



NEW ZEALAND
GOVERNMENT GAZETTE
(PROVINCE OF NELSON).

Published by Authority.

All Public Notifications which appear in this Gazette, with any Official Signature thereunto annexed, are to be considered as Official Communications made to those Persons to whom they may relate, and are to be obeyed accordingly.

By His Honor's command,

ALFRED GREENFIELD, Provincial Secretary.

VOL. XIV.

NELSON, FRIDAY, JULY 6, 1866.

No. 16.

Superintendent's Office,
July 2, 1866.

HIS Honor the Superintendent directs the publication of the following Report, for general information.

ALFRED GREENFIELD,
Provincial Secretary.

TRIALS OF WEST COAST COAL.

Nelson, May 11, 1866.

The Provincial Secretary, Nelson.

SIR—At your request I beg to enclose, for the information of his Honor the Superintendent, four Tables, prepared by me, showing in a condensed and simple form the results of

the trials of West Coast coal at Woolwich Dockyard, compared with similar trials of North of England, Welsh, and New South Wales coal tested at the same place. Should these be published, I beg to suggest that the result of trials made in local steamers in 1861 of the same coal (published in the *New Zealand Gazette*, February 15th, 1862) should be placed alongside of them, to show how nearly the same result had been arrived at both here and in England, by an entirely different series of experiments.

I have, &c.,

JAMES BURNETT,
Colliery Viewer.

REPORT of Trials of COAL sent from NELSON, New Zealand,

Woolwich Dockyard, 18th December, 1865.

Kind of Coal.	Date of Trial.	Pounds of Water evaporated to 1 Pound of Coal consumed.		Cubic feet of Water evaporated per hour.		Per Centage of		
		Calculated at actual temperature of feed water.	Calculated at 100° constant temperature of feed water.	Calculated at actual temperature of feed water.	Calculated at 100° constant temperature of feed water.	Clinker.	Ash.	both Clinker and Ash.
Grey Coal...	1865.	lb	lb	Cubic feet.	Cubic feet.			
	November 17	8.64	9.	37.61	39.19	.53	4.32	4.86
	November 29	9.09	9.49	40.85	42.64	.32	2.91	3.23
	December 1	9.09	9.47	42.2	43.97	.29	2.68	2.97
	December 4	9.5	9.9	43.43	45.25	.27	3.1	3.37
MEAN	9.08	9.46	41.02	42.76	.35	3.25	3.6	
Buller Coal	December 13	9.41	9.83	42.08	43.92	.91	3.3	4.21

REMARKS.

The Grey coal cakes in burning, and makes a hollow fire, forming a small quantity of light clinker, that does not adhere to the bars. Light ash only falls through the fire-bars, and a considerable quantity of white ash passes up the chimney, leaving a dark grey, sandy kind of dust in the tubes and fire-box. The smoke is small in quantity, and the coal is tender and likely to break small in being moved from ship to ship.

The Buller coal is a more open burning coal, and does not cake, forming a rather closer clinker than the other, and leaves a sooty deposit in the tubes and fire-box, more like the Hartly (North of England) coal, and gives off a black smoke.

No stoking tool was used in burning the samples of both kinds of coals, and nothing seems to be

required beyond throwing the coal on to the fires; and the quantities of each clinker is not greater than that of the North of England coal.

The evaporative power of this coal is about the average of that of North of England coal as supplied to the service; but it is not quite so rapid, and requires a rather longer time to boil off a given quantity of water.

The trial on the 17th November was made with the bars half-inch apart; the remaining trials with the bars about three-eighths of an inch apart.

(Signed) J. TRICKETT,
Chief Engineer.
A. PATRIDGE,
Assistant.

To the Commodore Superintendent.

MR. TRICKETT'S ADDITIONAL TRIALS.

(COPY.)

Woolwich Dockyard,
23rd January, 1866.

