retain black damp and minimise risk of fire from spontaneous ignition. Roadways and working-places in good order, and ventilation good. (18/10/1905): Seam 25 ft. in thickness, of which it is estimated some 80 per cent. is being recovered. The roof behind is settling nicely, and timber is used as required for protection of the men. Air warm in far-in pillar-places, and the current generally was not up to the usual mark. (20/12/1905): I found good ventilation throughout the mine, pillaring and robbing being successfully conducted as heretofore. Rules posted; plan kept; and report-book to date.

Mosgiel Colliery, Mosgiel (Orr and party, late Sneddon Bros.; Hugh Orr, manager).—(29/6/1905): On this date there was no work, and gates were locked. The mine, however, is being worked regularly. (21/12/1905): New dip, turned away to southward of old workings, is 9 chains to face where an upthrow fault of 12 ft. was struck. Air dull at faces of north and south levels, stentons for air-circulation being required; otherwise workings all right. Seam 10 ft. to 14 ft. in thickness, of which about 7 ft. is being worked.

Lauriston Colliery, Duncan Settlement, Brighton Road (J. R. Walker, owner and manager).—(9/2/1905): Coal now being mainly obtained from the western side of the mine. Roof good. Air-shaft being cleaned out and repaired.

McColl's Coal-pit, Duncan Settlement, Brighton (D. L. McColl, permit).—(9/2/05): The new low-level tunnel is now 100 ft. to face, well timbered; will shortly intercept the coal-seam and provide free drainage.

Drummuir Coal-pit, Brighton.—Mr. Sneddon has sold this pit to Mr. Louden, of Brighton. A small quantity of coal mined for local use.

Fairbairn's Coal-mine, Taieri Mouth (R. Fairbairn, owner).—(14/2/1905): The coal is strong and the drive continues in fair order and, not being driven too wide, is standing well. A slip at mine mouth is being removed and new timber will render the opening safe again.

Bruce Coal-mine, Milton (Anthony Young).—(22/5/1905): Fire still burning at the outcrop away from the working-face. There was no work on this date. The property is under offer to the Lovell's Flat Coal Company. (26/10/1905): Owing to failing health Mr. Young is retiring after many years of active work coal-mining in this and the Home-country.

Reed's Coal-mine, Milton.—(22/5/1905): Mr. Anthony Young has one man engaged getting coal from this area, but on this date the mine-entrance gate was locked, and no one was to be seen about the works.

Real Mackay Colliery, Milton (Lovell's Flat Coal Company, owners; James Carruthers, mine-manager).—(22/5/1905): The Lovell's Flat Coal Company having made terms with Mr. J. McKay, the owner of the land, prospecting and driving is being conducted at the old open-face workings. A branch line is being laid up the gully to connect the mine with the Fortification Branch Railway line to Milton. (26/10/1905): The Real Mackay Mine, having lain dormant for some years, has recently been reopened by this company. Parallel levels are being driven south-easterly and connected for air. Dip of seam apparently south-westerly, and the workings are being opened up to suit. Old workings to the rise—of which no plan is available—have interfered with development, but the new level faces now appear to be ahead of the waste. Prospecting operations easterly are being undertaken, an area of about 10 acres of coal-bearing land having been proved by boring. The owners have acquired a lease over an area of Crown lands latterly held and worked by Mr. Anthony Young. Branch line completed and loading-bank approaching completion.

J. W. Thomas's Area, Akatore, Milton (Lignite License).—(22/5/1905): Although the licensee has worked industriously on the area, he has so far been unable to find a seam of coal of workable size.

Strip-and-at-it Coal-pit, Milton.—A small quantity of coal being mined for local use.

Fortification Colliery, Milton (J. Frame, mine-manager; Bruce Railway and Coal Company, lessees).—(22/5/1905): Pillars are still being withdrawn from this mine, which is rapidly approaching exhaustion. (26/10/1905): The mines are now abandoned, plant drawn, and former openings filled up and closed. The branch line of railway with sidings and loading-bank are now being utilised by the Bruce Railway and Coal Company.

Glenledi Coal-mine, Milton (N. McGilp, owner; Brown and Robertson, lessees).—(22/5/1905): Seam 20 ft. in thickness, of which 10 ft. is worked by bords 12 ft. in width, thus leaving a good coal roof. Air-shaft required for ventilation. (26/10/1905): Mr. Brown informed me that he and his partner had decided to determine the lease, as they found themselves unable to earn a profit on the royalty basis of 4s. 6d. per ton charged by the landlord, N. McGilp.

The Bruce Railway and Coal Company, Milton (J. Frame, mine-manager; John J. Lane, secretary, Milton).—(22/5/1905): An area lying to southward of Fortification Coal-mines and on opposite side of Tokomairiro River had been extensively prospected by boring. The new mine is now driven 120 ft. in strong workable coal, the seam here having been proved 16 ft. in thickness by one of the bores. Good timber is being used in the drive. A second outlet and ventilating-shaft is being provided. A gang of men are employed laying a narrow-gauge tram-line 30½ chains in length, including a bridge across the Tokomairiro River to connect with the Fortification Railway, and utilise loading-bank and screens of the old Fortification Mine. From the mine to the river there will be a self-acting incline 15 chains in length. (26/10/1905): Coal-seam interspersed with "duff," having a close resemblance to "doughboy" of another place. The adit level has been driven to the rise of the seam off which headings are driven to rise and places to dip until roofed. Now that the lay of the field is better known, the intention is to drive a lower inlet to the seam, which will be water-free and command a fairly large area to the rise. Dip of seam, S. 85° E., 6 ft. to the chain.

Adam's Flat Coal-mine, Adam's Flat (J. Reid, owner).—Opencast pit for supply of local requirements.

Paskell's Coal-mine, Adam's Flat (J. Paskell, owner).—Still nothing doing here.

Lovell's Flat Colliery, Lovell's Flat (J. R. Wilson, general manager; James Carruthers, mine-manager).—(13/4/1905): Extraction of pillars homeward continues apace; a safety-ring (or shaft-pillar) of 50 yards radius around pit-bottom is being observed. Timber is used at working-faces to support roof, which, however, does not fall independently, there being a general crush or creep all over the workings; bottom rising and pillars sinking gradually. The dip will soon be closed, and roof and pavement meet. Air rather warm in several places. (26/6/1905): Operations are now confined to drawing remaining pillars from south heading and main south level. Ventilation fair. (22/8/1905):

Coal-bearing area having been exhausted, the plant was drawn, and the colliery is now closed down. The shafts are well covered over and fenced around. I duly received notice of the abandonment of the colliery under section 57 of "The Coal-mines Act, 1891." The greater part of the surface plant has been removed to the recently acquired property known as the Real Mackay Coal-mine at Akatore, Milton district, Tokomairiro.

Wallsend Coal-mine, Lovell's Flat (R. Hewitson).—An opencast pit. Output mainly used for supply of local requirements.

Benhar Coal-mine, Stirling (P. McSkimming and Sons, owners; J. McLeod, permit).—(28/6/05): The south-eastern section of the mine collapsed owing to the bottom heaving and coal working up to a "thread" fault which traverses the seam. The workings are now confined to the north-west section of the mine, in which the roof is sound and workings strong. (4/7/1905): The present haulage dip, having become affected by the "trouble," has been abandoned, and the No. 1, or old dip, has been reopened and put in working-order. This section of the mine is more free from faults, and is not affected by the movement. A good supply of timber is maintained and well used. Rules posted; plan kept; report-book to date.

Mount Wallace Coal-mine, Stirling (James Walls, lessee; A. H. Anderson, owner).—(28/6/1905): This mine is situated on A. H. Anderson's freehold property. The main dip is now down 220 ft. in strong coal, and the necessity for a pumping plant is being felt. The mine is in good order. Ventilation good. Access to this pit by road is difficult, and hinders extensive development of the property.

Taratu Railway and Coal Company: Taratu Colliery, Kaitangata (Thomas Shore, mine-manager; George R. Cheeseman, general manager).—(11/1/1905): The extraordinary and unusual amount of robbing of roof and pillars to which this new mine had been subjected resulted in the practical loss of that portion of the field as a convenient inlet to the coal-deposit lying to the south-westward. Heavy falls occurred in the workings, and involved the main level, which had originally been driven too wide and high and the pillars left too small for security, so that the whole of the area became lost. A new mine is started to the eastward of present opening. (27/10/1905): The late mine, having exhibited symptoms of taking fire, has been blocked off. The new mine is driven eastward, and a level tramway therefrom laid to the screens and loading-bank. Seam 15 ft., lying practically level; roof good in coal, and very little timber required. Proper canisters in use for carriage of explosive (gelignite). Ventilation satisfactory. Boring operations for prospecting purposes are being conducted by Mr. Osborne, the well-known Christchurch borer.

Kaitangata Colliery, Kaitangata (New Zealand Coal and Oil Company, owners; O. G. Lockhart, secretary, Dunedin; R. S. Jordan, mine-manager).—(22/2/1905): Thomas Barclay appointed mine-manager. A prospecting borehole has been put down 60 ft. in the main stone-drive extension eastward, but was unsuccessful in finding a workable seam of coal. The main seam, south district, has been fully developed. An alteration of the direction of dip from westward to south-west to southerly (or periclinal as it appears to be), has latterly taken place in this section. Nos. 9 and 10 levels are driven east by north, and a large area of coal thereby proved. No. 10 is up to what may prove to be No. 7 fault, and is stopped at a blower giving off quantities of water with gas, which is generally accepted in this colliery as a good sign, and indicative of another seam of coal in the vicinity. Dip sections: Nos. 7, 15, and 16 dip districts are pillared out and finished, and blocked off with fire-stoppings. No. 12 dip pillars are also extracted up to No. 5 landing, above which the few remaining pillars are being rapidly exhausted. No. 17 dip coal-seam thinning to southward, and now coming back on the pillars. New dips are Nos. 18 and 19, from main south level, main seam. A fatality occurred in new seam on the 2nd February, 1905, Allan McKinnie, miner, being instantaneously killed by a fall of roof and side in his working-place, caused by an exceptionally heavy "nug" or bump from the solid—a pure accident. A slight ignition of gas occurred on the 23rd September, 1905, in No. 2 heading, main seam. The district had been worked out and stopped off; the fire-stopping at No. 3 bord had sagged a little, and fire was coming out. A party of officials were effecting repairs when the ignition occurred, and two of the men were slightly burned. There was no explosion. It appeared that there had been an atmospheric depression (barometer 29·65), and consequent leakage from stoppings and strata, and the low percentage of gas present became ignited at the living fire at the stopping. Only safety-lamps were in use in this district. A large stock of pit timber is kept on hand, and an adequate supply distributed throughout the mine as required. The steam-winch at surface of upcast air-shaft is regularly tried and kept in good condition for working in the event of its being required. Strict attention is paid to examinations of the various working districts, and all reports of same are duly entered in the proper report-books, and attested by examiners. Gas in small quantities reported from time to time, an unusually large quantity, coming from the blower at No. 10 level, new seam, interfering somewhat with regularity of work in that section, is cleared by ventilation, and gradually draining off. Foot of McDougall's and drum headings regularly examined, and results of same duly reported. Up to about the month of June the general conditions of the mine workings, roadways, and airways might be said to have been more favourable than had been usual—in fact, better than they had been for some years previously. Unfortunately, this state has not been maintained; roadways, and especially return airways, have deteriorated, and the ventilation become depreciated to the extent of from 10,000 to 12,000 cubic feet per minute less than had been recorded at the commencement of the year. A matter of importance was the removal of the lamp-station notice from the cabin at No. 2 (where it had been fixed by the late Mr. Jordan) to in-bye at No. 14 crossing, thus allowing use of naked lights and consequently of tobacco-pipes, cigarettes, and matches on main haulage-roads and at entrance to all working sections. I strenuously opposed removal of the notice, which, however, was not restored until the end of the year. Complaints made on behalf of the men as to the lack of ventilation in No. 17 dip were investigated and sustained, improvements being immediately effected. Another complaint as to escape of smoke from brick arch stopping on main roadway at No. 7 crossing, causing pollution

of intake air, was remedied by the stopping being finally closed after repairs had been effected. About 350 safety-lamps are in daily use, and carefully registered, cleaned, and locked by the lamp-trimmer in the cabin at surface. A damaged safety-lamp returned to the cabin by a pony-driver had apparently been wilfully damaged, but the evidence obtainable was not strong enough to make a case of. Examinations are regularly made by the workmen's representatives, and copies of their reports are recorded in a book kept for the purpose in the office at the mine. Reports of examination and inspections by mine-manager, underviewers, deputies, firemen, engineer, and examiner of ropes and chains regularly recorded in proper books kept for the purpose. Copies of general and special rules posted, and plans to date. Ten visits of inspection were paid during the year.

Castle Hill Colliery, Kaitangata (New Zealand Coal and Oil Company, owners; W. Carson, mine-manager).—(23/2/1905): This visit was paid in connection with an accident the previous day, whereby Mr. R. S. Jordan, general mine-manager for the New Zealand Coal and Oil Company, became suffocated by smoke and heat while exploring the seat of an underground fire in the vicinity of the ventilating-furnace at Castle Hill Colliery. I reported on this accident fully to you under date 27th February, 1905. (19/4/1905): On the 15th instant an explosion of gas occurred in the furnace level caused by gas from a stopping which had been opened to allow of re-entry into No. 4 dip section. The manager had taken the precaution of having all the men out of the mine, there being only the officials engaged present when the stoppings were opened. The occasion was also well chosen, being Saturday afternoon, when all work was done except the special job in hand. An error of judgment had apparently been committed by opening the stoppings too wide and allowing an undue proportion of foul air from No. 4 section into the return airway, and passing same over the living fire at ventilating-furnace, and not utilising the dumb drift as might have been done. Work has mainly been confined to the extraction of pillars in main seam, and to crosscut workings in same section. The main stone-drive extension eastward is being slowly advanced. Generally, mine in good order and an adequate supply of timber kept in use. One place in the pillar-workings looked as though it was insufficiently timbered, but, on examination, the roof was found to be exceptionally hard and strong. Robert Donaldson, twenty, trucker, died on the 16th August, 1905, from concussion of brain due to injuries inflicted by a runaway box on a heading the previous day. It is difficult to understand how Donaldson became caught. He was supposed to keep his station at the foot of the heading, and, on hearing the runaway, one step in either direction would have taken him clear of the box. Five visits of inspection were made during the year.

Wangaroa Coal-mine, Kaitangata (Joseph Smith, lessee).—Coal mined as required for local consumption.

Mainholm Colliery, Conical Hills, Waipahi (W. Lischner).—(19/5/1905): Stripping 8 ft. to 10 ft. in depth, and kept well advanced ahead of working coal-face.

Central Otago.

W. J. Tonkin's Property, Ettrick.—Boring operations are being conducted to prospect for coal at Moa Flat. It is proposed to sink a shaft 50 ft. or more in depth to test the area.

Coal Creek Collieries, Coal Creek Flat, Roxburgh (R. Pilling, jun., secretary; J. Barber, mine-manager).—Leasehold mine.—(3/2/1905): Opencast pit in good order. (29/9/1905): One man stripping off overburden and two men getting coal. I instructed the manager to discontinue throwing the stripped material into the worked-out portion of the mine, owing to the liability to spontaneous ignition in proximity to the coal-seam.

Freehold Mine.—(29/9/1905): The main drive was driven 8 chains, where an upthrow fault was met, the coal driven through now being crushed. The places are driven 7 ft. wide and pillars 6 ft. square are left. The workings, roadways, and air-courses are in good order. Ventilation good; rules posted; plan kept; and report-book to date.

McPherson's Coal-pit, Coal Creek, Roxburgh (Mrs. M. McPherson, lessee; A. McPherson, manager).—(3/2/1905): This visit was paid in connection with a fatal accident on the 1st February, whereby William Williams, miner, was killed by a fall of coal from the face, where he was working temporarily. (Particulars of the accident on list appended.) I examined the pit, which was found in good order. (29/9/1905): Operations are now being carried on in the vicinity of the high face, and the coal is being taken out perpendicular with the overburden. Notice was subsequently served on the lessee under date the 4th October, requiring her to maintain the stripping at a depth of 10 ft. from the working coal-face. (21/10/1905): On revisiting the pit I found that the overburden was being kept stripped well back from the working-face.

Craig's Perseverance Coal-mine, Coal Creek Flat, Roxburgh (James Craig, lessee; W. Craig, permit).—(29/9/1905): Toward the end of last year a "weight" occurred over the north-western portion of the dip workings, causing the area to heat. Eight stoppings were then put in, and the area closed off. On this date a quantity of CO_2 was draining off, and I recommended the manager to double the stoppings and fill in with ashes, which was done. The working-faces were well ventilated. (21/10/1905): The stoppings were cooler than on the occasion of former visit. Although firedamp has not been detected, as a precautionary measure the mine is now examined with a safety-lamp prior to the men entering to work. Report-book to date; plan kept; and rules posted.

Progress Colliery (Gully Pit) Roxburgh (A. Edmeades, licensee).—Unless a pumping plant be erected, very little coal can be won under present conditions. The licensee announces his intention to abandon the area.

Perseverance Colliery, Alexandra (R. M. Finlay, lessee).—(7/3/1905): Hauling plant and pumping machinery have been removed. The mine-mouth and shaft are securely fenced. The lease has been duly cancelled and the area abandoned.

McQueenville Colliery, Alexandra (S. T. Lett, lessee; J. Hodson, mine-manager).—(9/2/1905): After the workings became flooded the rise pillars were drawn until (on this date) I found the men working in a section which had been robbed beyond the safe point, and the manager shifted them to another part of the mine. (7/3/1905): On visiting the mine this day I considered that it was unsafe to continue working any longer. The plant was drawn and the mine abandoned. Mr. Lett afterwards applied to the Warden for cancellation of his lease, and I recommended that the application be held over for twelve months and until the lessee had complied with the conditions of the lease requiring him to fill up shafts and plumps on the surface due to coal-mining operations.