I beg to report that additional trials have been made of the New Zealand coal, and a comparative statement is forwarded herewith. The mean result of ten trials of North country

coal and ten trials of Welsh coal, at the same boiler, are given for comparison; from which it will be seen that the New Zealand coal evaporates more water per pound of coal than the North of England or Welsh, but does not evaporate it so rapidly; or, in other words, a larger fire-grate is required in the same boiler to evaporate a given quantity of water per hour with New Zealand coal than would be required if North of England or Welsh coal were used.

TRIALS of NELSON (New Zealand) COAL, in comparison with NORTH COUNTRY and WELSH COAL, at the Trial Boiler, Woolwich, 23rd January, 1866.

Kind of Coal.	Date of Trials.	lbs Water evaporated to 1 lb Coal consumed, calculated from 100° constant temperature feed water.	Cubic feet Water evaporated per hour, calculated from 100° constant temperature feed water.	Per centage of Clinker.	Per centage of Ash.	Per centage of both Clinker and Ash.	Width of Bars.	REMARKS.
COAL sent in BOXES—reported 18th December, 1865.								
NEW ZEALAND COAL.	1865.						Inch.	
Grey Coal ...	November 17	9·	39·19	·53	4·32	4·85	$\frac{1}{2}$	No stoking tool used. Fine ash. Light grey smoke.
Grey Coal ...	November 29	9·49	42·64	·32	2·91	3·23	$\frac{3}{8}$	
Grey Coal ...	December 1	9·47	43·97	·29	2·68	2·97	$\frac{3}{8}$	
Grey Coal ...	December 4	9·9	45·25	·27	3·1	3·37	$\frac{3}{8}$	
	MEAN ...	9·46	42·76	·35	3·25	3·6	$\frac{1}{2}$ & $\frac{3}{8}$	
Buller Coal ...	December 13	9·83	43·92	·91	3·3	4·21	$\frac{3}{8}$	Ditto.
COAL sent in BAGS—tried since the last was reported.								
	1866.							
Grey Coal ...	January 12 ...	9·46	40·36	·66	3·35	4·01	$\frac{3}{8}$	Not stoked
Grey Coal ...	January 13 ...	9·46	43·24	·8	3·85	4·65	$\frac{3}{8}$	
	MEAN ...	9·46	41·8	·73	3·6	4·33	$\frac{3}{8}$	
Grey Coal ...	January 15 ...	9·4	44·58	·71	3·6	4·31	$\frac{3}{8}$	Stoked. Black smoke and fine ash. It will be seen from these trials that a small increase of the water evaporated per hour is obtained when the fires are stoked.
Grey Coal ...	January 17 ...	9·39	43·99	·84	3·6	4·44	$\frac{3}{8}$	
Grey Coal ...	January 18 ...	9·46	44·87	·52	3·1	3·62	$\frac{3}{8}$	
	MEAN ...	9·42	44·48	·69	3·43	4·12	$\frac{3}{8}$	
N.B. The coal sent in bags forms rather a rougher clinker than that in boxes.								
NORTH COUNTRY COAL.	MEAN OF TEN TRIALS.	8·72	50·32	2·17	3·71	5·89		Made for the purpose of comparison with the trials of New Zealand coal.
WELSH COAL.	MEAN OF TEN TRIALS.	9·11	47·75	1·94	4·22	6·16		Made for the purpose of comparison with the trials of New Zealand coal.

(Signed)

J. TRICKETT,
Chief Engineer.

TABLES COMPILED FROM FOREGOING REPORTS.

TABLE I.

RESULT of TRIALS of the Quality of COAL from the GREY and BULLER, compared with North of England, Welsh, and New South Wales Coal.
(All trials having been made at Woolwich Dockyard.)

Kind of Coal.	Date of trial.	Width of Bars.	lbs Water evaporated by 1lb Coal, at a constant temperature of 100° feed water.	Cubic feet Water evaporated per hour, at a constant temp. of 100° feed water.	Per centage of		
					Clinker.	Ash.	Ash and Clinker.
* Average North of England ...	...	...	8.25	47.00	1.00	4.00	5.00
North of England... (Mean of 10 trials.)	...	...	8.72	50.32	2.17	3.71	5.88
Welsh ... (Mean of 10 trials.)	...	..	9.11	47.75	1.94	4.22	6.16
* New South Wales ... (Eleven different kinds.)	...	...	8.298	46.785	2.11	7.15	9.26
Grey— In Boxes, dead small taken out	1865						
Worst result ...	November 17	½ inch	9.00	39.19	.53	4.32	4.85
Best result ...	December 4	¾ inch	9.90	45.25	.27	3.10	3.37
MEAN of 4 trials ...	...	½ & ¾ in.	9.46	42.76	.35	3.25	3.60
† Grey— In Bags, dead small—	1866						
Not stoked ...	January 12 ...	¾ inch	9.46	40.36	.60	3.35	4.01
Not stoked ...	January 13 ...	¾ inch	9.46	43.24	.80	3.85	4.65
MEAN ...	...	¾ inch	9.46	41.80	.73	3.60	4.33
Stoked ...	January 15 ...	¾ inch	9.40	44.58	.71	3.60	4.31
Stoked ...	January 17 ...	¾ inch	9.36	43.99	.84	3.60	4.44
Stoked ...	January 18 ...	¾ inch	9.46	44.87	.52	3.10	3.62
MEAN ...	...	¾ inch	9.42	44.48	.69	3.43	4.12
GENERAL AVERAGE	...	½ & ¾ in.	9.43	43.05	.61	3.52	4.13
† Buller ... (One trial.)	1865 December 13	¾ inch	9.83	43.92	.91	3.30	4.21

* From a Woolwich Report, May 1st, 1862, published in the 'Sydney Morning Herald,' 20th September, 1862, and republished in Mr. Burnett's Report on the Coal-field of New South Wales (Nelson Government Gazette, 21st February, 1865).
† The Grey coal in bags was sent to England by mistake; it was the dead small taken out when the boxes were packed. It shows satisfactorily that even the dead small of this coal is nearly as good as any part of it.
‡ The reason there was only one trial of Buller coal is, that, owing to the difficulty of conveying it from the seam to the port without roads, only two tons were sent to England.

TABLE II.

Showing the RELATIVE VALUE for Steam Purposes of North of England, Welsh, New South Wales, and Grey and Buller Coal, calculated on the basis given by the Trials of these Coals at WOOLWICH DOCKYARD, viz.—If 100 lbs. of Average North of England Coal will evaporate a given Quantity of Water in an hour, this Table shows how the same work can be done by the other Coals.

EXAMPLE OF CALCULATION—BULLER,							
Water lbs. As 983	Coal lbs. 100	Water lbs. 825	Coal lbs. 83 92	Water Cub. ft. As 43·92	Time m. s. 60' 00"	Water Cub. ft. 47·00	Time m. s. 64' 12"
Kind of Coal.	Quantity of Coal used.	Time occupied in operation.	Incombustible Matter remaining.				
			Clinker.	Ash.	Ash and Clinker.		
Average North of England	lb 100·00	m. s. 60' 00"	lb 1·00	lb 4·00	lb 5·00		
North of England... (Mean of 10 trials.)	94·61	56 02	2·05	3·51	5·56		
Welsh (Mean of 10 trials.)	90·55	59 03	1·75	3·81	5·56		
New South Wales (Eleven different kinds.)	99·50	60 16	2·09	7·11	9·20		
Grey— In Boxes, dead small taken out Worst result	90·16	71 57	·48	3·96	4·44		
Best result	83·33	62 19	·22	2·58	2·80		
MEAN of 4 trials	87·21	65 56	·30	2·83	3·13		
Grey— In Bags, dead small— Not stoked—Mean of 2 trials	87·21	67 27	·64	3·14	3·78		
Stoked—Mean of 3 trials	87·57	63 23	·60	3·00	3·60		
GENERAL AVERAGE	87·48	65 30	·44	3·10	3·54		
Buller (One trial.)	83·93	64 12	·76	2·76	3·52		

TABLE III.

Showing the QUANTITY of WATER evaporated by an equal Quantity of different kinds of COAL, calculated from Tables I. and II., on the following basis, viz.—A given quantity (represented by 100) of Average North of England Coal will evaporate 4700 cubic feet of Water in an hour, and its value for steam-producing is represented by 100 per cent.