Lett's New Mine, Gemmell's Gully, Alexandra (S. T. Lett, lessee).—(7/3/1905): Prospecting-drive: Coal-seam only 4 ft., and bad roof requiring close timbering. (16/4/1905): Drive now 7 chains to face. No improvement in coal-seam or roof. The crosscut, driven 3 chains, was also a failure. (13/7/1905): A downthrow fault 11 ft., strike north-west and south-east, had been encountered at the face, and, notwithstanding the close timbering in vogue on account of the heavy nature of the ground, a run of fine sand and water occurred at the face, and it is doubtful if the drive can be recovered. Coal-seam only 4 ft. in thickness, and indications not encouraging. (26/9/1905): Another attempt has been made to proceed with the drive, but was eventually given up as hopeless.

Alexandra Coal-mine, Alexandra (Mathias and Co., lessees; A. Hunter, manager).—(18/1/1905): The new dip has been driven through a section of old workings into the solid, the intention being to proceed as far as possible in that direction, and work homeward. The workings are in good order. (7/3/1905): Ventilation fair, and mine in good order; timber used where required. (9/5/1905): Ventilation inadequate at working-faces. The manager promised to pay closer attention to brattice and stentons for air-circulation. Dip face is now at 14 chains from the entrance. All places are driven narrow—not more than 6 ft. in width—owing to roof being tender and inclined to cut up, as it undoubtedly would if the places were taken any wider; timber would not hold them. (26/9/1905): Workings, roadways, and air-courses in good condition; air good. Although firedamp has not been reported, daily inspections are made with safety-lamp, and report duly entered in report-book. Plan kept; rules posted; and report-book to date.

Undaunted Coal-mine, Alexandra (Mathias and Co., late D. H. Mathias).—This area is now included in lease held by Mathias and Co., under the name or title of "Alexandra Coal-mine Company."

Alexandra Coal Company, Alexandra (James Pollock, mine-manager; L. Ryan, secretary).—(18/1/1905): The workings are all in good order. Erection of wooden air-stoppings down the main dip is being continued. (9/2/1905): Workings in good order throughout, and ventilation good. (13/4/1905): An inrush of water occurred on the 8th instant from a soft wet back in second level above the riverward barrier. The water was in considerable quantity, but under low pressure. This inflow is coming from a "back" more open than any previously met with, and the coal being soft the usual process of plugging was ineffective. A dam is being built 20 ft. in length by the full size of the place and faced with brickwork, the length of the dam being necessary owing to the water being forced through the joints of soft coal on the sides of the place, to relieve which, pipes have been laid to the lodgment with a regulating valve so adjusted that the minimum quantity is delivered; nevertheless the volume of water now pumped has been doubled, and equals 180,000 gallons per twenty-four hours. Flank and roof boreholes are constantly kept well up in every place to the riverward area. (9/5/1905): From indications it is now quite evident that the riverward section of work is not to be trusted, as, although the roof boreholes are dry and there is no sign of the seam thinning in the roof, the occurrence of "wet backs" is more frequent and inflow therefrom is severely taxing the pumping plant. The water lodgment at pit-bottom is being extended in the easterly section of work. (25/9/1905): Workings, roadways, and airways in good order. Some improvement is desirable in ventilation of working-faces. There has latterly been a gradual reduction of the pumping-time to 112 hours per week, as it is now. A row of brick-and-cement watertight stoppings or dams is now being built, in order that the workings in the western district may be isolated in the event of a heavy inflow of water being encountered. The eastern district (upon which the shaft and plant are situated) will thus be safeguarded, and output could continue without interruption. In the riverward area the places have been driven not more than 8 ft. in width, with flank and roof boreholes in accordance with paragraph 36 of section 39 of "The Coal-mines Act, 1905," as though an accumulation of water had been anticipated, and roof boreholes at intervals of not more than 20 ft. had been maintained in every place. Although firedamp has not been detected, as a precaution safety-lamp examinations are made prior to the shift going to work. Requirements of the Act generally well observed. Rules posted; plan kept; and report-books to date.

Cambrian's Coal-pit, Cambrian's (Catherine Dungey, lessee; Caleb Dungey, manager).—(22/9/1905): The lessee is making application for renewal of the lease which recently expired. The coal is won by opencast working.

Welshman's Gully Coal-pit, Cambrian's (Ormond Hughes, lessee; late J. and R. McGuckin).—(22/9/1905): Opencast method of working. The overburden is sluiced off and hydraulically elevated out of the pit-bottom. The new proprietor is erecting a water-driven hoist, and otherwise endeavouring to improve the working-conditions of the pit.

Blackstone Hill Coal-pit, Blackstone Hill (James Armitage, lessee).—(2/8/1905): Opencast pit. The men were engaged stripping and removing overburden at the time of inspection.

Price's Coal-pit, Blackstone Hill (G. Price, lessee).—Coal taken out for private use only

St. Bathan's Coal-pit, St. Bathan's (James Enright, lessee).—(2/8/1905): Opencast. Overburden 8 ft., and coal-face 12 ft. in depth. Stripping neglected, and coal-face undermined, rendering the pit a dangerous place for the men to work in. The lessee was notified under date the 19th August to have the pit put in safe working-order. (23/9/1905): An attempt had been made to strip the overburden,

but had been abandoned. Firm measures require to be taken to have this pit maintained in safe working-order.

Rough Ridge Coal-pit, Idaburn (Mrs. M. Beck, lessee; William Beck, manager).—(1/8/1905): opencast pit; overburden 9 ft.; coal-face 30 ft. The pit was in a dangerous state for working in, owing to the coal-face being undermined and to neglect of stripping. The lessee was notified, under date the 19th August, to have the pit put in safe working-order. (23/9/1905): Stripping still unsatisfactory. The manager of this pit has failed to maintain the safe system of working which prevailed prior to his management.

McLean's Coal-pit, Idaburn (Mrs. M. Beck, lessee).—(23/9/1905): Still nothing doing in this area.

Idaburn Coal-pit, Idaburn (J. White, lessee).—(1/8/1905): The pit was in a dangerous state for working owing to neglect of stripping and the coal-face being undermined. The lessee was notified, under date the 19th August, to have the pit put in safe working-order. (23/9/1905): Stripping only partially attended to. Two men were engaged undermining the coal-face, the attendant risks of which were admitted by Mr. White who pleaded that he was working shorthanded, and labourers could not be got for stripping.

Border Coal-pit, Rough Ridge (George Turnbull, lessee, deceased).—(23/9/1905): No work has been done since Mr. Turnbull's death. The pit is idle and full of water.

Gimmerburn Coal-pit, Gimmerburn (C. Dougherty, lessee).—Opencast. Coal mined for local requirements.

McCready and Coomb's Coal-pit, Kyeburn Diggings (W. Coombs, lessee).—Coal now mined for private use only.

Healey's Lignite License, Kyeburn (Thomas Healey, licensee).—Prospecting for suitable inlet to vertical seam, larger proportion of which now lies below level of Kyeburn River; and water drainage heavy.

Stephen Beer's Lignite License, Kyeburn.—Lignite license expired and not renewed.

Donaldson's Coal-pit, Horse Flat, Macrae's (W. and G. Donaldson, lessees).—The coal-seam proved difficult to work; also, owing to inferiority of quality, the lessees have abandoned the mine.

Clyde Collieries Company, Clyde (George Smith, mine-manager; A. E. Ackroyd, secretary, Dunedin).—(11/5/1905): Work is being conducted in the area known as "Dairy Creek Mine." The main fault east and west crosses the faces of all the north-going places, and is apparently the northern boundary of the coal-basin, and abutting unconformably on the schist formation or bed-rock of the district. (27/9/1905): Good places are being driven 10 ft. wide but narrower in faulted ground. Workings, roadways, and air-courses all in good order, and ventilation good. Rules posted; plan kept; and report-book to date.

Fraser River Coal-mine (late Holt's), Shepherd's Flat, Clyde (James Goodger, secretary, Cromwell; J. B. Cooper, permit).—(15/9/1905): A new adit has been driven 200 ft. through the measures in order to win coal water-free. The coal-seam at face of drive is 6 ft. in thickness. Ventilation should be improved by stentons and use of brattice.

Lowburn Flat.—Boring operations are being conducted with a view to striking the Cromwell coal-seam. It is now proposed to further prospect the ground by shaft-sinking.

Cardrona Colliery, Cardrona (R. McDougall, lessee; D. Scurr, manager).—(15/5/1905): Dip of seam, synclinal. Seam bottoming at 50 ft. from surface forming a syncline filled in with hard clays and cemented quartz gravels. Seam 20 ft. in thickness on eastern and 15 ft. on western side, semi-vertical on either side from surface downward, but is found burnt out on eastern side going northward. (2/12/1905): The coal is improved in quality, and pit standing in better order than I had previously seen it. Present area should be worked out by winter, and in spring, when the men return, output will be won from the new area.

Gibbston Coal Company, Gibbston Saddle (John Duncan, manager; G. R. Cheeseman, general manager).—The rise section pillars are now being drawn. A supply of timber is kept at hand. The new low level tapped the coal-seam at 320 ft. in. Being driven through loose and broken strata, good timbering was a necessity. A fair amount of solid coal to the rise is again available. Report-book kept.

Cromwell and Bannockburn Collieries Company, Bannockburn (A. S. Gillanders, mine-manager; T. K. Harty, managing director).—Excelsior Mine (12/5/1905): Main levels being extended will shortly connect with Wilson's Mine. Other work consists of pillaring places to the rise. Mine in good order, and timber used as required. Although abundance of air at intake, ventilation of working-faces not so good as it might have been had the air been properly conducted and bratticing of stentons been well attended to. (29/12/1905): At the end of the year the main levels holed through into Wilson's Mine, and both mines are now practically one. A strip of solid coal is available of about 3,000 ft. in length by 300 ft. in breadth. The coal contained in the pillars will now be worked back from the centre in each mine, and should yield many years' supply.

Wilson's Mine (29/12/1905): Very little work has been done at this mine during the year. The mine is in good working-order, and could, if necessary, supply the trade of the district in the event of any temporary stoppage at the Excelsior Mine.

Kawarau Mine: Main dip now down 775 ft. to the face; seam 14 ft. overlaid by 4 ft. of clay, then sand and water. Workings are now in area lying between Tom's and Parcell's Gullies. A break in the roof caused the loss of 200 ft. of the dip owing to a run of sand and water; the sand is very fine and penetrating, and only concrete stoppings are found capable of keeping it back. Coal in the crosscut is of good quality, but the seam is found thinning to north and south when approaching the gullies. Gauzes are worn by the miners for protection to their eyes in proud coal. Towards the bottom

of the drive the dip of seam is changing from west to south-west, and a slight rise to the face. Places driven narrow and timbered, as necessary to obviate risk of any breaks in the roof. Three visits of inspection were made during the year.

Cairnmuir Coal Company, Bannockburn (James Gibson, permit; James Gordon, secretary).—A small company having been formed, a start is being made to rework the property. A shaft 63 ft. in depth is sunk, and a level is being driven to rise section shaft for ventilation. Seam 15 ft. in thickness, dip 1 in 3 to the north.

Charles Angel's Coal-pit, Bannockburn.—Worked for private use only.

Nevis Coal-pit, Nevis (Charles Scott, lessee, permit).—(27/12/1905): Workings in good order, but limited in extent by old workings to the rise, by soft coal underfoot, and by a fault ahead. Sluicing overburden may be resumed and balance of coal won opencast.

Ryder's Coal-pit, Nevis (Charles Scott, lessee).—(27/12/1905): When the drainage tail-race is deepened another lift of coal will be available.

Mrs. A. Holmes's former area is now included in Scott's lease, and will be worked in conjunction therewith.

Gunion's Coal-pit, Nevis (R. Gunion).—(27/12/1905): There was nothing doing at this pit at this date.

Ritchie's Coal-pit, Nevis (Robert Ritchie, lessee).—(28/12/1905): A water-supply has been brought in from the Remarkables Creek, and the top material is sluiced off before the coal is taken out. Increased output due to requirements of gold dredges in the district.

Graham's Coal-pit, Upper Nevis (A. and S. Graham, lessees).—(28/12/1905): Nothing doing. The coal-seam proved to be soft; and, as the dredge ceased operations, the pit was closed down.

SOUTHLAND.

Pukerau Coal-pit, Pukerau (C. O'Hagan, permit).—(26/7/1905): Area, 10 acres. Thickness of seam, 17 ft.; coal strong; width of places, 15 ft; pillars, 10 ft. square. The coal is at present being won from the dip of the level. A dip drive should be driven to the boundary and the coal worked to the rise. Three men employed.

No. 2 lease (area, 5 acres): No work so far has been done on this area.

Nelson's Coal-pit, Pukerau (J. H. Nelson).—(26/7/1905): The output from this mine is small. Two men at work. The main drive has now been driven a distance of 2 chains, and the coal is mined from the rise section. Width of places, 10 ft.; pillars, 10 ft. square; 4 ft. of coal left in the roof; mine-water troublesome. It is proposed to instal a small oil-engine to provide power for a suitable pump.

Mason's Coal-pit, Pukerau (A. Mason).—Coal taken out for private use only.

Milne's Coal-pit, Pukerau (A. Milne).—Coal taken out for private use only.

Glover's Coal-pit, Pukerau (Thomas Glover).—Coal mined for private use only.

River View Coal-pit, Gore (L. D. Nicol, owner).—Coal is mined from this opencast pit for private use and for district supplies. The pit is on freehold land.

Whiterigg Colliery, East Gore (W. H. Paterson, owner; John Hartley, permit).—(5/4/1905): Thickness of seam, 17 ft. The dip is 3 chains in length. Mine-workings in good order; places driven 18 ft. wide by 10 ft. in height; 7 ft. of coal left in the roof. The coal is holed 3 ft. and, being very strong, is shot down. The explosive used (Curtis and Harvey's powder-pellets) is stored in a suitable locked magazine on the surface and brought into the mine in covered canisters. Plan kept; rules posted; report-book to date.

Hefferman's Coal-pit, East Gore (William Jones, lessee, permit).—(5/4/1905): Pit idle on this date. (24/5/1905): W. C. Burgess, lessee, permit. This pit was worked until May by William Jones who sold to the present lessee. A water-level drive has been driven, but is now up to broken and faulted coal. There are a few "tops" to be taken down from the rise section, but further work is to be prosecuted to the dip, and for this purpose a boiler and steam-pump will be installed. The seam is fully 20 ft. in thickness of which 4 ft. is left in for support of roof. Several props required in main drive. Ventilation is maintained by an air-shaft. Rules posted; three men employed. I visited the pit on this date in connection with an accident to William C. Burgess on the 22nd instant—dislocation of shoulder by fall of coal from roof.

Rosedale Coal-pit, Waikaka Valley (August Reinke, owner).—(5/4/1905): Thickness of coal-seam, 17 ft.; stripping, 8 ft. Stripping not being taken off, and coal-face being undermined. I advised the men to strip ahead, and subsequently wrote the owner to that effect on the 18th April. Two men employed. (5/5/1905): The old opencast pit has been abandoned, and a new one is being opened up in which the stripping is not so heavy. One dredge is supplied from this pit.

Michael Leitze's Coal-pit, East Gore.—Coal mined for private use only.

A. McDonald's Coal-pit, East Gore.—(24/5/1905): Evidently only a few loads are taken from above water-level for private use. The dip of the seam and the heavy overburden prevented this seam from being worked profitably.

Robert Smith's Coal-pit, East Gore.—Pit on freehold land. Coal mined for private use only.

H. Smith's Coal-pit, East Gore.—Pit on freehold land. Coal mined for private use only.

Green's Coal-pit, Gore (J. and J. Smyth, lessees; J. Mason, mine-manager).—(13/6/1905): The mine is in good working-order. A new entrance has been made in the rise section going west, and the coal is being mined to the northern boundary. The main dip is being pushed on and the face is now 4 chains from daylight. At this point the seam is 19 ft. in thickness. Compressed powder stored in suitable magazine, and powder-canisters provided and used by the men. Rules posted; report-book to date; plan kept. Eleven men employed.

Knapdale Coal-mine, Knapdale (W. Irvine).—This pit has been closed throughout the year.

Burnwell Coal-pit, Chatton (G. P. Johnston, owner; James Stark, lessee, permit).—(23/5/1905): The present lessee is pushing on the main level, the dimensions of which are: 10 ft. in height, 16 ft. in width. 8 ft. of coal is left on the roof. A small steam-pumping plant has been procured, and the work will be continued further to the dip of the seam than hitherto. Five men are employed.

Pacey's Leasehold Coal-pit, East Chatton (R. Pacey, lessee).—(23/5/1905): The small engine and the pump have been removed from the leasehold to the freehold area. The leasehold area is flooded and coal is not now being taken out. This area is hampered by its distance from the public road. Coal-carters prefer to patronise the nearest coal-pit, owing to the bad roads in the neighbourhood of the East Chatton coal-pits.

Pacey's Freehold Coal-pit, East Chatton (R. Pacey, owner; J. R. Pacey, permit).—(23/5/1905): The work of stripping off the overburden was delayed until rendered impossible by the lateness of the season. The coal-seam is 22 ft. in thickness, and very strong. Two drives have been put in, 16 ft. in width and 10 ft. in height. I advised the manager to draw the places in to 14 ft. and also gave instructions that the mine-mouth should be secured with timber. Five men employed

Perkin's Coal-pit, East Chatton (A. Perkins, lessee).—(23/5/1905): Opencast pit. Coal mined principally for dredge-supply. Two men generally at work.

Harvey's Coal-pit, Chatton.—(2/11/1905): Nothing doing.

Chatton Coal-pit, Chatton (W. Dickson and M. Gerkin, lessees).—(24/5/1905): There are five seams of lignite in this property, but only one is worth working. This seam is vertical, and has been opened to a depth of 13 ft., at which depth the width of the seam is 30 ft. The seam is worked opencast, but unfortunately the sides are heavy, and slips come in from the sides. On this date the pit was smothered by a heavy slip, and I instructed the lessees to strip off a large area ahead, and to keep the sides well trimmed back. Two men were engaged digging coal from the top end of the lease, while the lower pit was being put in working-order. I also instructed the lessees to place this section in safe working-order. Three men are employed. (2/11/1905): Pit now in fair working-order.

Cross's Coal-pit, Otama (Cross Bros.).—This coal-pit is situated on freehold land, and coal is mined for private use only.

Thorndale Coal-pit, Waikaka Valley (E. C. Orchard, owner; Thomas Ritchie and Frank Raunsley, lessees).—(5/4/1905): One man mining the coal. Drive, 12 ft. in height, 15 ft. in width, and 25 ft. in length, has been put in water-level, leaving coal underfoot 5 ft.; roof consists of 1 ft. of stone; 3 ft. of coal above 10 ft. of clay and gravel stripping. I instructed Ritchie that timber was to be used in the drive for support of the roof. Opencast pit: Coal-face, 17 ft. in height; stripping, 10 ft. to 12 ft., gravel and clay. The coal-face required to be made safe by taking down an overhanging rib of coal, which was unsupported. I instructed the lessees to do this, and subsequently wrote them to the same effect on the 18th April. The powder is not stored at the pit. Suitable powder-canisters are required. Two men at work. (5/5/1905): The opencast pit is now being placed in good working-order; the stripping is being taken off and the overhanging coal taken down. The drives are being driven 16 ft. in width, and pillars left 15 ft. square. Suitable powder-canisters not yet provided.

Springfield Coal-pit, Waikaka Valley (J. P. McIntyre, owner; Duncan McColl, lessee).—(11/5/1905): Opencast pit; seam, 10 ft. in thickness; stripping, 10 ft. The pit is in good working-order, and has been opened out on an extensive scale. Suitable powder-magazine provided. Four men employed. (23/5/1905): Pit in good working-order; overburden well trimmed back from the working coal-face; a large area is being stripped. On the 19th instant Mark Everett had his thigh broken through a fall of gravel from the face. Everett expected the gravel to fall, but had stood too close in for his own safety.

Reed's Coal-pit, Waikaka Valley (Robert Reed).—(14/4/1905): In this opencast pit the stripping is becoming too heavy for profitable working, and a start will be made after the winter to mine the coal. The blasting-powder is carefully used. Pit worked principally for dredge-supply. Three men employed. (15/6/1905): William Jones (permit) has leased this pit for a term of five years. The seam has hitherto been worked opencast, but the present lessee is preparing to mine out the coal. 2,409 tons of coal were raised and sold during the year. Four men employed.

McGill's Glenlee Coal-pit, Wendon Valley (D. T. McGill, permit).—(11/5/1905): This pit is in good working-order. The seam is 13 ft. 6 in. in thickness. Places are driven 14 ft. in width, and 3 ft. of coal is left in the roof; pillars, 12 ft. square. Dredge and district supplies are drawn from this pit. A water-free level was driven, and the coal is being mined from the rise-section. Compressed powder is used for blasting. Ventilation good. Two men generally employed.

McDonald's Coal-pit, Wendon Valley (A. A. Edge, lessee; S. Coulter, permit).—(11/5/1905): The seam is worked by levels broken off from the main dip. The seam is 15 ft. in thickness; places driven 16 ft. in width and 10 ft. in height. Pillars are left 18 ft. square. The compressed powder for blasting is well stored and carefully handled. Ventilation maintained by second outlet. The coal is mined for dredge and district requirements. Rules posted. Four men employed.

Edge's No. 14 Coal-pit, Wendon Valley (A. A. Edge, lessee).—The rise-section of this mine was exhausted in 1904, and no effort has been made to win the coal further to the dip of the seam.

J. Bushbridge's Coal-pit, Wendon Valley.—From this opencast pit supplies are mined in summer for winter use.

Perkin's Coal-pit, Wendon Valley (George Perkins).—Coal mined for private use only.

Henderson's Coal-pit, Wendon Valley.—Coal mined for private use only.

Radford's Coal-pit, Wendon (E. and P. Radford).—(9/5/1905): This pit was worked in the early part of the year only, and 210 tons of coal raised.

Waikaia Collieries Company, Waikaia (James Holland, lessee).—This mine became flooded in June, 1904, and has not been unwatered since.

Nelson's Coal-pit, Landslip, Waikaia (R. Rear and Archer, lessees).—(12/1/1905): The new drive has struck the seam at 180 ft. from the surface. The seam is 11 ft. in thickness, but of a broken nature. The roof consists of 4 ft. 6 in. of coal. (9/5/1905): Robert Rear is still trying to get this mine into working-order. His efforts are greatly impeded by the very broken nature of the seam. The natural drainage is heavy, and is largely increased from the abandoned portion of the mine. Timber is an expensive item, a constant supply being required. Ventilation is maintained through the old workings to the shaft. The coal-seam is 16 ft. in thickness; places are driven 8 ft. high and 12 ft. wide. Four men are employed about the pit. This pit was opened for supply to dredges.

Robert Rear's Coal Lease, Landslip, Waikaia.—(19/10/1905): Originally Nelson's area of 7½ acres. This area has now been granted to Robert Rear, who has two men employed. On this date the mine was flooded. Plan required of underground workings.

Landslip Coal Company (late McIvor's), Waikaia (W. E. C. Reid, secretary, Dunedin; James Duncan, mine-manager).—(12/1/1905): This property is under course of transference from the present owner, R. McIvor, to the Landslip Coal Company, and it will be worked to supply dredging requirements in the district. A contract has been let to J. H. Young and J. Hughes to mine the coal. Five men were employed in the mine on this date, principally taking up several feet of bottom coal left underfoot in McIvor's working. A winding and pumping plant is being installed, this being necessary to open up the seam further to the dip. (9/5/1905): George F. Turner, mine-manager. Since taking charge of the mine the contractors, Young and Hughes, have confined their attention to the rise section opened up by McIvor, who drove the dip to where it now stands and broke away three levels. The contractors have pushed on in the solid. They have also lifted bottom coal left underfoot by McIvor, taken down head-coal, and taken coal from large-sized pillars. The seam is 13 ft. in thickness, and of a strong, clean nature. The places are now 10 ft. high with 3 ft. to 5 ft. of coal in the roof. The places average 12 ft. in width. The mine has, however, reached that stage at which it would be unwise to extract more than one month's coal from the rise section, but there should be no difficulty in obtaining that amount with safety. It will be necessary now to extend the main incline and open up the dip section of the mine. Five men are employed. (19/10/1905): The dip-drive has been extended to a distance of 4½ chains and the coal-face is still strong and good. Places are broken off north and south. Ventilation is fair, and is maintained by the second outlet drive. A good supply of timber is kept at the mine-mouth, and well used. Rules posted; report-book to date; plan kept. Ten men employed.

Ross's Coal-pit, Landslip, Waikaia (Robert Ross, lessee).—(12/1/1905): Four men have been employed in opening up this mine by driving, and it is expected that a good seam of coal will be met with. (9/5/1905): The seam of coal struck is fully 16 ft. in thickness and of splendid quality. A water-free level is being driven and the coal has been mined 25 yards to the rise. The places are driven 11 ft. wide, and the pillars are left 30 ft. square. An air-shaft 40 ft. in depth insures good ventilation. The mine is in good order. Timber is well used. Gelignite is the explosive used, on account of the wet nature of the coal. This pit supplies dredges and district requirements. Four men are employed. (19/10/1905): The mine has been sublet to W. McNeil and Coutts. Mine-workings in fair order. Several props required for support of roof in wide places. Experience has proved that the seams of this district require to be worked narrow, leaving strong pillars and roof coal. Copies of general and special rules required. Fence to be erected round top of upcast shaft. Plan of mine-workings to be obtained.

No. 1 Coal-pit, Landslip, Waikaia (A. McKinnon (permit) and Wallace, lessees).—(12/1/1905): A deep drainage tail-race has been brought up from the level of the Waikaia River, and a new level is being put in to grip the coal further to the dip. Four men are employed. (9/5/1905): The new level was opened out in a solid block of coal, but it soon ran into Vial's old workings, which were worked many years ago and of the position of which the lessees were unaware. The low level has now collapsed and has been abandoned. There is still some coal worth working to the rise, but the section requires ventilation. A high-level drive is now being put in to effect this. (19/10/1905): Nothing doing at this mine. The lessees have determined to abandon the lease owing to the increased cost of mining coal from the dip of the seam. Further supplies can only be obtained by procuring hauling and pumping plant.

Monaghan's Coal-pit, Landslip, Waikaia (R. Monaghan, lessee).—(12/1/1905): The drive struck the top coal-seam in the floor at 200 ft. from daylight. The top seam is 7 ft. 6 in. in thickness. Two men employed. (9/5/1905): A drive 3 chains in length was put in to strike the seam, at a total cost of £100. In the adjoining mine (McKinnon's) there are two seams capable of being worked together. Unfortunately in Monaghan's mine the two seams are separated by 4 ft. 6 in. of clay so that only the top seam which is 7 ft. 6 in. in thickness is being worked. In the north section of the mine the seam is stony and practically worthless, while in the south section the seam is of good quality, but limited in extent by McKinnon's old workings which were broken into and found full of black damp. An air-shaft 50 ft. in depth has been sunk which insures good ventilation. The level drive has reached its limit now as regards drainage, and the coal must be won from the dip. To do this, pumping plant will be required, but the lessee intends to try to work the dip and unwater it. Several props to the roof were required in places in the mine. The pit was opened for dredge-supply. Three men are employed. (19/10/1905): Recent operations would appear to have taken the form of robbing pillars unreasonably, as on this visit the south section of the mine was in a state of collapse involving considerable loss of coal. A start was being made under new management to open up the north area. I pointed out to the lessee that owing to the rotten nature of the strata associated with the coal-seam all work should be narrow and strong pillars and head coal should be left. Rules posted; report-book to date; plan of underground workings to be furnished. Two men employed.

Muddy Terrace (Shale-pit), Waikaia (T. F. Goldie, owner).—(19/10/1905): Opencast pit. The heavy overburden of clay is kept well stripped back. The principal supply is to dredges in the district.

The stripping has now become so heavy that the advisability of driving out the coal is being considered. Four men usually employed.

Argyle Coal-pit, Upper Waikaia (J. and T. Baxter, lessees).—This opencast pit is still worked by luicing off the overburden before taking up the coal. The supply is principally to settlers in the Upper Waikaia district. Two men generally employed.

Pyramids Coal-pit, Mandeville (E. Macallister, owner; W. and J. Hollows, lessees).—371 tons of coal were raised up to April, 1905, when the mine was closed down. The mine has not been reopened since.

Waimea Coal-pit, Longridge Village, Waimea.—This pit has been idle throughout the year.

Radford's Coal-pit, Balfour (E. Radford, lessee).—This pit has been opened to mine for lignite on E. Fitzgerald's freehold property.

Roderick McKenzie's Coal-pit, Blackmount Station, Takitimo District.—This property has been purchased for H. Studholme, who mines coal for private and station requirements.

Waimumu Coal-pit, Mataura (C. P. Sleeman, owner).—(15/4/1905): Owing to the recent wet weather the work of stripping has fallen into arrears, but the manager expects to overtake this shortly. Blasting-powder is stored in a suitable locked magazine, and canisters are used. 9,419 tons of coal were raised from this pit during the year. Seven men are generally employed in and about the pit.

Boghead Coal-pit, Mataura (lately Bogside Pit, Mutch and Hurst), (A. Cameron and James Duncan, lessees).—(15/4/1905): Three men are engaged reopening this pit, which was flooded for some time. The pit was not in good working-order on this date, but efforts were being made to improve the condition. Suitable powder magazine and canisters required. 2,139 tons of lignite were raised during the year.

Mataura Lignite-pit, Mataura (Beattie, Coster, and Co., owners; W. Coster, manager).—(15/4/1905): Opencast pit. 22 chains of tramway connect the pit with the roadside depot. Arrangements are being completed to connect with the Mataura Railway-siding to enable the coal to be railed outside the district. The pit is now well opened up in two working-faces, and the overburden kept well stripped in advance. The blasting-powder is well stored and carefully used. 5,707 tons of lignite were raised during the year. Eight men on an average are employed.

McGilvray's Coal-pit, Mataura.—Lignite is raised for private use only, but 55 tons of hæmatite were supplied to the Mataura Paper-mills during the year.

Wainumu Colliery Company, Waimumu (W. J. Williams, manager; H. W. Royds, secretary, Invercargill).—(6/4/1905): Opencast pit; stripping, 16 ft. Three seams, having total thickness of 21 ft., are being worked. A large area of coal has been stripped. The supply is principally to dredges in the Waimumu Valley. 4,811 tons of coal were raised during the year. Seven men generally employed.

Nightcaps Colliery, Nightcaps (J. Lloyd, mine-manager; William Handyside, managing director).—(25/5/1905): Dip section: Seams being worked are upper seam (rise headings) and middle seam, each 15 ft. in thickness; the lower seam, 12 ft., being left underfoot. In No. 3 section rise headings are driven to outcrop, pillars being left for the future. On line of fault, or outcrop, on north-eastern boundary coal thinning to an unworkable size. The "rosin" seam (4 ft. 6 in.) overlying upper seam is being carefully kept up where pillars are to be drawn on account of its liability to spontaneous ignition. A recent case of spontaneous fire underground had been detected and overcome. Similarly, an outbreak in the open face against the opencast, making the third case within three years, which is noteworthy, as it had been considered by the management that the mine-workings were not liable to fire spontaneously. No. 2 section continues to be well robbed, coming back on the middle- and bottom-seam pillars from the outcrop homeward. As is usual, timber is freely used, and a large stock is kept on the premises. The fan-revolutions are to be increased. I found that the powder-smoke did not clear so rapidly as desirable. (16/11/1905): No. 1 district (including dip section) is being developed in coal of excellent quality up to the fault, which has not yet been proved, but there are indications of considerable disturbance. Ventilation satisfactory—brattice well up to working-faces, and powder-smoke is rapidly cleared away. No. 2 district comprises workings in No. 1 seam, which are now pillared back to their limit, 1 chain from main haulage-road, also middle-seam workings on pillars, 3 chains yet from haulage-road. Every care exercised in pillar-workings throughout No. 2 district; roof being bad is heavily timbered, and a plentiful supply of suitable timber is kept on hand. In No. 3 district, with outlet to No. 2, driving in solid in lower seam to boundary; the roof in No. 3 (in coal) is strong, and comparatively free from diagonal backs, and less timber is required than in other parts of the mine. Nos. 2 and 3 districts: Brattice up to faces, and ventilation good. Opencast: A considerable area is stripped ahead, and the three seams are exposed in section, coal aggregating 35 ft. in thickness, having small bands of dirt between the seams. An installation of acetylene gas has been furnished for illumination of railway premises, yard loading-bank, engine-room, and haulage-road. This colliery has been remarkably free from accident throughout the year. Rules posted; plan well kept; and report-books to date.

Hit or Miss Coal-mine, Nightcaps (William Tinker).—(16/11/1905): Underground mining at present suspended in favour of opencast work on the freehold side of the boundary, but preparations are being made to resume work on the area held under lease from the Crown.

Lamont's Coal-mine (H.B.), Nightcaps (David McKenzie, permit; A. Lamont, deceased).—(16/11/1905): Being Lamont's inheritor, McKenzie has started to win the coal opencast and is stripping an area for that purpose. Underground working suspended meanwhile.

Morley Coal-pit, Nightcaps (George R. Spence).—(16/11/1905): An opencast pit on Burrell's freehold. Seam from 6 ft. to 10 ft. in thickness. Stripping kept well ahead.

McBride's Coal-mine, Nightcaps (William Reed, lessee, permit).—Opencast workings for supply of local requirements.

Mount Linton Station Pit, Nightcaps (Gates and McGregor, owners; late Mrs. Chalmers).—Nothing has been done at this pit for some considerable time, and the present owners are uncertain whether they will reopen the pit.

The Willow Coal-pit, Nightcaps (John Clark).—An opencast pit. Coal mined for local requirements.

Kent Coal-pit, Nightcaps (Quested Bros.).—This pit has not been working during the year.

Hogan's Lignite License, Orepuki (Cornelius Hogan, licensee).—Opencast pit; very wet.

Bush Siding Coal-pit, Seaward Bush (R. W. Robson, lessee).—An opencast pit on the Waimahaka line of railway. 1,120 tons of coal were raised during the year.

Thomas Gillie's Coal-pit, Clifton.—(25/5/1905): Pit drowned out owing to pump being unable to cope with surface drainage. The lessee (William Peace) estimates that a self-draining channel could be cut for the sum of £50.

REMARKS.

The output of coal and lignite (Southern District) for the year 1905 amounted to 469,653 tons, an increase of 11,282 tons over the previous year.

Returns of output from the provinces are as follows:—

	Tons.
Canterbury	25,638
Otago	317,731
Southland	126,284
Total	469,653
Output for previous year	458,371
Increase	11,282

The contributions by coal-owners to the Coal-miners' Relief Fund amounted to £464 3s. 10d., while payments from the fund to the amount of £468 8s. 4d. have been recommended on account of accidents which have occurred in and about coal-mines in this district during the year.

ACCIDENTS.

In all, a total of 147 accidents were reported to me during the year, of which four resulted fatally. Of the remainder, only four could be called serious accidents. The balance, though formidable in number, were mainly of a slight character—many of them trivial, and such as are incidental to coal-mining operations, and resulting in the men being unable to resume their ordinary occupations for a few days or weeks, as the case might be—and were principally reported to me in the form of claims for relief from the Coal-miners' Relief Fund; twenty-three of which, after inquiry, were not sustained.

Fatal Accidents.

1st February, 1905.—William Williams, forty, coal-miner: Instantaneously killed by fall of coal from face at Mrs. McPherson's opencast pit, Coal Creek, Roxburgh.

2nd February, 1905.—Allan McKinnie, twenty-six, coal-miner: Instantaneously killed by fall of coal from roof and side of his working-place, main seam, Kaitangata Mine, Kaitangata.

22nd February, 1905.—Robert S. Jordan, mine-manager: Suffocated by smoke and heat from underground fire in vicinity of ventilating-furnace, Castle Hill Colliery, Kaitangata.

15th August, 1905.—Robert Donaldson, twenty, trucker: Concussion of brain; struck by runaway box at foot of No. 1 heading, No. 2 section south, Castle Hill Colliery, Kaitangata. Died at Dunedin Hospital next day.

Non-fatal (Serious) Accidents.

26th January, 1905.—William Taylor, mine-manager, Springfield Colliery, Springfield, Canterbury: Bruised back by fall of clay from the roof. Ninety-one days off work.

19th May, 1905.—Mark Everett, Springfield Coal-pit, Waikaka Valley: Fractured thigh; fall of gravel from face of opencast pit. 150 days off work.

22nd May, 1905.—William C. Burgess, Hefferman's Coal-pit, East Gore: Dislocation of shoulder by fall of coal from roof. Forty-seven days off work.