EXAMPLE OF CALCULATION—BULLER.									
Coal lbs.	Water Cub. ft.	Coal lbs.	Water Cub. ft.	% cent.	Time m. s.	Water Cub. ft.	Time m. s.	Water Cub. ft.	% cent.
As 83·93	: 4700	:: 100	: 5599	= 119·12	As 64' 12"	: 5599	:: 60' 00"	: 5232	= 111·31
Kind of Coal.	Quantity of Coal used.	Water evaporated.	Per centage of Water evaporated.	Time required.	Water evaporated per hour.	Per cent. of Water evaporated per hour.			
	℥	Cub. ft.		m. s.	Cub. ft.				
Average North of England ...	100	4700	100·00	60' 00"	4700	100·00			
North of England.. (Mean of 10 trials) ...	100	4967	105·68	56 02	5318	113·14			
Welsh ... (Mean of 10 trials) ...	100	5190	110·42	59 03	5277	112·27			
New South Wales... (Eleven different kinds) ...	100	4723	100·48	60 16	4702	100·04			
Grey— In Boxes, dead small taken out— Worst result ...	100	5212	110·89	71 57	4346	92·46			
Best result ...	100	5640	120·00	62 19	5430	115·53			
MEAN of 4 trials ...	100	5389	114·65	65 56	4904	104·34			
Grey— In Bags, dead small— Not stoked—Mean of 2 trials	100	5389	114·65	67 27	4793	101·97			
Stoked—Mean of 3 trials	100	5367	114·19	63 23	5080	108·03			
GENERAL AVERAGE...	100	5372	114·29	65 30	4920	104·63			
Buller ... (One trial) ...	100	5599	119·12	64 12	5232	111·31			

MR. BURNETT'S REMARKS.

REMARKS on the WOOLWICH REPORTS of Trials of GREY and BULLER COAL; and the tables calculated from these reports, showing the relative value of these compared with North of England, Welsh, and New South Wales Coal.

The samples of coal both from the Grey and Buller were taken from within a few feet of the outcrop and almost close to the surface, and it is only fair to conclude (as indeed the recent working at the Grey has demonstrated) that the quality of the coal will improve as the works are continued further from the outcrop and deeper below the surface. It is to be presumed that the North of England, Welsh, and New South Wales Coal (being from actual working mines) would be a fair average of the mineral in its full perfection; and in the case of the two former probably fresh from the mines; whereas that from the Grey and Buller was mere outcrop coal, not tested for more than 16 months after it was worked, and after being broken and deteriorated by shipping, reshipping, carting, packing, and conveying to the other side of the world; so it is only reasonable to conclude that samples of these coals, at a moderate depth from the surface (such as will be produced when the mines are actually worked), tested under equally favorable circumstances would contrast still better than they do at present.

When the Grey and Buller Coal was packed in boxes at Nelson the dead small was taken out and put in bags, but was not intended to be sent to England; however, by mistake it was sent; and to this accident we are indebted for one of the most valuable results of these trials viz. that the "coal in bags" (see 2nd Report), i.e. the dead small, is very nearly equal to any other part of the coal. This is a most important quality, as it does away with the necessity of screening, by which a considerable percentage of other coal is wasted; the small of Welsh coal particularly is almost useless. Another very valuable property is the small quantity of clinker and ash contained in this coal, and what little clinker there is, does not stick to the bars; the amount of disagreeable labor saved by this can only be thoroughly appreciated by the working stoker. Indeed it appears that no stoking whatever is required, "but that a small increase of the water evaporated per hour is obtained when the fires are stoked." This is shown very clearly in table No. IV.,

2nd part, where, in the trials of dead small 6.11 per cent. more water is evaporated in a given time when the fires are stoked; so it may be presumed that had the coal in boxes been stoked the result would have been better in like proportion.

Table No. IV. is a condensation of the information contained in the reports and tables and shows at a glance the comparative value of each-kind of coal tested.