25th September, 1905.—Robert Statham: Body bruises; fell down a small air-shaft in Kaitangata Mine.

I have, &c.,

E. R. GREEN,

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

APPENDIX I.

MINE-MANAGERS' EXAMINATION-PAPERS.

Questions used in Examination of Mining Managers for First- and Second-class Certificates.

Subject No. 1.—*On Shaft-sinking, Tunnelling, and Opening-out of a Colliery.*

1. Assuming you were placed in charge of the development of a new coalfield, what preliminary steps would, in your opinion, be necessary before determining the position of shafts or general surface works for dealing with the output of the field?

2. A shaft 12 feet in the clear is to be sunk through 200 feet of alluvial deposit heavily watered: describe the method you would adopt for doing so; and explain in detail the necessary equipment, giving sketches of, and strength of, tubbing required.

3. Describe the plant in detail, also material required, to sink a shaft to a depth of 1,800 feet. Explain how you would ventilate the shaft and carry on operations with a cradle permanently suspended, a feeder of water (1,200 gallons per minute) following the sinking to a depth of 1,600 feet.

4. If two shafts 50 yards apart and 1,300 feet deep are sunk to a 4 ft. 9 in. seam of coal having soft roof, show by sketches how you would connect them; and also give sketches showing how you would lay out the pit-bottom and main roads to deal with an output of 1,200 tons in eight hours. Give size of roadways and size of shaft-pillars.

5. Explain, and show by sketches, how you would secure the sides of a shaft being sunk through soft strata before permanent brickwork is put in.

Subject No. 2.—*On working Coal and timbering underground.*

1. Explain the working of coal by the following systems:—
   (*a.*) Pillar-and-stall and double-stall.
   (*b.*) Working out and working home by longwall method.

Show sketches and state reasons why any one system is preferable to the other.

2. What method would you adopt for working a seam of coal 5 ft. 9 in. thick, with soft floor and fairly hard roof, dip being 1 in 3.75, and with 60 fathoms of cover?

3. Explain the term "thrust," and state what steps you would take to protect your active workings and main roads if threatened thereby. Show sketches.

4. Describe in detail and show by sketches the best method of setting heavy timber bars in the main haulage-road of a mine having a bad roof, the dip being 1 in 4.

5. Show by calculation the breaking-strain of a beam of timber 14 in. by 10 in. and 10 feet between the supports, load to be evenly distributed.

6. Show by sketches, plan, and side elevation how you would timber a working-bord 6 yards wide; also method of securing the working-face whilst holing and cutting.

Subject No. 3.—*On the Gases of Mines, Spontaneous Combustion, and Ventilation.*

1. Give the chemical symbol, composition, specific gravity, and characteristics of the gases usually met with in coal-mines, and describe their effects on human beings.

2. If you had a quantity of 50,000 feet of firedamp in a disused roadway, having only 2 per cent. of air, what additional quantity of air would be required to bring the mixture up to its highest explosive force?

3. What is spontaneous combustion? and, knowing a mine to be subject to same, what precaution would you take to minimise the dangers thereof, and how would you deal with an outbreak of fire underground, having special regard to the safety of workmen employed thereat?

4. Explain the advantage to be derived from splitting air, and describe the most effective method of doing so, and state the limit which governs effective splitting.

5. Sketch and give dimensions of an overcast to pass 50,000 cubic feet of air at a velocity of 16 feet per second.

6. How does the power required to overcome friction in mines vary with the perimeter, area, length, and velocity? If 40-horse power produces 35,000 cubic feet of air per minute, how many horse-power would be required to produce 140,000 cubic feet per minute?

7. What are the advantages to be derived from having large airways? Also, if 144,000 cubic feet passed through an airway 6 feet high, what is the width of same?

SUBJECT No. 4.—*On dealing with Old Workings and other Sources of Danger.*

1. Explain the precautions you would take, and show by sketches how you would operate, in approaching old workings to the rise, and known to be standing full of water.

2. Show by sketches how you would construct a dam underground in place 8 feet wide by 6 feet high to resist an ultimate head of 800 feet of water-pressure. Describe the nature and size of material, and show by calculation the pressure per square inch due to the head, and total pressure of water against the dam.

3. Give your ideas on the handling of explosives, also charging, tamping, and firing of shots. What is a blown-out shot, How is it caused, and what are the attendant dangers of such?

4. What do you consider the best explosive for use in—

(*a.*) Shaft-sinking;
(*b.*) Dry and dusty mines;
(*c.*) When firedamp is given off?

And state how you would carry out blasting under the several conditions above mentioned.

5. To what cause are the greatest number of accidents in coal-mines attributed? and what would you suggest should be done to minimise same?

6. Describe a safety-lamp, and give sketches in detail of a modern one, stating the principle of the lamp-gauze; and state what, in your opinion, is the best lamp for testing for firedamp.

SUBJECT No. 5.—*On Steam Boilers and Engines about Collieries.*

1. Describe the fittings of a Lancashire boiler; and, given such a boiler 30 feet long by 8 feet diameter, what should the thickness of plates be for a safe working-pressure of 120 lb. per square inch (show by calculation)? And give sketch showing how you would set such a boiler, giving dimensions of flues.

2. Give sketch of safety-valve, and state weight required to counterbalance a boiler-pressure of 90 lb. per square inch—length of lever between fulcrum and weight to be 34 inches; from fulcrum to centre of valve, $2\frac{1}{2}$ inches; diameter of valve, $2\frac{3}{4}$ inches; and weight of lever, 16 lb.

3. Draw a section through a steam-cylinder and valve-chest, showing position of glands and all steam-ports.

4. Explain the term "horse-power," and show by calculation the size of cylinder, length of stroke, and speed per minute of an engine required to develop 200-horse power with a boiler-pressure of 100 lb. per square inch; steam to be cut off at two-thirds of stroke.

5. Enumerate the causes which prevent the theoretical power of steam-engines being obtained in practice.

SUBJECT No. 6.—*On Mine Drainage and Haulage, and Appliances for same.*

1. Enumerate the different methods of mine-drainage, and the different types of pumping-engines; also explain why a siphon can deliver water over a point, say, 19 feet higher than the feed, and can deliver to a lower but not to a higher point than the feed.

2. Show by calculation the size of steam-cylinders you would apply to a direct-acting pump, using 60 lb. pressure per square inch, to deliver 90,000 gallons an hour to a vertical height of 700 feet, plunger-speed to be 150 feet per minute.

3. Assume you are required to haul 80 tons per hour by endless rope at a speed of 3 miles an hour over a road 1 mile long, grade being 1 in 9 against the load; each empty tub weighs 5 cwt., and carries 10 cwt. of coal; allowing $\frac{1}{25}$ for friction of tubs and 40 per cent. for other mechanical resistances; weight of rope, 12,000 lb.: find horse-power.

4. Enumerate the various systems of haulage in use for mines, and give particulars and sketches of any system of which you have practical knowledge.

5. Assume a boiler-pressure of 120 lb. per square inch, what size engines, length of stroke, and size of drum would be required to raise 1,000 tons in 8 hours from a depth of 1,600 ft.? Also give size, weight, and strength of rope, size and weight of tubs and cage, also kind and number of conductors you would adopt for guiding cages in shaft.

6. Describe the different kinds of safety appliances used in connection with winding from shafts.

SUBJECT No. 7.—*On Geology, Surveying, and Making of Plans.*

1. Describe the geology of any coalfield of which you have a knowledge. Show by sketches what is meant by "conformable strata," and say what is meant by the terms "igneous," "aqueous," and "metamorphic" as applied to rocks.

2. Show by sketches, and explain, how you would connect a surface with an underground survey, the shaft being 450 feet deep.

3. A triangular block the sides of which are 90 yards, 105 yards, and 125 yards respectively: give area in acres.

4. Describe the important features which should, in your opinion, be be delineated on colliery-plans.

5. Candidate to produce plan showing the workings of a colliery with the surface taken up for at least 20 acres in the vicinity of the shaft or adit, the workings to be shown in colours. The connection between the surface and underground must be shown and described in the event of there being only one shaft. The levels and main headings must have assumed traverse calculated in detail, and showing latitude and departure for each bearing. The plan to be candidate's own work, and to be accompanied by field-book.

6. Plot the following bearings with protractor and scale, and calculate the latitude and departure, and give course and length of 6th set to tie with the start of the first set.

1. N. 30° 15′ E., 500 links.
2. S. 40° 10′ E., 400 "
3. S. 10° 10′ W., 350 "
4. S. 65° 25′ W., 250 "
5. N. 50° 15′ W., 300 "

7. Describe system of levelling, and show how to keep a level-book and reduce levels.

SUBJECT No. 8.—*Arithmetic, and Knowledge of the Coal-mines Act.*

1. If 2,000 tons of large coal costing 9s. be produced and 1,500 tons of small coal costing 4s., at what price must the mixture be sold to make 9 per cent. profit?

2. If the wages and stores account on 2,500 tons of coal, selling at 8s. a ton, amount to £850, what is the profit after 7½ per cent. advance in wages and stores and a corresponding rise of 1s. per ton in the selling-price?

3. A circular shaft 100 fathoms deep is filled with 2,513·28 cubic yards of water: what is the diameter of the shaft?

4. Two miners in 11 days hew 150 tons of coal at 1s. 10d. per ton, cut six yards at 6s. per yard, and receive 15s. consideration: what is the total amount, and each man's daily average; and what would the total amount and daily average be if the tonnage-rate was increased 8 per cent.?

5. A shaft sunk to a depth of 1,200 feet: 16 per cent. of the depth cost 35 per cent. per foot more than the other part, the total cost being £3,009 12s.: find cost per foot of each portion.

6. Briefly state requirements of Coal-mines Act as to—
   (*a.*) Ventilation;
   (*b.*) Blasting and storage of explosives;
   (*c.*) Water, and precautions on approaching old workings;
   (*d.*) The duties of manager and under-manager, also of fireman and deputies;
   (*e.*) Safety-lamps and lamp-stations; and
   (*f.*) Signals.

SUBJECT No. 1.—*On Prospecting, Shaft-sinking, Tunnelling, and Opening out a Colliery.*

1. Describe the method you would adopt in sinking a shaft 15 feet diameter 600 feet deep, first 300 feet being heavily watered. In your answer make special reference to ventilation, shot-firing, and other necessary precautions for the general safety of the sinkers.

2. Assume that a shaft is sunk through a seam of coal 4 ft. 6 in. thick at 450 feet deep: give size of shaft-pillars; also show by sketches how you would open out your main roads from the bottom of shaft, knowing the existence of a soft floor: give size of levels.

3. Show by sketches how you would carry out the walling of a shaft with brick when there are no hard beds to carry the walling-curbs.

4. Show by sketches the various systems of timbering applicable to coal-mining, having regard to main roads—
   (*a.*) With soft floor and roof;
   (*b.*) Longwall, and
   (*c.*) Bord-and-pillar.

5. A heavy fall occurs in a main haulage-road: show by sketches how you would retimber same.

6. In sinking a shaft 400 feet deep, if you come across 20 feet of any soft ground say how you would secure same—first, temporarily; second, permanently.

SUBJECT No. 2.—*On working Coal and Timbering underground.*

1. Describe the different systems of working coal, with special reference to any with which you are practically acquainted.

2. Explain how you would timber a main road in a mine, the same to be 12 feet wide and 7 feet high, rising 1 in 4 through a fault, the roof being shale 6 feet thick, and depth from surface 300 feet. Give size of material you would use.

3. What precautions as to timbering are necessary to prevent accidents at the working-faces?

4. Describe the different methods of pillar-extraction, and the conditions necessitating the different methods.

5. Give fully the reasons for dividing mines into districts, and explain the advantages arising therefrom.

SUBJECT No. 3.—*On Gases of Mines, Spontaneous Combustion, and Ventilation.*

1. Explain the various systems of ventilating mines, and state which method you prefer and reasons for same.

2. If a mine is ventilated by three splits of air, how would you ascertain whether any one of them was passing more than its proper quantity? and, if found to be so, how would you reduce it to its proper proportion?

3. If 36,000 cubic feet of air be passed through an airway at a velocity of 10 feet per second, what is the area?

4. Describe the gases most commonly met with in coal-mines, and give your practical experience in dealing with these.

5. What do you understand by the term "spontaneous combustion"? and what precautionary and other means would you adopt in dealing with an active fire underground?

SUBJECT No. 4.—*On dealing with Old Workings and other Sources of Danger.*

1. Suppose a series of bords approaching old workings containing noxious gas or water, what would you do? Explain fully the precautions you would take, and give sketches.

2. In a mine giving off explosive gas freely and in full work a fall suddenly occurs blocking up the return airway: what steps would you take in such difficulty?

3. To insure the greatest possible safety, what explosive would you use and what regulation would you enforce when firing shots in a seam giving off explosive gas, and being also dry and dusty?

4. In a mine where it is necessary to use safety-lamps, what regulation would you establish as to their proper use? Also explain why an unshielded lamp is unsafe.

5. What are the dangers likely to result from a blown-out shot? and how would you guard against such occurrences?

SUBJECT No. 5.—*On Mine Drainage and Haulage, and Appliances for same.*

1. Explain the different systems of mine-drainage, and fully describe any of which you have had experience.
2. Describe the main parts of a suction pump, and explain the principles of its working; also the principle on which a siphon works.
3. Describe the different systems of haulage in mines, and describe any mechanical method of which you have had experience.
4. Say how you would fit up and operate an incline of 1 in 10, and 400 yards long, to lower 200 tons of coal in a seven-hours shift.
5. Give rules for finding the breaking-strain and safe working-load of wire-ropes and chains.

SUBJECT No. 6.—*Arithmetic, and Knowledge of Coal-mines Act.*

1. How many square feet of brattice is contained in 129 yards long by 7 feet high; and what would be its cost at 6½d. per square yard?
2. How many 24-feet rails would be required to lay a road a quarter of a mile in length, and what will be the total weight of rails at 30 lb. per yard? Also, how many sleepers will be required at 2 ft. 6 in. centres?
3. In 11 days two miners put out 135 tons 12 cwt. of coal at 1s. 10d. per ton, and drove 4½ yards narrow at 5s. per yard, and were paid 11s. 6d. consideration: what is the average daily wage of each man?
4. How many gallons of water are there in a shaft 18 feet diameter and 70 feet deep when quite full?
5. Assume a stone drive 100 yards by 10 feet by 6 feet: what are the cubic contents in yards; and how much would it cost if driven at £2 2s. 6d. per foot?
6. State briefly requirements of Coal-mines Act as to—
   (*a.*) Blasting;
   (*b.*) Fencing entrance to shafts;
   (*c.*) Ropes and chains;
   (*d.*) Water and boreholes;
   (*e.*) Duties of fireman and deputies.

APPENDIX II.

LIST of PERSONS who have obtained CERTIFICATES as MINE-MANAGERS under the Coal-mines Acts of 1886, 1891, and 1905.

THE COAL-MINES ACT.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES.

Issued under the Coal-mines Acts, 1886 and 1891.

Aitken, T., Wendon.
Alexander, T., Brunnerton.
Austin, J., Sheffield.
Binns, G. J., Dunedin.
Bishop, J., Brunnerton.
*Brown, T., Westport.
Brown, T., Glentunnel.
Cameron, J., Denniston.
Campbell, J. C., Fairfield.
Cochrane, N. D., Dunedin.
Collins, W., Taupiri.
Dando, M., Brunnerton.
*Elliott, R., Wallsend.
Ferguson, A., White Cliffs.
*Freeman, J., Green Island.
*Geary, J., Kamo.
Gray, J., Abbotsford.
*Harrison, J., Brunnerton.
Irving, J., Kaitangata.
Jemison, W., Waimangaroa.
Kenyon, J., Shag Point.
Kerr, G., Kamo.
Lindsay, W., Otago.
Lloyd, J., Invercargill.
*Louden, J., Green Island.
Love, A., Whangarei.
Mason, J., Nightcaps.
May, J., Greymouth.
Moody, T. P., Kawakawa.
Moore, W. J., Springfield.
Nelson, J., Green Island.
Ord, J., Huntly.
*Redshaw, W., Whangarei.
Reed, F., Westport.
*Richardson, D., Abbotsford.
Shore, J., Kaitangata.
Shore, T., Orepuki.
*Shore, W. M., Kaitangata.
*Smart, W., Christchurch.
Smith, A. E., Nelson.
Smith, T. F., Nelson.
Sneddon, J., Mosgiel.
Swinbanks, J., Kawakawa.
Taylor, E. B., Huntly.
Thompson, A., White Cliffs.
Walker, J., Collingwood.
Williams, W. H., Shag Point.

First-class Certificates issued after Examination under the Coal-mines Acts, 1886 and 1891.

Armitage, F. W., Auckland.
Armstrong, J., Brunnerton.
Barclay, T., Kaitangata.
Barclay, W., Kaitangata.
Bennie, Boyd, Waihi.
Campbell, Peter, Fairfield.
Carruthers, J., Shag Point.
Carson, W., Kaitangata.
Coombe, J., Waihi.
Coulthard, J., Taylorville.
Dixon, C. W., Granity.
Dixon, W., jun., Kaitangata.
Duggan, George, Burnett's Face.
Dunn, Andrew, Denniston.
Dunn, W., Brunnerton.
Dunn, W. R., Thames.
Elliott, R., jun., Denniston.
Fleming, J., Kaitangata.
Fletcher, James, Granity.
Fry, Sydney, Waimangaroa.
Gibson, John, Westport.
Gillanders, A., Shag Point.
Gowans, W., Millerton.
Green, E. R., Abbotsford.
Green, J., Brunnerton.
Herd, J., Brunnerton.
Hill, Robert, Abbotsford.
Hosking, G. F., Auckland.
*Hughes, D., Preservation Inlet.
Jebson, D., Canterbury.
Johnson, W. P., Thames.
Leitch, J., Blackball.
Leitch, W., Blackball.
Marshall, A. G., Denniston.
McCaffrey, Patrick, Ferntown.
McCormack, W., Denniston.
McEwan, Robert, Coromandel.
McGeachie, J., Mokau.
Milligan, N., Westport.
Morgan, Wm., Waihi.
Murray, T., Westport.
*Newsome, F., Denniston.
Newton, James, Brunnerton.
Shore, Joseph, Kaitangata.
Smith, George, Fairfield.
Sowerby, H., Denniston.
Tattley, E. W., Huntly.
Tattley, F. J., Mercer.
Taylor, A. H., Waikato.
Turner, G. F., Shag Point.
Westfield, C. H., Fairfield.
Young, James H., Waimangaroa.

Mine-managers' Certificates, issued on Production of English Certificate, under "The Coal-mines Act, 1886."

Binns, G. J., Dunedin.
Black, T. H., Waipori.
Broome, G. H., Ngakawau.
Cater, T., Auckland.
Cochrane, N. D., Dunedin.
*Garrett, J. H., Auckland.
Hayes, J., Kaitangata.
Hodgson, J. W., Ross.
*Lindop, A. B., Springfield.
Macalister, J., Invercargill.
*Nimmo, J., Oamaru.
*Straw, M., Westport.
Tattley, W., Auckland.

First-class Mine-managers' Certificates, issued to Inspectors of Mines by virtue of Office, under the Coal-mines Acts of 1886 and 1891.

Coutts, J., Thames.
Gordon, H. A., Wellington.
*Gow, J., Dunedin.
McLaren, J. M., Thames.
*Wilson, G., Thames.

Mine-managers' Certificates, issued on Production of Certificate from a recognised Authority outside the Colony, under "The Coal-mines Act, 1891."

Alison, R., Greymouth.
Dixon, J., Westport.
Fletcher, George, Westport.
Frame, Joseph, Kaitangata.
Goold, A. L., Auckland.
Irvine, James, Dunedin.
*Jordan, R. S., Kaitangata.
Kirkwood, D., Coromandel.
Lewis, W., Blackball.
Pollock, James, Green Island, Otago.
*Proud, Joseph, Wanganui.
Scott, Joseph, Ngahere.
Tennent, R., Brunnerton.
Twining, C. E., Dunedin.
Wight, E. S., Auckland.
Wood, William, Mokihinui.

SECOND-CLASS MINE-MANAGERS' SERVICE CERTIFICATES.

Issued under "The Coal-mines Act, 1905."

Carson, M., Kaitangata.
Collier, Levi, Kamo.
Clarke, Edward, Shag Point.
Elliot, Joseph, Coal Creek.
Harris, John, Denniston.
Herd, Joseph, Brunnerton.
Howie, James, Kaitangata.
Leeming, William, White Cliffs.
Lennox, W., Springfield.
Lobb, Joseph, Mokau.
Longstaff, H. C., Kaitangata.
Love, Alexander, Orepuki.
McCall, John, Wellington.
McGeachie, J., jun., Mokau.
McIntosh, Allan, Shag Point.
McLaren, J. M., Thames.
Marshall, J., Ngakawau.
Murray, Thomas, Denniston.
*Nimmo, George Stewart, Ngapara.
Radcliffe, William, Reefton.
*Roberts, John, Brunnerton.
*Ross, John, Kawakawa.
Sara, James, Reefton.
Smith, Charles, Whangarei.
Thomas, James, Springfield.
Wallace, William, Huntly.
Willetts, John, Papakaio.
*Willetts, John Morris, Papakaio.
Young, William, Waimangaroa.

Second-class Certificates issued after Examination under the Coal-mines Acts, 1886, 1891, and 1905.

Austin, W. B., Sheffield.
Barber, John, Shag Point.
Barclay, T., Kaitangata.
Barclay, T., jun., Kaitangata.
Barclay, Wm., Kaitangata.
Barnes, A. E., Shag Point.
Brown, Robert, Kaitangata.
Cadman, J., Hikurangi.
Campbell, Peter, Fairfield.
Charles, E., Glentunnel.
Cherrie, R. C., Mokau.
Christie, James, Saddle Hill.
Clemo, G., Whangarei.
Craig, John, Coal Creek Flat.
Dale, E. G., Kaitangata.
Dixon, W., jun., Kaitangata.
Doel, G., Lovell's Flat.
Duncan, James, Kaitangata.
Duncan, J. E., Kaitangata.
Duncan, John, Lovell's Flat.
Fox, R. A., Blackball.
Harris, A., Saddle Hill.
Hill, R., Abbotsford.
Hodson, John, Kaitangata.
Hunter, A., Southland.
Lindsay, J. B., Orepuki.
McAlister, Neil, Kaitangata.
McLelland, J., Kaitangata.
McLelland, A. C., Kaitangata.
McNeill, D., Fairfield.
Neilson, Moffat, Abbotsford.
Olivie, W. W., Saddle Hill.
Orr, Hugh, Fairfield.
Parcell, W., jun., Bannockburn.
Penman, C. P., Kaitangata.
Price, F. J., Burnett's Face.
Snow, T., Mercer.
Tattley, F. J., Mercer.
Taylor, Joseph, Collingwood.
Waldie, A. B., Mokau.
Westfield, C., Fairfield, Otago.
Whitleston, A. W., Shag Point.

* Deceased since issue of certificates.

APPENDIX III.

STATISTICS of WORKINGS in COAL-MINES, 1905.

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 1905.			Approximate Total Output to 31st December, 1904.	Approximate Total Output to 31st December, 1905.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
NORTH ISLAND.																										
													Tons.	Tons.	Tons.	Tons.	Tons.									
KAWAKAWA DISTRICT.																										
Kawakawa Company (*stopped*) ..	..	..	semi-bitum.	..	..	..	..	..	..	..	..	..	..	..	..	794,865	794,865	..	..	..	..	..	..	..	..	..
Kawakawa Mine	Culley, W. (permit)	7	ditto	1	5′	5′	1 in 7	bord and pillar	1	6′ x 4′	200′	adit	1,674	..	1,674	69,924	71,598	1	4	5	horse	..	..	..	natural	30/9/05
HIKURANGI DISTRICT.																										
Hikurangi Coal Company ..	Moody, T. P. ..	13	"	1	7′ to 10′	8′	1 in 6	ditto	3	6′ x 5′	264′	"	50,410	..	50,410	360,594	411,004	7	54	61	steam	10″	8″	50′	"	28/9/05
Northern Coal Company ..	Dunn, W. R. ..	8	"	1	6′ to 7′	6′ to 7′	1 in 10	"	1	6′ x 6′	1,320′	"	37,733	..	37,733	101,029	138,762	20	40	60	horse	..	..	..	"	28/9/05
Waro Co-operative Coal Company (late Phœnix and West Bryan's)	Kerr, George ..	17	"	1	8′	8′	1 in 8	"	1	7′ x 6′	260′	"	5,041	..	5,041	74,330	79,371	3	10	13	steam	6″	4″	40′	"	27/9/05
Walton and Graham's ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,210	1,210	..	..	..	..	..	..	..	..	..
WHANGAREI DISTRICT.																										
Kamo (*stopped*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	225,037	225,037	..	..	..	..	..	..	..	..	..
Whauwhau (*stopped*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70,853	70,853	..	..	..	..	..	..	..	..	..
New Kamo (*stopped*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9,373	9,373	..	..	..	..	..	..	..	..	..
NGUNGURU DISTRICT.																										
Ngunguru Mine	Taylor, A. H. ..	13	semi-bitum.	1	2′ to 4′	2′ to 4′	1 in 9	bord and pillar	3	4′ x 4′ 3′ x 3′ 6′ x 6′	35′ 20′ 920′	adit	10,871	..	10,871	183,135	194,006	4	18	22	steam	..	..	..	natural	29/9/05
Panipo (Kiripaka)	Clemo, George ..	6½	ditto	1	3′ to 18′	3′ to 18′	1 in 6	ditto	1	7′ x 5′	396′	"	8,720	..	8,720	67,606	76,326	3	11	14	"	7″	5″	40′	"	29/9/05
WAIKATO DISTRICT.																										
Waikato Mine (*stopped*) ..	Wight, E. S. ..	..	brown	..	..	..	..	..	..	..	..	..	..	..	..	209,089	209,089	..	..	..	..	..	..	..	..	..
Taupiri Extended	"	17½	"	1	10′ to 30′	10′ to 20′	1 in 10	bord and pillar	2	10′ 7′	166′ 209′	shaft	16,267	4,151	20,418	694,201	714,619	15	57	72	steam	24″ 12″	10″ 5″	166′ 210′	fan	18/10/05
Taupiri Reserve	"	18½	"	1	10′ to 24′	10′ to 18′	1 in 8	ditto	1	8′ x 6′	50′	adit	13,155	2,242	15,397	295,328	310,725	5	15	20	"	12″	7″ (2)	220′	steam exha'st	18/10/05
Ralph's Taupiri	"	15½	"	1	10′ to 50′	10′ to 20′	1 in 10	"	2	8′ 6″ dia. 9′ 6″ x 5′	145′ 190′	shaft	65,675	17,122	82,797	301,810	384,607	25	137	162	"	24″ 12″	7″ 6″	190′ 260′	fan	17/10/05
Ralph's (*stopped*)	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23,019	23,019	..	..	..	..	..	..	..	..	..
Taupiri South (Harrison's) ..	Morgan, William	3½	brown	1	18′ to 24′	12′	1 in 7	bord and pillar	2	7′ x 6′ 6′ x 6′	300′ 184′	adit	6,705	..	6,705	10,837	17,542	9	24	33	horse	..	..	..	natural	17/10/05

MOKAU DISTRICT.																										
Mangapapa Mine	Lennox, William	21	brown	1	6′ to 8′	6′ to 8′	1 in 10	bord and pillar	1	9′ x 6′	1,200′	adit	3,753	..	3,753	40,002	43,755	2	11	13	horse	..	..	..	furnace	26/8/05
Fernside (*stopped*) ..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	3,265½	3,265½	..	..	..	..	..	..	..	..	..
Co-operative (*stopped*) ..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	940	940	..	..	..	..	..	..	..	..	..
MIRANDA DISTRICT.																										
Miranda (*stopped*)	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	20,668	20,668	..	..	..	..	..	..	..	..	..
Union Collieries	Tattley, F. J. ..	5	brown	1	55′	20′ to 24′	1 in 6	bord and pillar	2	4′ x 4′ 6′ x 6′	90′ 300′	adit	15,994	..	15,994	25,835	41,829	13	16	29	steam	12″ 6″	6″ 5″	90′	steam-exhaust	20/10/05
DRURY DISTRICT.																										
Drury Mine	McEwen, R. ..	1	„	1	6′	6′	1 in 6	ditto	2	4′ x 4′ 6′ x 5′	20′ 500′	„	363	..	363	..	363	5	8	13	manual	..	..	..	natural	25/9/04
Bombay (*stopped*)	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	81½	81½	..	..	..	..	..	..	..	..	..
Totals North Island	..	..	..	..	..	..	..	..	..	..	..	..	236,361	23,515	259,876	3,583,032	3,842,908	112	405	517						

MIDDLE ISLAND.

NELSON.																										
Enner Glynn (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,337	1,337	..	..	..	..	..	..	..	..	..
COLLINGWOOD.																										
Pakawau	McCaffrey, P. ..	*	bitum.	1	3′	3′	1 in 3½	longwall	..	7′ x 6′		adit	395	86	481	4,873	5,354	7	8	15	steam	water-tank			natural	20/11/05
Puponga	Walker, James ..	4	„	1	7′ to 8′	7′ to 8′	1 in 4	bord and pillar	..	9′ 6′ 6″	00′	engine plane	15,007	5,150	20,157	14,532	34,689	25	51	76	„	8″	4½″	200′	fan	20/11/05
Wallsend (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47,413	47,413	..	..	..	..	..	..	..	..	..
TAKAKA.																										
Terakohi (Motupipi) ..	Nalder, T. W. ..	1	brown	1	4′	4′	1 in 9	driving	..	6′ x 6′	300′	adit	60	.	60	..	60	1	3	4	manual	..	..	..	natural	22/11/05
Golden Bay (Motupipi) ..	McFarlane, Robert	1	„	1	4′	′	1 in 12	„	2†	air shafts 6′ x 4′ tunnel 8′ x 6′	shafts 24′ tunnel 50′	„	65	15	80	..	80	2	4	6	„	..	..	..	„	22/11/05
Takaka (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	70	..	..	..	..	..	..	..	..	..
Motupipi (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	130	130	..	..	..	..	..	..	..	..	..
WESTPORT.																										
Mokihinui Co-operative Coal-mine‡	..	..	..	..	..	..	..	..	..	..	..	..	1,146	..	1,146	83,167	84,313	..	..	..	..	..	..	..	..	..
Seddonville State Colliery ..	Murray, Thomas	2	bitum.	1	12′	8′	variable	bord and pillar	1	shaft 6′ x 12′ tunnel 7′ x 10′	shaft 150′ tunnel 134 ch.	adit	46,085	..	46,085	35,945	82,030	22	86	108	endless rope	..	..	..	fan	13/11/05
Millerton, Granity	Dunn, William ..	14	„	1	4′ to 40′	approx. 12′	„	ditto	§3	10′ x 6′ 10′ x 6′ 11′ x 7′	33 ch. 45 ch. 19 ch.	endless rope	202,675	36,544	239,219	1,533,486	1,772,705	76	231	307	gravita'n	natural	drainage		1 Hayes exhaust-fan and 1 Schiele exhaust-fan	23/12/05

* Three months under present ownership. † For air. ‡ Ceased operations after working first six months in year. § Tunnels.

STATISTICS of WORKINGS in COAL-MINES, 1905—*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. Size of Shaft or Adit.	Dimensions of Shafts. Depth of Shaft or Length of Adit.	Output delivered by	Output for 1905. Coal.	Output for 1905. Slack.	Output for 1905. Total.	Approximate Total Output to 31st December, 1904.	Approximate Total Output to 31st December, 1905.	Number of Men ordinarily employed. Above.	Below.	Total.	Power used for drawing Mineral.	Pumps. Stroke.	Pumps. Size of Barrel.	Pumps. Height of Column.	Means of Ventilation.	Date of Inspector's Last Visit.
MIDDLE ISLAND—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
WESTPORT—*continued.*																										
Coalbrookdale, Denniston ..	Green, John ..	25	bitum.	2	4′ to 18′	all	variable	bord and pillar	2*	8′ x 8′ 9′ x 5′	8,146′ 2,640′	endless rope	211,868	49,144	261,012	3,848,188	4,109,200	46	195	241	steam	6″ 8″	3″ 4″	40′ 40′	1 Schiele fan and 1 Hayes fan	19/12/05
Ironbridge, Denniston ..	Sowerby, H. ..	14	„	2	6′ to 20′	„	„	„	2*	8′ x 6′	9,050′	„						45	161	206	„	10″	5″	15′	Schiele fan	20/12/05
Westport Cardiff (*not at work*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	227,441	227,441	..	..	..	..	..	..	..	..	..
BULLER ROAD.																										
White Cliffs	Chapman, S. ..	10	brown	1	18′	9′	1 in 4	bord and pillar	..	10′x ′	250′	adit	692	..	692	2,041	2,733	1	1	2	manual	..	..	..	natural	..
Rocklands	Walker, George ..	5	„	1	15′	8′	1 in 6	ditto	2*	8′ x 8′	5 ch. 6½ ch.	„	351	..	351	5,452	5,803	..	1	1	„	..	..	..	„	..
Waitakere (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	868	868	..	..	..	..	..	..	..	..	..
THREE-CHANNEL FLAT.																										
Flaxbush	Morganti, Carli ..	5	brown	2	4′ and 2′	4′ and 1½′	1 in 1	stoping	..	6′ x 5′	900′	adit	1,249	..	1,249	2,829	4,078	..	3	3	manual	..	..	.	natural	17/10/05
Longford (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,830	1,830	..	..	..	..	..	..	..	„	..
Alexander (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	282	282	..	..	..	..	..	..	..	„	..
Cocksparrow (*not at work*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	959	959	..	..	..	..	..	..	..	„	..
BOATMAN'S.																										
Archer's Mine	Archer, F. W. ..	..	bitum.	2	9′ to 11′‡ 9′ to 14′‡	9′	1	bord and pillar	..	6′ x 6′	No. 1, 600′ No. 2, 240′	adit	1,853	..	1,853	7,088	8,941	..	3	3	manual	..	..	..	„	11/12/05
Coghlan's Mine	Coghlan, J. ..	..	„	1	12′	8′ 6″	1 in 3	ditto	..	6′ x 4′	300′	„	63	155	218	1,390	1,608	1	1	2	„	..	..	..	„	11/12/05
REEFTON.																										
Burke's Creek	Cairns, Robert ..	4	brown	1	12′ to 14′	10′	1 in 6	„	..	7′ x 8′	No. 1, 500′ No. 2, 260′ No. 3, 160′ No. 4, 60′	„	166	..	166	5,661	5,827	1	2	3	horse	..	..	..	„	10/10/05
Murray Creek	Morris, J. H. ..	26	bitum.	1	12′	all	variable	open face	..	8′ x 8′	2 ch.	..	240	1,658	1,898	16,407	18,305	2	..	2	..	..	..	..	..	12/12/05
Phœnix and Venus, Murray Creek	Knight, John ..	24	„	2	15′	8′	1 in 1	bord and pillar	..	4′ 6″ x 6′ 6″	200′	adit	1,038	200	1,238	20,360	21,598	2	5	7	manual	..	..	..	natural	12/12/05
Progress	Cochrane, Thomas	8	pitch	1	5′	5′	28°	stall and pillar	..	8′ x 5′	760′	level adit	2,867	..	2,867	18,323	21,190	1	7	8	„	..	..	..	„	12/12/05
Lankey's Creek	Pascoe, Simon ..	2½	semi-bitum.	1	7′	6′	1 in 25	bord and pillar	..	6′ x 4′	600′	adit	563	..	563	8,655	9,218	..	2	2	„	..	..	..	„	12/12/05