It is interesting to compare the results of minute and elaborate trials at Woolwich, with the trials of the same coal on board local steamers in 1861, (published in the *New Zealand Gazette*, Feb. 15, 1862), for it will be seen that in almost every respect they agree exactly.

There was only one trial of Buller coal as only 2 tons were sent to England, owing to the difficulty of carrying it from the mine to the port without roads; but it will be seen that even this one trial shows a result almost equal to the best, as it is only one per cent. below Welsh coal in evaporating water in a given time (see table No. IV., 2nd part). It is rather singular that Mr. Trickett in his report says the Buller coal does not cake, whereas I know from experience that it does cake, but not so freely as the Grey; possibly it was so much deteriorated before reaching Woolwich that its caking qualities were destroyed.

From all the trials we have a right to conclude that West Coast coal is 15 per cent. better than either average North of England or New South Wales coal; and very much superior indeed in the matter of clinker and ash. This is a matter of the utmost importance in the Panama service particularly where the whole distance from Wellington to the Isthmus is to be performed by rather small steamers without a coaling station. This is expected to occupy about 20 days, and as engines of 500 horse-power will probably consume about 50 tons a day, 1,000 tons at least will be required for the run: now if West Coast coal was used there would be a saving of 150 tons on this, and consequently 150 tons more space would be available for cargo and passengers: This of itself would be an important item in the balance-sheet of the company.

JAMES BURNETT,
Colliery Viewer.

Nelson, May 11th, 1866.

Extract from "New Zealand Gazette,"
February 15, 1862.

Nelson, December 13, 1861.

SIR,—In accordance with instructions received from you, I proceeded to Collingwood on Wednesday evening, on board the "Tasmanian Maid" steamer, for the purpose of observing and reporting upon the qualities and capabilities of the coal from the Grey River.

No other kind of coal was used on board, either in going or returning, so that we had a fair opportunity of testing it.

We left Nelson about 9 p.m., passed Separation Point at half-past one, and arrived in Collingwood at 4 next morning, having steamed slowly during the latter part of the run purposely, as we could not get into Collingwood sooner, on account of the tide. The night was almost calm, sea smooth, and no sails were used.

We started on our return from Collingwood about 4½ p.m. on Thursday, arrived off Motupipi at 6, stopped there an hour and a half to land goods and passengers, and arrived in Nelson about 1 next morning,—sea smooth, and with a light head wind. The engineer of that vessel, Mr. Nancarrow, kindly offered every facility for a proper examination of the qualities of the coal, and I therefore inspected the fires at frequent intervals, made notes at the same time of the speed of the engines, force of steam, and vacuum, &c., endeavoring to keep these as uniform as possible (in which there is no difficulty), and the fires of an average and usual thickness.

Having ascertained from the engineer the usual rate of consumption of Sydney coal per hour, I proceeded in conjunction with him to compare this with the Grey coal on board, and for this purpose made two separate and distinct experiments.

A quantity previously weighed was placed in the stoke hole, and the time required to consume it was carefully noted—the state of the fires at the commencement of the trial being observed, and sustained, as equally as possible during the experiment.

The result of both these experiments was the same—viz., that 4 cwt. of Grey coal lasted as long and did the same amount of work as 5 cwt. of Sydney coal.

This of itself is a most important fact. But another valuable quality of this coal is that it does not appear to have the slightest disposition to form "clinkers," not a trace of them being observable at the end of the run

either way, and the fires never having been "pricked" or "cleaned" during the whole time.

All that passes through the bars is a small quantity of grey ash and clean cinders, which latter would be consumed more thoroughly, were the fire-bars closer together. It would appear in fact that the operation of cleaning the fires and removing the clinkers, so frequently needed with other coals, will never be required in using the Grey coal, which will be an immense saving of very disagreeable labor to the firemen.

The tubes in the boiler also keeps much cleaner than with Sydney coal, no soot being formed in them, as is the case with the latter; a deposit of fine sharp dust is all that is to be observed, most of which is carried right through the tubes—thus diminishing the necessity of cleaning them out, and being a direct saving of labor and tools; of this fact an increased economy of fuel is also the certain result.