Reefton	Blackadder, D. ..	3	..	1	12′	10′	1 in 3½	..	..	6′ x 4′	800′	adit	228	..	228	1,018	1,246	..	3	3	manual	..	..	..	natural	..
Waitahu	Stokes, William ..	3	semi-bitum.	2	6′ and 8′	7′	1 in 1	bord and pillar	..	8′ x 6′	500′	„	431	39	470	..	470	..	1	1	„	..	..	..	„	12/12/05
Loughnan's Mine	Loughnan, Stephen	3	ditto	1	6′	6′	1 in 25	ditto	..	6′ x 5′	200′	„	314	..	314	..	314	1	1	2	„	..	..	..	„	19/12/05
Burke's Creek	Lockington, S. ..	4½	brown	1	10′	6′	1 in 4	„	..	6′ x 5′	128′	„	128	..	128	..	128	..	2	2	„	..	..	..	„	11/12/05
Mines not at work.																										
Barr's Mine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	35	35	..	..	..	..	..	..	..	..	..
Loughnan's Mine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,713	1,713	..	..	..	..	..	..	..	..	..
Devil's Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	..	..	..	..	..	..	..	..	..
Golden Treasure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,625	6,625	..	..	..	..	..	..	..	..	..
Cochrane's Mine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	370	370	..	..	..	..	..	..	..	..	..
New Scotia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	62	62	..	..	..	..	..	..	..	..	..
Sir Francis Drake	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,173	2,173	..	..	..	..	..	..	..	..	..
Cumberland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,070	1,070	..	..	..	..	..	..	..	..	..
Coal Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	67	67	..	..	..	..	..	..	..	..	..
New Inkerman	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,105	6,105	..	..	..	..	..	..	..	..	..
GREYMOUTH.																										
Blackball	Leitch, Walter ..	15	bitum.	2	17′	15′	1 in 5	bord and pillar	2*	9′ x 6′ 10′ x 7′	1,232′ 600′	adits	53,614	11,099	64,713	709,789	774,502	30	70	100	steam	..	..	..	fan	8/12/05
Brunner, Brunnerton ..	Coulthard, J. ..	41	„	1	10′ to 12′	all	1 in 4	ditto	..	10′ x 7′	300′	„	21,637	13,539	35,176	2,110,379	2,145,555	17	33	50	horse	..	..	..	natural	7/12/05
Tyneside, Brunnerton ..	Armstrong, James	23	„	1	12′	12′	1 in 4	„	1	10′ diameter	103′	shaft	31,234	12,813	44,047	74,299	118,346	26	62	88	steam	10″ 12″ 4″	5¼″ 7″ 6″	180′ 160′ 100′	fan	7/12/05
Point Elizabeth State Colliery	Herd, Joseph (mine manager); Bishop, James (general manager)	1½	„	1	8′	8′	1 in 4	„	2*	10′ x 7′	No. 1 242 yd. No. 2 264 yd.	endless rope	131,816	..	131,816	60,255	192,071	53	206	259	„	..	..	..	fan	5/12/05
Mines not at work.																										
Coal-pit Heath	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	577,190	577,190	..	..	..	..	..	..	..	..	..
Wallsend	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	205,539	205,539	..	..	..	..	..	..	..	..	..
CANTERBURY.																										
Springfield, Springfield ..	Taylor, James ..	29	brown	1	3′ 3″	all	1 in 6	bord and pillar	2	6′ 6″ x 4′	70′	shaft	110	..	110	89,635	89,745	1	4	5	steam	direct st	acti eam	ng	exhaust steam from pump	26/4/05
Victoria, Springfield ..	Cloudesley, W. J.	5	„	1	4′	„	1 in 6	longwall	1	4′ 6″ x 3′	50′	adit	..	..	..	455	455	..	1	1	horse	..	..	..	natural	26/4/05
Homebush, Glentunnel ..	Campbell, J. C. ..	33	„	2	6′ and 7′	„	1 in 3	bord and pillar	..	6′ x 6′	40 ch.	tunnel	13,298	2,117	15,415	167,361	182,776	5	44	49	horse & steam	..	..	..	furnace	13/12/05
St. Helen's, White Cliffs ..	Levick, H. ..	24	„	4	8′ 4′ 6″ 3′	„	1 in 3	pillar, stope, and wall	1	4′ 6″ x 3′ 7″	90′ 5 ch.	adit	768	..	768	13,087	13,855	..	3	3	hand	..	..	..	natural	27/4/05
Woolshed Creek, Mount Somers	Harris, Thomas (permit); Doak, W. T. (secretary)	41	„	1	40′	15′	1 in 9	bord and pillar	..	..	..	„	1,072	2,752	3,824	45,312	49,136	..	5	5	horse	..	..	..	„	14/12/05
Mount Somers, Mount Somers	Neilson, M. ..	4	„	1	24′	10′	south 1 in 4½	ditto	1	5′ x 4′	25′	„	2,753	1,011	3,764	12,888	16,652	3	5	8	„	..	..	..	„	14/12/05
McLimont's, Mount Somers	McLimont, W. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14/12/05
Taylor's Stream Lime and Coal Company, Staveley	McFarlane, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13/12/05
Albury, Albury	Willetts, J. M. ..	14	brown	1	22′	..	1 in 1	bord and pillar	1	4′ x 3′ 6″	68′	adit	851	..	851	6,277	7,128	2	2	4	horse	..	..	..	natural	5/11/05

* Tunnels. † Top seam. ‡ Bottom seam.

STATISTICS of WORKINGS in COAL-MINES, 1905—*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 1905.			Approximate Total Output to 31st December, 1904.	Approximate Total Output to 31st December, 1905.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
MIDDLE ISLAND—*continued*.																										
CANTERBURY—*continued*.													Tons.	Tons.	Tons.	Tons.	Tons.									
Waihao Forks, Waihao Forks	Lomas, G. (m'ger), Preece, J. (owner), Christchurch;	13	lignite	1	6′	5′	..	bord and pillar	..	5′ x 4′	100′	adit	527	..	527	621	1,148	1	2	3	horse	..	..	..	natural	14/12/05
Waihao, Waihao Forks ..	Grant, W. (owner), Timaru	16	"	1	14′	all	..	ditto	..	5′ x 4′	260′		..	..	..	2,032	2,032	..	..	..	hand	..	..	..	"	14/12/05
Elephant Hill, Waihao Downs	Mathias, L. ..	37	brown	1	10′	8′	..	"	..	6′ x 5′	..	"	70	..	70	407	477	..	1	1	"	..	..	..	"	..
Private Pits.																										
Dalethorpe, Springfield ..	Campbell, P. ..	11	"	1	6′	all	..	..	..	..	..	..	38	..	38	305	343	..	..	..	..	..	..	..	..	..
Snowdon, Rakaia Gorge ..	Gerard, George ..	20	"	1	14′	8′	1 in 3	narrow	1	4′ x 4′	90′	shaft	40	..	40	1,768	1,808	..	..	..	hand	..	..	..	natural	..
Craigieburn, West Coast Road	Manson, D. ..	9	"	1	..	..	..	open	..	..	..	open	35	..	35	239	274	..	..	..	..	..	..	..	..	..
Springburn Lime Company, Staveley	Thompson, A.; Scott, R. L. (secretary), Ch'stch'ch	5	"	1	5′	all	vertical	levels	..	5′ x 4′	150 yd.	adit	196	..	196	705	901	..	..	..	..	..	..	..	natural	15/12/05
Pits not at work.																										
Brockley, Glenroy ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	304	304	..	..	..	..	..	..	..	..	..
McKenzie's, Castle Hill ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..
Wairiri, South Malvern ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,213	1,213	..	..	..	..	..	..	..	..	..
Acheron, Lake Coleridge ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	503	503	..	..	..	..	..	..	..	..	..
Kowai Pass, Springfield ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	559	559	..	..	..	..	..	..	..	..	..
Glenroy, South Malvern ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	115	115	..	..	..	..	..	..	..	..	..
White Cliffs, South Malvern	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33,051	33,051	..	..	..	..	..	..	..	..	..
Duke's (Park Gate) Kakahu	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	916	916	..	..	..	..	..	..	..	..	..
Spring Vale, Fairlie Creek ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	200	200	..	..	..	..	..	..	..	..	..
Mount Hutt, Rakaia Gorge ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	155	155	..	..	..	..	..	..	..	..	..
Sheffield, Sheffield	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52,284	52,284	..	..	..	..	..	..	..	..	..
Hartley, White Cliffs ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,991	1,991	..	..	..	..	..	..	..	..	..
Campbell's, Springfield ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	110	110	..	..	..	..	..	..	..	..	..
NORTH OTAGO.																										
Dalgety, Hakataramea ..	Drysdale, J. ..	24	brown	1	12′	all	..	bord and pillar	..	..	..	adit	50	..	50	2,327	2,377	..	1	1	..	..	..	..	natural	..
Wharekuri, Wharekuri ..	Shanks, A. ..	..	"	1	40′	13′	vertical	levels	..	..	..	"	211	..	211	1,817	2,028	..	2	2	..	..	..	..	"	1/11/05
Awakino, Kurow	Orr, George ..	26	"	1	15′	7′	"	stoping	1	6′ x 2′ 6″	53′	"	62	..	62	5,726	5,788	1	1	2	..	..	..	..	"	2/11/05
Kurow, Kurow	Cairns, W. B. ..	35	"	1	irregular	..	1 in 2½	narrow	1	4′ x 3′	80′	dip incl.	..	..	..	11,395	11,395	..	..	..	..	..	..	..	"	2/11/05
Phillips, Kurow	Phillips, James ..	9	"	1	indefinite	30′	vertical	stoping	1	8′ x 6′	50′	dip-drive	404	..	404	1,985	2,389	..	1	1	horse	..	..	..	"	2/11/05
Otiake, Otiake	Cunningham, W., c/o Reid & Gray, Oamaru (owner)	4	"	1	18′	12′	"	..	..	6′ x 5′	200′	adit	2	..	2	254	256	..	..	..	..	..	..	..	"	..

St. Andrew's, Papakaio ..	Nimmo, T. ..	27	brown	1	6′ 6″	6′	1 in 4	bord and pillar	1	4′ x 2′ 6″	60′	adit	1,462	..	1,462	35,030	36,492	1	4	5	horse	..	..	..	furnace	31/10/05
Prince Alfred, Papakaio ..	Willetts, G. H. (permit)	36	„	1	1′ to 9′	all	1 in 9	ditto	1	5½′ x 6′	51′	„	1,318	..	1,318	49,197	50,515	1	3	4	„	..	..	..	natural	31/10/05
Ngapara, Ngapara	Nimmo, W. ..	27	„	1	18′ to 25′	8′	1 in 17	„	1	4′ x 4′	50′	„	1,007	..	1,007	20,994	22,001	1	2	3	„	..	..	..	„	31/10/05
Shag Point, Shag Point ..	Hunt, William ..	35	pitch	..	2′ 6″	all	..	„	..	..	..	„	436	229	665	403,226	403,891	1	5	6	hand	..	..	..	„	5/10/05
Kartigi, Kartigi	Twining, C. E. ..	2	„	..	..	..	..	..	..	..	..	..	7	..	7	52	59	..	1	1	..	..	..	..	..	..
Allandale, Shag Point ..	Westfield, C. H...	18	„	3	4′ to 6′	all	1 in 4	bord and pillar & longwall	2	10′ x 6′ 8′ x 4′	1,000′ 280′	incline tunnel	12,794	6,739	19,533	232,074	251,607	11	65	76	..	..	..	..	..	5/10/05
Pits not at work.																									
Wharekuri (Collins), Kurow..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,424	1,424	..	..	..	..	..	..	..	..	..
Rosebery, Otepopo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,424	1,424	..	..	..	..	..	..	..	..	..
Earlybank	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	281	281	..	..	..	..	..	..	..	..	..
SOUTH OTAGO.																									
Fernhill, Abbotsford ..	Gray, J. ..	28	brown	1	19′	10′	1 in 10	bord and pillar	1	4¾′x 4½′	50′	adit	338	1,091	1,429	140,967	142,396	5	5	10	horse	..	..	..	natural	10/2/05
Freeman's, Abbotsford ..	Hill, R. ..	25	„	2	7′ to 14′	6′ to 7′	1 in 7	ditto	3	6′ x 5′ 7′ x 7′	1,400′ 264′	inclined drive & engine plant	19,121	2,164	21,285	296,058	317,343	8	31	39	steam & horse	12″	5″	130′	furnace	5/12/05
Jubilee, Walton Park ..	Campbell, P. ..	8	„	1	12′ to 18′	8′	1 in 10	„	2	6′ x 5′	4 ch.	adit	13,948	2,980	16,928	69,175	86,103	4	22	26	ditto	..	..	..	„	20/12/05
Saddle Hill (No. 1), Saddle Hill	Christie, W. H. L.	33	„	1	20′	8′ to 16′	1 in 10	„	4	5′ 10″ x 4′ 6″	264′	inclined drive	3,732	5,615	9,347	142,112	151,459	3	14	17	„	..	..	..	natural	20/12/05
Saddle Hill (No. 2), Saddle Hill	Christie, James ..	4	„	..	..	..	1 in 14	„	..	..	..	adit	8,169	10,078	18,247	22,446	40,693	5	18	23	„	..	..	..	furnace	20/12/05
Burnweil, Saddle Hill ..	Harris, A. ..	14	„	1	20′	10′	variable	„	1	5′ x 3′	30′	incline	1,304	..	1,304	26,840	28,144	1	2	3	horse	..	..	..	natural	20/12/05
Glenochiel, Saddle Hill ..	Harris, A. ..	24	„	1	16′	7′ to 9′	1 in 9	„	3	6′ x 4′	4 ch.	tunnel	7	..	7	29,166	29,173	..	1	1	„	..	..	..	„	20/12/05
Brighton, Brighton ..	McColl, D. L. ..	17	„	1	6′	5′ 6″	variable	„	..	..	..	„	229	..	229	1,784	2,013	1	1	2	„	..	..	..	„	9/2/05
Lauriston, Brighton ..	Walker, James ..	19	„	1	6′	5′ 6″	„	„	1	..	48′	„	219	57	276	6,238	6,514	1	2	3	„	..	..	..	„	9/2/05
Mosgiel, Mosgiel	Orr, H. ..	21	„	1	8′	7′	1 in 10	„	2	4′ x 4′	14 ch.	„	589	551	1,140	96,013	97,153	2	4	6	..	..	..	..	..	21/12/05
Ferndale, Taieri Mouth ..	Fairbairn, R. ..	22	„	1	10′	8′	..	„	..	10′ x 8′	100′	„	140	..	140	562	702	..	1	1	hand	..	..	..	natural	14/2/05
Bruce, Milton	Young, A. ..	38	„	1	15′	9′	1 in 8	„	..	..	..	adit	..	..	..	24,314	24,314	..	..	..	„	..	..	..	„	26/10/05
Real Mackay, Milton ..	(Lovell's Flat Coal Co.) Carruthers, James	1	„	..	..	..	..	„	..	..	..	..	2,066	405	2,471	..	2,471	8	13	21	..	..	..	..	..	26/10/05
Akatore, Milton	Reid, James ..	11	„	1	14′	all	..	„	..	..	..	adit	60	..	60	448	508	..	1	1	hand	..	..	..	natural	22/5/05
Fortification, Milton ..	Frame, Joseph (Bruce Railway and Coal Company, owners)	8	„	1	7′ o l	5′ to 7′ 6″	1 in 12	„	2	7′ x 6′ 6′ x 6′	4½ ch. 11½ ch.	incline tunnel	2,020	288	2,308	38,950	41,258	1	5	6	steam	..	..	..	exhaust steam from pump	26/10/05
Glenledi, Milton	Ditto	5	„	1	22′	all	1 in 8	open and bord and pillar	..	..	..	open and adit	1,250	240	1,490	2,753	4,243	1	3	4	hand	..	..	..	natural	26/10/05
Bruce Railway and Coal Company, Milton	Frame, Joseph ..	1	„	..	..	..	..	bord and pillar	..	..	..	..	3,754	..	3,754	..	3,754	3	9	12	..	..	..	..	..	26/10/05
Riverside Milton	Thomas, J. W. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22/5/05
Wallsend, Lovell's Flat ..	Hewitson, R. ..	35	lignite	1	20′	all	..	open	..	..	..	open	76	..	76	11,281	11,357	2	..	2	hand	..	..	..	..	..
Lovell's Flat, Lovell's Flat (*abandoned*)	Carruthers, James	11	brown	1	5′ to 10′	5′ to 7′	1 in 4	bord and pillar	1 1	1′ x 5′ 5 x 4	470′ 360′	shaft	5,986	3,097	9,083	92,985	102,068	17	19	36	steam	16″	6″	480′	furnace	/8/05
Benhar, Stirling	McSkimming, P.	42	lignite	3	30′ in aggregate	12′	..	ditto	..	4′ x 4′	..	incline	2,481	654	3,135	108,397	111,532	1	4	5	„	steam-driven	..	..	natural	4/7/05
Mount Wallace, Stirling ..	Walls, James ..	11	„	1	14′	8′ to 10′	..	„	..	..	..	adit	597	196	793	5,059	5,852	..	3	3	horse	..	..	..	„	28/6/05
Taratu, Taratu	Shore, T. ..	4	brown	1	20′	8′ to 14′	1 in 10	„	..	6′ x 6′	5 ch.	„	15,850	2,339	18,189	38,184	56,373	12	33	45	..	..	..	..	..	27/10/05

Statistics of Workings in Coal-mines, 1905—*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 1905.			Approximate Total Output to 31st December, 1904.	Approximate Total Output to 31st December, 1905.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
MIDDLE ISLAND—*continued.*																										
South Otago—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
Kaitangata and Castle Hill, Kaitangata	Barclay, T.; Carson, W. (N.Z. Coal and Oil Co., O. G. Lockhart, sec.)	29	brown	3	50′ in aggregate	all	1 in 1½ to 1 in 4	bord and pillar	..	9′ x 7′ 6′ diam.	51 ch. 360′	inclined	77977	41,767	119,744	1,882,983	2,002,727	67	337	404	steam & compressed air	2′ 6″ three	6″ e-th row	280′	fan	30/11/05
		12	″	4	50′ in aggregate	″	1 in 1½ to 1 in 4	ditto	..	11′ x 6′ 6″ 9′ diam.	45 ch. 526′	″									ditto	ditto	6″ pumps	500′	furnace	16/8/05
Port Arthur, Kaitangata ..	Irvine, J. ..	1	″	..	..	..	..	..	..	..	..	..	69	..	69	..	69	1	1	2	..	..	..	..	..	..
Wangaloa, Kaitangata ..	Smith, J. ..	25	″	1	10′ 6′	8′	1 in 6	bord and pillar	..	..	..	adit	60	24	84	1,622	1,706	..	1	1	hand	..	..	..	natural	..
Mainholm, Waipahi ..	Lischner, W. ..	20	lignite	1	15′	all	..	open	..	..	..	open	3,260	..	3,260	39,272	42,532	3	..	3	horse	cent steam	rifu-driven	gal	..	19/5/05
Private Pits.																										
Drummuir, Brighton ..	Louden, — ..	1	brown	1	..	..	..	..	..	..	..	adit	14	..	14	26	40	..	..	..	..	..	..	..	..	..
Lakeside, Lovell's Flat ..	McGilvray, J. ..	5	″	1	..	..	..	..	..	..	..	..	15	..	15	831	846	..	..	..	..	..	..	..	..	..
Pits not at work.																										
Adam's Flat, Adam's Flat ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,253	2,253	..	..	..	..	..	..	..	..	..
Longridge, Kaitangata ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	133	133	..	..	..	..	..	..	..	..	..
Paskell's, Adam's Flat ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	476	476	..	..	..	..	..	..	..	..	..
Tuakitoto, Lovell's Flat ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,138	3,138	..	..	..	..	..	..	..	..	..
Walton Park, Walton Park ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	572,593	572,593	..	..	..	..	..	..	..	..	..
Riccarton, Riccarton ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,006	3,006	..	..	..	..	..	..	..	..	..
Strip-and-at-it, Milton ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	700	700	..	..	..	..	..	..	..	..	..
Paratu, Kaitangata ..	H. H. Fraser ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	220	220	..	..	..	..	..	..	..	..	..
Record, Kaitangata ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	414	414	..	..	..	..	..	..	..	..	..
Early Rise, Milton ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	15	..	..	..	..	..	..	..	..	..
Chain Hills, Abbotsford ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	842	842	..	..	..	..	..	..	..	..	..
Salisbury, Mosgiel ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,433	4,433	..	..	..	..	..	..	..	..	..
Bruce No. 2, Milton ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23,322	23,322	..	..	..	..	..	..	..	..	..
Rigfoot, Stirling	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,163	5,163	..	..	..	..	..	..	..	..	..
Morrison's, Stirling ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	646	646	..	..	..	..	..	..	..	..	..
Pomahaka, Pomahaka ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	20	..	..	..	..	..	..	..	..	..
Castle Hill No. 1, Kaitangata	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9,314	9,314	..	..	..	..	..	..	..	..	..
Crofthead, Kaitangata ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,713	6,713	..	..	..	..	..	..	..	..	..
Langridge, Kaitangata ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	693	693	..	..	..	..	..	..	..	..	..
Lesmahagow, Kaitangata ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,511	1,511	..	..	..	..	..	..	..	..	..
Cowpan's, Owaka	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	95	95	..	..	..	..	..	..	..	..	..
Shennan's, Waipahi ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	45	45	..	..	..	..	..	..	..	..	..
Early Bank, Milton ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	320	320	..	..	..	..	..	..	..	..	..