The coal burns clear and bright, cakes sufficiently well to keep the fire open and lively, emits no unpleasant odour, and is apparently quite free from sulphur, as indeed from any impurity whatever, as the fires if left to themselves burn right down and leave the bars quite clean.

The weight of this sample of coal appears to be rather less than that of Sydney coal in the proportion of 180 to 183, but it is quite probable and fair to assume that it will weigh heavier when the seam is worked further in.

In conclusion I have great satisfaction in recording my most unqualified approval of the Grey coal for steam purposes, and doubt not that it will, when better known, come into general repute and use, and be the means of making Nelson the future rendezvous for all steamers in the southern seas for coaling purposes. Whatever means may be taken to bring it into notice, such an amount of capital should be employed for the purpose as would insure its being worked on a large scale, so that the market might be kept always well supplied with an article so valuable and desirable in every way.

I have, &c.,

JOHN BLACKETT,
Provincial Engineer.

His Honor the Superintendent,
Nelson.

Nelson, December 26th, 1861.

SIR—For the information of your Honor's Government, I beg herewith to hand you a report on 12 tons Grey river coal supplied the

"Lord Worsley," on 13th ultimo—the said being written by my engineer. I beg at the same time to fully confirm the same, and take leave to congratulate the province on the discovery of such a quality of coal within its boundaries.

I have, &c.,

A. KENNEDY,
Master s.s. "Lord Worsley."

His Honor the Superintendent,
Province of Nelson.

Report on Grey River Coals, supplied the I.R.M. Co.'s steamer "Lord Worsley," on the 13th instant.

The fires having been lit with the coals, and the samples used exclusively, I found we had steam in 55 minutes—this being about 25 minutes less time than from ordinary New South Wales coals; at the same time, of course, only using the ordinary exertion in obtaining a pressure of steam.

During the fore part of the passage from Nelson to Wellington I found a good deal of waste, through the coals falling through the bars into the ash pit but partially consumed. Attributing this to the fire bars being too wide apart (they having been set for Newcastle coals), and to the firemen handling them too roughly, I had more careful usage given them, and found that by not disturbing the fires so much by "pricking" that we could keep an average of 10lbs. of steam with a good deal less labor to the firemen, and with a clear saving in quantity of 12·0 over Newcastle (New South Wales) coal. The coals burn excellently well, making a bright clean fire, and remarkably free from clinker, and burns to a clean white ash.

On examining the tubes, I found they required much less cleaning than ever I remember to have seen them after New South Wales coal, and mixed with the little soot in them was a fine greyish dust.

The coals sent on board the "Lord Worsley" were very small and broken, or I have no doubt the result would have been better than it was; and I am firmly of opinion that if the same sample of coals, obtained from a greater depth in the seam, were delivered to steamers, screened in the ordinary manner of coals, that the result would be found to be a saving of 20·0 over Newcastle (New South Wales) coals.

WM. GUNBY,
Chief Engineer s.s. "Lord Worsley."

Soho Foundry,
Nelson, January 12, 1862.

SIR—In accordance with your request, I have tried the West Coast coal, both in the smith's forge, and for making coke. In the smith's forge I have no hesitation in saying it is superior to any coal we get here, either English or Sydney coal. We find that Sydney coal is better for smith's purposes than English, and I should estimate the Grey coal to be about as much superior to the Sydney as the latter is to the English. For the making of coke, my opportunities have not been sufficient to enable me to judge properly; I, however, obtained some from the coal, which leaves no doubt in my mind that it has all the properties necessary for the making of most excellent coke.

I am, &c.,

CHARLES BALME

J. P. Robinson, Esq.

Nelson, January 20th, 1862.

SIR,—I beg herewith to hand an account of the result of my trial as to the quality of the Grey River coal.

Conceiving the best test to be a comparison with a known coal, I procured the best sample I could obtain of the New South Wales coal, accurately weighed and watched it burning, and found that to bring my copper of 386 gallons of water to boiling point, it took 147lbs. of coal. On the next occasion of brewing, I as carefully tested the Grey coal, and found that, to produce the same result, it took 124lbs. of coal only, which you will perceive is a clear saving of 18·0 in quantity actually consumed.

As to its quality for my purpose, I decidedly prefer it to any coal I have ever used in Nelson; as, there being neither dirt nor clinker in the fires, it requires much less labor than ordinary coal. The fire, I noticed, burnt with a clear bright flame, and when the gas was exhausted, the body of the fire burnt a clear bright red. No unpleasant smell arises from them, and they make but a very small quantity of smoke.

I take the liberty of congratulating your Honor and the Province on the production of so fine a sample of coal.

I am, Sir,

THOMAS FIELD,

Brewer, Nelson.

J. P. Robinson, Esq., Superintendent,
Nelson.

Nelson Brewery, 8th Jan., 1862.

SIR,—We are happy to be able to report so satisfactorily of the West Coast coals. We have used them both for brewing and steam purposes, and find them of a very superior quality. We got up steam in less time and with one-third less coal than the Newcastle. It is also very durable, and the ashes similar to the English.

We hope ere long we may be able to procure the quantity we require.

We remain, yours, &c.,

G. HOOPER & Co.

To the Provincial Secretary, Nelson.

“Metallurgical Laboratory,
Government School of Mines,
May 14, 1861.

“SIR—I have now the pleasure of enclosing the analysis of the coal ex *Cresswell*, from the West Coast of the Middle Island of New Zealand.

“In composition, this coal is nearly identical with coal occurring in some of the coal measures of this country. The coal from New Zealand is a coking coal, that is, when powdered and heated in a close vessel, it affords a coherent coke, the original bulk of the coal being considerably increased during the operation. The gas which was disengaged appeared to possess a highly illuminating power as far as could be ascertained from the small quantity of coal experimented on, the residual coke amounting to 64.32 per cent.; the quantity of coke, however, obtained on so small a scale must not be taken as an exact indication of the yield by the ordinary processes. The ash of this coal is more than usually white, which shows that the sulphur does not exist in the form of iron pyrites.

Composition of Coal in 100 parts.

Carbon	...	...	...	79.00
Hydrogen	...	...	...	5.35
Nitrogen	...	...	...	0.89
Oxygen	...	...	...	7.71
Sulphur	...	...	...	2.50
Ash	...	...	...	3.50
Water (Hygroscopic)	...	...	...	1.05
				100.00

(Signed) JOHN PERCY.

“J. L. CURTIS, Esq.,
9, Aldermanbury Place, London.”

Extract from “New Zealand Gazette,”
May 15, 1866.

Vulcan Lane, Auckland,
May 6th, 1862.

SIR,—I beg to inform you that I have given the Nelson coals you sent me a fair trial on my forges, and I consider them a good sample of smithy coals, and if they could be got at a reasonable price, I have no doubt they would be in demand.

I have, &c.,

DAVID DAVIDSON,

Coach Builder, Horse Shoer, and
General Smith.

To the Hon. the Colonial Secretary.

May 1st, 1862.

We have taken every opportunity of trying the coal sent us and find it to be of a very superior quality, and a good coal for getting steam. It gives a great heat where there is a proper draft, burns quick, and gives a clear and full fire with very little smoke. It leaves clean firebars, is free from clinkers and does not require much stirring, burning to a white ash; for engine fires we would recommend it to consumers, mixing it with a little firewood we find answers well. It is a good smith's coal; giving a first-rate weld, and our smiths prefer it to New South Wales coals. The sample sent us was small coals.

VICKERY & MASBURY,
Albert Foundry, Auckland.

February 15th, 1862.

SIR,—I beg to state for the information of the Colonial Secretary, that the sample of Nelson coal sent by him for trial is the best New Zealand coal which has come to my notice; the fault with them is that they are too light, but they do not leave any clinkers. I consider them to be better than any of the New South Wales coal with the exception of the Wall End coal.

I am, &c.,

EDWARD WALL.

To the Hon. The Colonial Secretary.