CENTRAL OTAGO.																									
Progress, Roxburgh ..	Bailey, James ..	8	lignite	1	..	all	..	open	..	..	..	open	5	..	5	516	521	1	..	1	horse	..	..	..	..	..
Coal Creek (leasehold)	Barber, J.	35	"	1	80′	"	..	"	..	..	..	"	2,576	..	2,576	34,490	39,400	5	..	5	"	..	..	..	..	29/9/05
Coal Creek (freehold), Coal Creek Flat	Barber, J.	4	"	1	..	..	..	bord and pillar	1	6′ x 7′	150′	adit	2,334	..	2,334			..	5	5	hand	..	..	..	natural	29/9/05
McPherson's, Coal Creek Flat	McPherson, M. ..	35	"	1	80′	30′ to 40′	1 in 6	open	..	..	..	open	3,951	..	3,951	35,209	39,160	5	..	5	horse	..	..	..	..	21/10/05
Perseverance, Coal Creek Flat	Craig, W. (permit)	18	"	1	99′	70′	1 in 4	bord and pillar	..	6′ x 7′	..	adit	4,141	..	4,141	29,302	33,443	1	6	7	Pelton wheel & winch	hyd jet	raulic pump	..	natural	21/10/05
Alexandra, Alexandra	Mathias & Co. (owners); Hunter, A. (manager)	25	brown	1	14′	7′	1 in 7	ditto	2	5′ x 2′ 6″ 6′ x 4′	60′	"	9,531	22	9,553	40,877	50,430	2	17	19	steam	Snow pump	..	..	furnace and natural	26/9/05
Undaunted, Alexandra		7	"	1	7′	6′	1 in 7	"	1	5′ x 2′ 6″	70′	shaft	..	..	..	3,159	3,159	..	..	..	horse	water-pump	bucket		natural	26/9/05
McQueenville, Alexandra ..	Howie, J. ..	2	"	1	undetermined	..	1 in 7	..	..	6′ x 5′	300′	incline drive	570	..	570	..	570	2	5	7	steam	water-box	..	..	fan	26/9/05
Alexandra Coal Company, Alexandra	Pollock, J. ..	7	"	1	28′	8′	..	bord and pillar	1	6′ x 4′	60′	shaft	8,423	536	8,959	50,315	59,273	5	18	23	" pu	three-th mp & S	row now	ram pump	steam-jet	25/9/05
Cambrian's, Cambrian's ..	Dungey, C. ..	21	lignite	1	9′	all	..	open	..	..	..	open	33	..	33	14,379	14,412	1	..	1	horse	..	..	..	..	22/9/05
Jones', Cambrian's ..	Jones, R. ..	1	"	1	..	..	..	"	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Welshman's Gully, Cambrian's	Hughes, O. ..	44	"	1	30′	all	..	"	..	..	..	"	386	..	386	31,812	32,198	1	..	1	horse	..	..	..	..	22/9/05
Blackstone Hill, Blackstone Hill	Armitage, James	39	"	1	unknown	16′	..	"	..	..	..	"	369	..	369	4,125	4,494	1	..	1	"	..	..	..	..	2/8/05
St. Bathan's, St. Bathan's ..	Enwright, J. ..	8	"	1	17′	all	..	"	..	..	..	"	278	..	278	3,060	3,338	2	..	2	"	..	..	..	..	23/9/05
Beck's Idaburn, Idaburn	Beck, William, Mrs. M. Beck (o)	19	"	1	35′	"	..	"	..	..	..	"	1,190	..	1,190	18,926	20,116	3	..	3	"	..	..	..	..	23/9/05
McLean's, Idaburn		..	"	1	15′	"	..	"	..	..	..	"	..	..	..	1,127	1,127	..	..	..	..	..	..	..	..	23/9/05
Idaburn, Idaburn ..	White, J. ..	35	"	1	20′	"	..	"	..	..	..	"	1,014	..	1,014	35,586	36,600	2	..	2	horse	..	..	..	..	23/9/05
Border, Rough Ridge ..	Roebuck, W., Oamaru*	35	"	1	12′	"	..	"	..	..	..	"	52	..	52	7,223	7,275	1	..	1	"	two D water-	ougl driven	as pu	mps,	23/9/05
Gimmerburn, Gimmerburn ..	Docherty, C. ..	40	"	1	12′	"	..	"	..	..	..	"	72	..	72	2,749	2,821	1	..	1	hand	..	..	..	..	..
Healy's, Kyeburn	Healy, Thomas ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vincent, Clyde	Smith, George, Clyde Collieries Company (owners), A. E. Ackroyd (sec.), Dunedin	..	brown	2	40′	14′	1 in 2	levels	..	..	..	dip	378	..	378	19,927	20,305	..	..	..	steam	..	..	..	natural	27/9/05
Dairy Creek, Clyde		33	"	2	40′	14′	1 in 2	"	..	..	..	incline ditto	4,067	..	4,067	16,022	20,089	1	8	9	"	steam-driven	..	..	"	27/9/05
Shepherd's Flat, Clyde ..	Cooper, J. B. (permit); Loch Lomond G.D. Co. (owners); J. Goodger (sec.)	3	brown	1	6′	all	..	bord and pillar	..	5′ x 4′	..	incline tunnel	648	..	648	492	1,140	1	2	3	horse	sip	hon	..	natural	15/9/05
Cardrona, Cardrona ..	McDougall, R. ..	21	"	1	30′	"	vertical	open	..	..	..	open	1,853	..	1,853	17,038	18,891	7	..	7	"	..	..	..	..	2/12/05
Gibbston, Gibbston ..	Duncan, J. ..	19	"	1	30′	"	1 in 2	bord and pillar	..	..	..	adit	1,126	85	1,211	11,870	13,081	2	6	8	hand & steam	..	..	..	natural	19/9/05
Cairnmuir, Bannockburn ..	Gibson, J. (permit)	3	"	1	12′	8′	semi-vertical	level & heading	2	..	..	shaft	1,154	..	1,154	2,030	3,184	2	4	6	steam	steam-driven	..	..	"	29/12/05
Kawarau, Bannockburn	Cromwell and Bannockburn Collieries Co., A. S. Gillanders, mine-m'g'r. T. K. Harty, man'g. director, Dunedin	28	"	1	10′	6′	1 in 4	bord and pillar	1	6′ x 6′	34′	incline	1,456	..	1,456	40,488	41,944	3	4	7	"	ditto	..	..	"	29/12/05
Excelsior, Bannockburn		13	"	1	6′	5′	1 in 4	ditto	1	6′ x 5½′	..	"	7,737	..	7,737	23,367	31,104	5	17	22	"	"	..	..	"	29/12/05
Bannockburn, Bannockburn		16	"	1	6′	5′	1 in 4	"	1	6′ x 4′	20′	adit	1,949	..	1,949	14,426	16,375	3	6	9	"	..	..	..	"	29/12/05
Nevis, Nevis	Scott, C. (permit)	12	"	1	20′	all	vertical	open	..	..	..	open	486	..	486	4,707	5,193	..	2	2	hand	..	..	..	..	27/12/05
Ryders, Nevis	Scott, C. ..	5	"	1	45′	"	"	"	..	..	..	"	99	..	99	3,037	3,136	1	..	1	"	..	..	..	..	27/12/05
Ritchie's, Nevis	Ritchie, R. ..	3	"	1	..	..	semi-vertical	"	..	..	..	"	1,538	..	1,538	650	2,188	3	..	3	..	..	..	..	..	28/12/05
Graham's, Nevis	Graham, A. J. ..	2	"	1	..	all	..	"	..	..	..	"	..	..	..	140	140	..	..	..	..	..	..	..	..	28/12/05
Private Pits.																										
Kyeburn, Kyeburn Diggings	McCready and Coombs	22	"	1	..	..	vertical	levels	..	..	..	adit	16	..	16	15,430	15,446	..	1	1	..	..	..	..	natural	..

* Trustee for George Turnbull, deceased.

STATISTICS of WORKINGS in COAL-MINES, 1905—*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 1905.			Approximate Total Output to 31st December, 1904.	Approximate Total Output to 31st December, 1905.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
MIDDLE ISLAND—*continued.*																										
CENTRAL OTAGO—*continued.*																										
Private Pits—continued.																										
Donaldson's Horse Flat, Macrae's	Donaldson, W. G.	2	brown	1	6′	5′	..	bord and pillar	..	5′ 6′	60′	dip	Tons. 40	Tons. ..	Tons. 40	Tons. 160	Tons. 200	..	2	2	horse	water-	box	..	natural	..
Price's, Blackstone Hill ..	Price, G. ..	8	lignite	1	12′	all	..	open	..	..	..	open	15	..	15	147	162	1	..	1	..	..	..	..	..	..
Angel's, Bannockburn ..	Angel, C. F. ..	3	brown	1	..	"	..	"	..	..	..	"	3	..	3	8	11	1	..	1	..	..	..	..	..	29/12/05
Pits not at work.																										
Perseverance, Alexandra ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17,957	17,957	..	..	..	..	..	..	..	..	..
McQueenville (old mine), Alexandra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46,607	46,607	..	..	..	..	..	..	..	..	..
Commercial, Kyeburn Diggings	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15,251	15,251	..	..	..	..	..	..	..	..	..
Ritchie's (James), Nevis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	20	..	..	..	..	..	..	..	..	..
Black Diamond, Roxburgh ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	232	232	..	..	..	..	..	..	..	..	..
Simpson Theyers, Alexandra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,636	1,636	..	..	..	..	..	..	..	..	..
Cromwell, Cromwell ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,019	3,019	..	..	..	..	..	..	..	..	..
Cooper's, Cromwell ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	385	385	..	..	..	..	..	..	..	..	..
Upper Nevis, Nevis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	65	65	..	..	..	..	..	..	..	..	..
Williamson's, Nevis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	95	95	..	..	..	..	..	..	..	..	..
Padgett's, Blackstone Hill ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	46	..	..	..	..	..	..	..	..	..
Waikerikeri, Clyde ..	Dunstan Coal Co. (Smart, J., sec.)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,322	20,322	..	..	..	..	..	..	..	..	..
Drummey's, Alexandra ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	179	179	..	..	..	..	..	..	..	..	..
Enterprise, Alexandra ..	(Rivers) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	703	703	..	..	..	..	..	..	..	..	..
Fennessy's, Idaburn ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	70	..	..	..	..	..	..	..	..	..
Cooper & Gibson's, Bannock'rn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,395	5,395	..	..	..	..	..	..	..	..	..
Gibbston, Gibbston ..	(Cowan's) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19,464	19,464	..	..	..	..	..	..	..	..	..
Doolan's Creek, Gibston ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	31	..	..	..	..	..	..	..	..	..
Harrex and Owen's, Cambrian's	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	60	..	..	..	..	..	..	..	..	..
Blackman's Gully, Clyde ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	144	144	..	..	..	..	..	..	..	..	..
Nulli Secundus, Bannockburn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	632	632	..	..	..	..	..	..	..	..	..
Blackman's, Alexandra ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	89	89	..	..	..	..	..	..	..	..	..
Gibson's, Bannockburn ..	Gibson, J. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	220	220	..	..	..	..	..	..	..	..	..
Watherston's, Nevis ..	Watherston, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	5	..	..	..	..	..	..	..	..	..
SOUTHLAND.																										
Pukerau, Pukerau	O'Hagan, C. ..	25	lignite	1	16′	8′ to 10′	in	bord and pillar	1	8′ x 8′	11 ch.	adit	868	..	868	31,535	32,403	1	2	3	horse	wind	mill	..	natural	26/7/05
Nelson's, Pukerau	Nelson, J. H. ..	16	"	1	16′	10′	..	ditto	..	..	..	"	167	..	167	3,215	3,382	..	2	2	hand	Doug	las	..	"	26/7/05
Whiterigg, Gore	Hartley, J. (permit)	23	"	1	18′	12′	1 in 20	"	1	6 x 5′	2 ch.	incline tunnel	4,355	..	4,355	20,167	24,522	2	3	5	horse	Tangye	..	..	"	5/4/05
Heffernan's, Gore	Burgess, W. C. (permit)	27	"	1	11′	8′	..	levels & headings	1	6′ x 5′	..	ditto	1,531	..	1,531	9,519	11,050	1	2	3	"	hand-pump	..	..	"	24/5/05

Rosedale, Gore	Mutch, A.	19	lignite	1	7′	all	..	open	..	..	..	open	1,024	..	1,024	3,079	4,103	1	..	1	horse	..	..	..	..	5/5/05
Green's, Gore	Smyth, J. and J.	17	"	1	22′	17′	1 in 20	bord and pillar	1	10′ x 8′	5 ch.	incline tunnel	11,314	..	11,314	47,545	58,859	3	7	10	"	Tangye	..	..	natural	13/6/05
River View, Gore	Nicol, L. D.	14	"	1	..	..	..	open	..	..	..	open	100	..	100	1,358	1,458	1	..	1	hand	..	..	..	..	..
Burnwell, Chatton	Stark, J. (permit)	6	"	1	16′	12′	1 in 10	levels & headings	..	20′ x 12′	100′	adit	3,828	..	3,828	3,100	6,928	1	5	6	horse	hand-pump	..	..	natural	23/5/05
Chatton, Chatton	Bushbridge, J.	1	"	1	..	..	..	open	..	..	..	open	955	..	955	..	955	1	..	1	..	..	..	..	..	24/5/05
East Chatton, East Chatton	Perkins, A.	3	"	1	30′	20′	1 in 5	"	..	..	..	"	683	..	683	2,527	3,210	1	2	3	hand	..	..	..	..	23/5/05
Pacey's (freehold), East Chatton	Pacey, John (permit)	2	"	1	17′	all	..	"	..	..	..	"	2,240	..	2,240	15,395	17,635	5	..	5	steam	hand-pump	..	..	..	23/5/05
Thorndale, Waikaka Valley	Boyd & Raunsley	6	"	1	10′	"	..	"	..	..	..	"	2,438	..	2,438	4,029	6,467	3	..	3	horse	..	..	..	..	5/5/05
Springfield (late Johnston's), Waikaka Valley	McColl, D.	12	"	1	17′	"	..	"	..	..	..	"	3,369	..	3,369	8,739	12,108	2	..	2	"	..	..	..	..	23/5/05
Willow Bank, Waikaka Valley	Jones, William (permit)	9	"	1	15′	"	..	"	..	..	..	"	2,410	..	2,410	13,425	15,835	4	..	4	"	two Douglas pumps	..	..	..	15/6/05
Glenlee, Wendon Valley	McGill, D. T. (permit)	12	"	1	14′	8′	..	levels & headings	..	10′ x 8′	2 ch.	adit	2,262	..	2,262	6,269	8,531	..	3	3	..	..	..	..	..	11/5/05
McDonald's, Wendon	Edge, A. A. (owner) Coulter, S. (permit)	6	"	1	16′	12′	..	ditto	..	12′x 12′	..	"	2,847	..	2,847	6,971	9,818	1	2	3	horse	..	..	..	natural	11/5/05
Wendon, Wendon	Edge, A. A.	26	"	1	16′	all	1 in 4	"	..	10′ x 12′	200′	incline tunnel	..	..	..	6,836	6,836	..	..	..	steam	water-box	..	..	"	..
Radford's, Wendon	Radford, E.; John Scott (owner)	15	"	1	20′	"	vertical	stoping	..	..	..	ditto	222	..	222	4,529	4,751	1	2	3	horse	..	..	..	"	..
Rear's (late Nelson's) Landslip, Waikaia	Rear, R.	2	"	1	10′	"	1 in 8	levels & headings	..	6′ x 4′	..	adit	850	..	850	257	1,107	1	2	3	hand	..	..	..	"	19/10/05
Landslip Coal Company. (late McIver's), Landslip, Waikaia	Turner, G. F.; Reid, W.E.C. (sec.) Dun'din	14	"	1	15′	12′	..	ditto	..	..	..	incline tunnel	4,384	..	4,384	5,291	9,675	3	8	11	steam	steam-driven	..	..	"	19/10/05
Muddy Terrace, Landslip, Waikaia	Goldie, T. F.	3	lignite & shale	1	10′	all	..	open	..	..	..	open	3,000	..	3,000	2,066	5,066	4	..	4	horse	..	..	..	..	19/10/05
Monaghan's, Landslip, Waikaia	Monaghan, R.	1	lignite	1	7′	"	..	levels & headings	..	6′ x 4′	100′	adit	1,377	..	1,377	..	1,377	3	..	3	hand	..	..	..	natural	19/10/05
Number One, Landslip, Waikaia	McKinnon, A.	6	"	1	12′	7′	..	bord and pillar	..	6′x 5′	..	"	342	..	342	2,561	2,903	3	8	11	"	..	..	..	"	19/10/05
Ross's, Landslip, Waikaia	Ross, Robert	2	"	1	10′	7′	..	ditto	..	6′ x 5′	..	"	1,214	..	1,214	78	1,292	1	4	5	"	..	..	..	"	19/10/05
Argyle, Landslip, Waikaia	Baxter, J. and T.	14	"	1	10′	10′	..	open	..	..	..	open	228	..	228	2,525	2,753	1	..	1	"	..	..	..	..	19/10/05
Beer's, Mossburn	Beer, Mrs. T. (owner)	3	..	1	..	..	..	"	..	..	..	"	79	..	79	31	110	1	..	1	"	..	..	..	..	..
Pyramids, Mandeville	Hollows, W. & T.	13	brown	1	18′	9½	1 in 2	bord and pillar	..	6′ x 5′	..	adit	372	..	372	2,403	2,775	1	2	3	"	..	..	..	natural	..
Radford's, Balfour	Radford, E.	1	..	..	..	..	..	open	..	..	..	open	10	..	10	..	10	2	..	2	"	..	..	..	..	..
Mataura Coal-mine (late Waimumu), Mataura	Sleeman, C. P.	9	lignite	1	17′	all	..	"	..	..	..	"	9,419	..	9,419	76,822	86,241	7	..	7	horse	..	..	..	..	15/4/05
Boghead (late Bogside), Mataura	Cameron, A. N.	9	"	1	16′	"	..	"	..	..	..	"	2,139	..	2,139	3,198	5,337	3	..	3	"	Douglas pump water-driven	..	..	..	15/4/05
Mataura Lignite Mine, Mataura	Coster, W. (Beattie, Coster and Co.)	29	"	1	16′	"	..	"	..	..	..	"	5,707	..	5,707	45,608	51,315	8	..	8	"	centrifugal	..	..	..	15/4/05
Waimumu, Waimumu	Williams, G. W.	6	"	3	6′ 10′ 6″ 5′	"	..	"	..	..	..	"	4,811	..	4,811	10,970	15,781	7	..	7	"	steam-driven	..	..	..	6/4/05
Ota Creek, Wyndham	Shields, William	25	"	1	6′	"	..	"	..	..	..	"	420	..	420	12,404	12,824	2	..	2	"	..	..	..	..	..
Genge's, Wyndham	Genge, E.	1	"	..	..	..	..	"	..	..	..	"	415	..	415	..	415	1	..	1	"	..	..	..	..	..
Robin Hood, Pine Bush	Cruser, William	24	"	1	15′	"	..	"	..	..	..	"	202	..	202	2,132	2,334	1	..	1	"	..	..	..	..	..
Graham's, Fairfax	Graham, P. S.	27	"	1	5′ 6″	"	1 in 20	bord and pillar	..	..	6 ch.	adit	451	..	451	14,796	15,247	..	2	2	hand	..	..	..	natural	..
Isla Bank, Fairfax	Slattery, M.	25	"	1	5′	"	..	open	..	..	..	open	8	..	8	6,657	6,665	1	..	1	"	..	..	..	..	..
Ardlowie, Fairfax	George, J.	3	"	1	..	..	..	"	..	..	..	"	98	..	98	180	278	2	..	2	"	..	..	..	..	..

Statistics of Workings in Coal-mines, 1905—*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. Size of Shaft or Adit.	Dimensions of Shafts. Depth of Shaft or Length of Adit.	Output delivered by	Output for 1905. Coal.	Output for 1905. Slack.	Output for 1905. Total.	Approximate Total Output to 31st December, 1904.	Approximate Total Output to 31st December, 1905.	Number of Men ordinarily employed. Above.	Below.	Total.	Power used for drawing Mineral.	Pumps. Stroke.	Pumps. Size of Barrel.	Pumps. Height of Column.	Means of Ventilation.	Date of Inspector's Last Visit.
									MIDDLE ISLAND—*continued.*																	
SOUTHLAND—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
Nightcaps, Nightcaps ..	Lloyd, J. ..	24	brown	3	36′ in aggregate	24′ in aggregate	variable to 1 in 7	bord and pillar	3	4′ x 4′ 4′ x 4′ 6″ 5′ x 5′	32 ch.	adit	45,500	..	45,500	423,963	469,463	30	47	77	steam and horse	..	..	..	fan	16/11/05
Hit or Miss, Nightcaps ..	Tinker, William	5	″	1	..	..	..	ditto	..	..	..	..	561	..	561	1,365	1,926	1	1	2	horse	..	..	..	natural	16/11/05
H.B., Nightcaps	McKenzie, D. (permit)	7	″	1	6′ 6″	all	..	open	..	..	..	open	186	..	186	4,056	4,242	1	..	1	hand	..	..	..	..	16/11/05
The Willow, Nightcaps ..	Clark, John ..	6	″	1	14′	″	..	″	..	..	..	″	400	..	400	1,071	1,471	2	..	2	″	..	..	..	..	..
Kent, Nightcaps	Quested, Bros. ..	7	″	1	4′	″	..	″	..	..	..	″	..	..	..	691	691	..	..	..	″	..	..	..	..	..
Morley, Nightcaps	Spence, G. R ..	2	″	1	..	″	..	″	..	..	..	″	1,389	..	1,389	1,302	2,691	2	..	2	″	..	..	..	..	16/11/05
McBride's, Nightcaps ..	Reed, W. (permit)	5	″	1	10′	″	..	″	..	..	..	″	145	..	145	4,098	4,243	2	..	2	″	..	..	..	..	16/11/05
Manuka Hill, Nightcaps ..	Groves, G. ..	1	″	..	..	..	..	″	..	..	..	″	8	..	8	..	8	1	..	1	″	..	..	..	..	..
Hogan's, Orepuki	Hogan, C. ..	1	..	..	..	..	..	″	..	..	..	″	16	..	16	..	16	1	..	1	″	..	..	..	..	..
Bush Siding, Seaward Bush	Robson, R. W. ..	3	..	1	..	..	..	″	..	..	..	″	1,120	..	1,120	838	1,958	2	..	2	″	..	..	..	..	..
Clifton, Clifton	Gillies, T. ..	4	..	..	..	..	..	″	..	..	..	″	129	..	129	168	297	2	..	2	″	..	..	..	..	20/5/05
Private Pits.																										
Waverley Park, Pukerau ..	Milne, James ..	4	lignite	1	7′	all	..	open	..	..	..	open	..	..	..	24	24	..	..	..	″	..	..	..	..	..
Mason's, Pukerau	Mason, A. M. W.	4	″	1	7′	″	..	″	..	..	..	″	24	..	24	58	82	..	..	..	..	..	..	..	..	..
Glover's, Pukerau	Glover, Thomas ..	8	″	..	..	..	..	″	..	..	..	″	50	..	50	84	134	..	..	..	..	..	..	..	..	..
Smith's, East Gore ..	Smith, R. ..	4	″	1	14′	all	..	″	..	..	..	″	..	..	..	44	44	..	..	..	..	..	..	..	..	..
Smith's, East Gore ..	Smith, H. ..	3	″	1	7′	″	..	″	..	..	..	″	..	..	..	47	47	..	..	..	..	..	..	..	..	..
Leitze's, Gore	Leitze, M. ..	26	″	1	4′ to 7′	″	..	″	..	..	..	″	12	..	12	1,506	1,518	..	..	..	..	..	..	..	..	..
Cross's, Otama	Cross Bros. ..	7	″	1	4′	″	..	″	..	..	..	″	10	..	10	146	156	..	..	..	..	..	..	..	..	..
Ford's, Chatton	Ford, P. ..	25	″	1	..	″	..	″	..	..	..	″	42	..	42	522	564	..	..	..	..	..	..	..	..	..
Perkins's, Wendon Valley ..	Perkins, G. A. ..	4	″	1	7′	″	..	″	..	..	..	″	9	..	9	33	42	..	..	..	..	..	..	..	..	..
McGilvray's, Mataura ..	McGilvray, J. ..	15	″	1	4′	″	..	″	..	..	..	″	..	..	..	353	353	..	..	..	..	..	..	..	..	..
Studholme's (late McKenzie's), Blackmount	Studholme, H. ..	..	..	..	..	..	..	..	..	..	..	..	14	..	14	..	14	..	..	..	..	..	..	..	..	..
Linwood, Te Anau	Ross and Co., D.	5	..	..	..	..	..	open	..	..	..	open	520	..	520	..	520	1	..	1	..	..	..	..	..	..
Wyndham, Wyndham ..	Irvine, D. ..	10	lignite	1	..	all	..	″	..	..	..	″	10	..	10	315	325	..	..	..	..	..	..	..	..	..
Pits not at work.																										
Waikaka (McDonald's), E.Gore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	425	425	..	..	..	..	..	..	..	..	..
Bushbridge's, Wendon Valley	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	225	225	..	..	..	..	..	..	..	..	..
Waikaia Colleries Company, Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,549	1,549	..	..	..	..	..	..	..	..	..
Marshall's, Edendale ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	675	675	..	..	..	..	..	..	..	..	..
Knapdale, Chatton ..	..	18	lignite	1	26	15′	semi-vertical	wide headings	..	..	..	adit	..	..	..	6,480	6,480	..	..	..	..	..	..	..	..	..

Waimea, Longridge Village, Waimea	..	13	gnite	1	3′	all	..	open	..	..	..	open	..	..	..	8,245	8,245	..	..	..	..	..	..	..	..
Lambert's, Edendale ..	..	1	″	1	12′	″	..	″	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Naylons, Fairlax	..	1	..	1	..	..	..	″	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Orepuki, Orepuki ..	..	20	brown	..	12′ to 22′	6′	..	sectional	..	10′ x 6′ 6″	..	adit	..	..	..	24,471	24,471	..	..	..	..	..	..	..	..
	..	2	oil-shale	..	4′	4′	..	..	..	..	..	..	..	..	..	14,422	14,422	..	..	..	..	..	..	..	..
Waikoikoi, Pukerau ..	..	16	lignite	1	6′	all	..	open	..	..	..	open	..	..	..	330	330	..	..	..	..	..	..	..	..
Vial and Gillespie's ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	817	817	..	..	..	..	..	..	..	..
Goldie's, Landslip	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	474	474	..	..	..	..	..	..	..	..
Waikoikoi, Pukerau ..	Scott & Ferguson	2	..	..	..	..	..	..	..	..	..	..	..	..	..	110	110	..	..	..	..	..	..	..	..
McBride's, No. 11, Nightcaps	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	72	72	..	..	..	..	..	..	..	..
Nichol's, Gore	Nichol, W. ..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	10	10	..	..	..	..	..	..	..	..
Smyth's, Gore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,107	7,107	..	..	..	..	..	..	..	..
Boyd & McNee (late Black's), Greenvale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	478	478	..	..	..	..	..	..	..	..
Glendhu, Mataura.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	347	347	..	..	..	..	..	..	..	..
Southbrook, Waikaka ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	117	117	..	..	..	..	..	..	..	..
Smith's, Mataura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	55	55	..	..	..	..	..	..	..	..
Edendale, Wyndham ..	McDonald, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,997	1,997	..	..	..	..	..	..	..	..
Neill's, Edendale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79	79	..	..	..	..	..	..	..	..
Valley Road, Pukerau ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,062	3,062	..	..	..	..	..	..	..	..
Moffet & Longshaw's, Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	72	72	..	..	..	..	..	..	..	..
Town's, Mataura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,002	8,002	..	..	..	..	..	..	..	..
Carr's, Mataura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	518	518	..	..	..	..	..	..	..	..
Porter's, Pukerau	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22	22	..	..	..	..	..	..	..	..
Dickson and Walker, Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37	37	..	..	..	..	..	..	..	..
Hokonui, Hokonui ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52,084	52,084	..	..	..	..	..	..	..	..
Slaughter-yards, Mataura ..	(Freezing-works use)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	83	83	..	..	..	..	..	..	..	..
Perseverance, Pukerau ..	..	..	..	..	..	..	..	open	..	..	..	open	..	..	..	2,052	2,052	..	..	..	..	..	..	..	..
Frank's, Pukerau	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	45	45	..	..	..	..	..	..	..	..
Rejefsky's, Gore	..	..	..	..	..	..	..	..	..	..	..	″	..	..	..	57	57	..	..	..	..	..	..	..	..
Clukoski's, Gore	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	28	28	..	..	..	..	..	..	..	..
Kirk and Sheddon, Gore ..	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	140	140	..	..	..	..	..	..	..	..
Fryer's Excelsior, Gore ..	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	807	807	..	..	..	..	..	..	..	..
Gutzchlag's, Gore	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	3,294	3,294	..	..	..	..	..	..	..	..
Coal Creek, Wendonside ..	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	40	40	..	..	..	..	..	..	..	..
Dryden's, Gore	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	438	438	..	..	..	..	..	..	..	..
Kingdon's, Gore	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	27	27	..	..	..	..	..	..	..	..
Westbrook, Greenvale ..	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	175	175	..	..	..	..	..	..	..	..
Middlemiss, Greenvale ..	..	..	..	..	..	..	..	″	..	..	..	″	..	..	..	15	15	..	..	..	..	..	..	..	..
Marshall's, Otama	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	48	..	..	..	..	..	..	..	..
Maslin's, Wendon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	854	854	..	..	..	..	..	..	..	..
Cambrian (McIvor), Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	191	191	..	..	..	..	..	..	..	..
Northcote's, Waikaia ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	685	685	..	..	..	..	..	..	..	..
McGowan's, Mataura ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	125	125	..	..	..	..	..	..	..	..
Genge's, Wyndham ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,819	2,819	..	..	..	..	..	..	..	..
Monaghan's, Pine Bush ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	11	..	..	..	..	..	..	..	..
Morley Village (Brazer's) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,096	2,096	..	..	..	..	..	..	..	..
Cluny, Orepuki	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	156	156	..	..	..	..	..	..	..	..
Waikaka, Gore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	604	604	..	..	..	..	..	..	..	..
Croydon, Gore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	25	..	..	..	..	..	..	..	..
Hunter's, Otama	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,944	1,944	..	..	..	..	..	..	..	..
North Chatton, Waikaka ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	672	672	..	..	..	..	..	..	..	..
Edge's No. 14, Wendon Valley	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,286	1,286	..	..	..	..	..	..	..	..
Munro's, Wyndham ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11,151	11,151	..	..	..	..	..	..	..	..

Statistics of Workings in Coal-mines, 1905—*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 1905.			Approximate Total Output to 31st December, 1904.	Approximate Total Output to 31st December, 1905.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
MIDDLE ISLAND—*continued*.																										
SOUTHLAND—*continued*.																										
Pits not at work—continued.																										
Wallace, Nightcaps ..	..	..	..	..	..	..	..	..	..	..	..	..	Tons.	Tons.	Tons.	Tons.	Tons.									
Alley's Reliable, Nightcaps ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,147	20,147	..	..	..	..	..	..	..	..	..
Black Diamond, Nightcaps ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	704	704	..	..	..	..	..	..	..	..	..
Morley Village, Nightcaps ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	220	220	..	..	..	..	..	..	..	..	..
Jones, Edendale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	301	301	..	..	..	..	..	..	..	..	..
Monaghan's Landslip, Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	280	280	..	..	..	..	..	..	..	..	..
Spey Bank, Fairfax ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	630	630	..	..	..	..	..	..	..	..	..
Blythe, Nightcaps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	540	540	..	..	..	..	..	..	..	..	..
Healy's, East Gore ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,009	1,009	..	..	..	..	..	..	..	..	..
Otama, Otama	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	12	..	..	..	..	..	..	..	..	..
Mount Linton, Nightcaps ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	295	295	..	..	..	..	..	..	..	..	..
Marlow, Nightcaps ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	634	634	..	..	..	..	..	..	..	..	..
Harvey's, Coatton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	10	..	..	..	..	..	..	..	..	..
Townsend's, Mataura ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13,586	13,586	..	..	..	..	..	..	..	..	..
																739	739	..	..	..	..	..	..	..	..	..
Totals, Southern District, Middle Island	..	..	..	..	..	..	..	..	1	..	..	..	384,616	85,037	469653	6547810	7017463	362	889	1251						
Totals, West Coast District, Middle Island	..	..	..	..	..	..	..	..	1	..	..	..	725,785	130442	856227	9645456	10501683	359	1142	1501						
Totals, North Island	..	..	..	..	..	..	..	..	..	..	..	..	236,361	22,515	259876	3583032	3842908	112	405	517						
Grand Totals ..	..	..	..	..	..	..	..	..	..	..	..	..	1346762	238,994	1585756	19776298	21362054	833	2436	3269						

Add output of following twelve mines, included in previous statement but now abandoned: Motupipi, 360 tons; Westport-Wallsend, 3,441 tons; Waimangaroa, 17,307 tons; Wellington, 2,299 tons; Inkerman, 2,665 tons; Inglewood, 314 tons; Devil's Creek, 343 tons; Inangahua, 71 tons; Murray's Creek No. 2, 450 tons; Burke's Creek, 300 tons; Reefton, 36 tons: total	27,586
Add output of Waikaka, Adam's Flat, and Waimea Mines, inserted twice in statement for 1891	6,518
Output of mines included in statement for 1890, but whose operations were suspended prior to 1890 (less three, which are again included in body of statement—namely, Hill's Creek, 779 tons; Lovell's Flat, 323 tons; and Wyndham, 1,988 tons: total, 3,090 tons)	132,732
Output of mines included in former statements, but whose operations were suspended prior to 1889	172,529
	21,701,419

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