

(No. 81.)



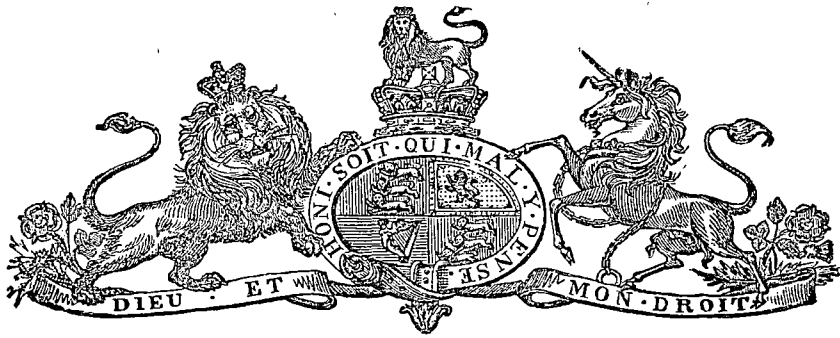
1864.

T A S M A N I A.

T A S M A N I A N C O A L.

EXPERIMENTS.

Laid on the Table by the Colonial Treasurer, and ordered by the House to be printed, 18 August, 1864.



EXPERIMENTS with Tasmanian Coal on board the Steamship "Tasmania."

"Tasmania" Steamer, 30th July, 1862.

SIR,

IN reference to the Hamilton Coal for steam purposes, I beg to state that I gave them a fair trial on board of the *Tasmania* steamer: they gave out very little smoke, and made very little soot; and for the first two hours they gave us a good supply of steam, but after that time the fires began to get choked with clinker and refuse, that our pressure of steam greatly diminished. We commenced to clean a fire every hour after the first two hours, but could not succeed in keeping the working pressure more than 15 lbs. to the square inch instead of 24 lbs. I have sent some of the clinker for your inspection. The per-centage of refuse is at the rate of thirty per cent.

I am, Sir,

Yours respectfully,

J. ROBERTSON, *Engineer, "Tasmania."*

MR. FALCONER.

"Tasmania" Steamer, 25th August, 1862.

SIR,

RESPECTING the quality of the Mount Nicholas Coal, I beg to state that we got a very good head of steam at starting, and which remained for two hours; but after that time the furnaces got filled with clinker and ashes, especially the latter, that the steam was so reduced, I was therefore compelled to mix the Sydney Coal with them to get up the steam to the proper pressure. I have some refuse saved for your inspection: it is at the rate of thirty-eight per cent.

I am, Sir,

Yours respectfully,

J. ROBERTSON, *Engineer, "Tasmania."*

MR. FALCONER.

"Tasmania" Steamer, 28th August, 1862.

SIR,

CONCERNING the quality of the Seymour Coal, I beg to inform you that they burnt remarkably well, and gave a great deal of heat and steam for about two hours; after that time the fires got choked with a light white ash and clinker (especially the former) that steam so reduced I could not get more than two-thirds of the usual speed. The amount of refuse is quite forty per cent. I have sent some of the clinker for you to inspect.

I am, Sir,

Yours respectfully,

J. ROBERTSON, *Engineer, "Tasmania."*

MR. FALCONER.

"*Tasmania*" Steamer, 17th October, 1862.

SIR,

IN respect to the Jerusalem Coal, we tried it at starting. I found I could not get the quantity of steam required by one-fourth: at the expiration of one hour it diminished to one-half. I was therefore compelled to mix them with Sydney Coal, when steam again rose a fourth; but after a time, on account of refuse which had become so great, I could at last only get good fires by mixing a bag with five of the Sydney Coal to get the amount of steam to the full pressure.

I am, Sir,
Yours respectfully,

J. ROBERTSON, *Engineer*, "*Tasmania*."

MR. FALCONER.

"*Tasmania*" Steamer, 31st October, 1862.

SIR,

I BEG to inform you respecting the Don River Coal, the quality is far superior to any of the Colonial Coal I have yet tried. We got a good supply of steam, and it never failed till the time to clean fires, which we have to do with all Coal. The greatest fault is, when we clean a fire it takes a longer time to get a proper degree of heat, which I believe could be overcome with a greater draught, such as a blast-pipe, when I believe they would answer well. The amount of refuse is small, about 14 per cent. If what we had was a true sample, I would prefer them to some of the Sydney Coal.

I am, Sir,
Yours respectfully,

J. ROBERTSON, *Engineer*, "*Tasmania*."

MR. FALCONER.

EXPERIMENTS with Coal at the Launceston Gas Works.

1. New South Wales "Wallsend Coal" produced 11,100 cubic feet of gas per ton. Gas rich and good; coke clean, large, and good.
2. New South Wales "A. A. Company's Coal" produced 10,700 cubic feet of gas per ton. Coke and gas good, but not quite equal to the Wallsend.
3. Tasmanian "River Don Coal" produced 9400 cubic feet of gas per ton. Gas good; coke fair and clean, equal to that from New South Wales Copper Company's Coal; coke gives off sulphur.
4. Tasmanian "River Mersey Coal" produced 9000 cubic feet of gas per ton. Gas similar to that from River Don Coal; coke rather inferior to that from River Don Coal, and appeared to contain more sulphur.
5. Tasmanian "Mount Nicholas Coal" produced 7900 cubic feet of gas per ton. Coke similar to that from Cannel Coal,—light, tolerably clean, but of very little value; gas a little inferior to Don and Mersey.
6. Tasmanian "Seymour Coal" produced 7800 feet of gas per ton. Coke similar to that from Mount Nicholas Coal, but not so clean; gas almost same in quality as Mount Nicholas.
7. Tasmanian "Fingal Coal" produced 7200 cubic feet of gas per ton. Coke similar to that from the two former Coals, but dirtier; gas inferior.
8. Tasmanian "Hamilton Coal" produced 8300 cubic feet of gas per ton. Gas very poor and inferior; no coke; refuse worthless and dirty, with a great deal of sulphur, more than from either Don or Mersey Coals.
9. Tasmanian "Jerusalem Coal" produced 8400 cubic feet of gas per ton. Gas similar to Hamilton, very poor and inferior; no coke; refuse worse than Hamilton; contains much iron pyrites, and gives off a very great deal more sulphur than any of the other Coals.

10. Tasmanian "Dysodile" produced 3800 cubic feet of gas per ton. Gas good.

NOTE.—Nos. 1, 2, 3, 4, 8 and 9 were lately tried when the retorts were at a very high heat, and Nos. 1 and 2 then gave 1200 feet of gas more per ton than some months since, when the retorts were at less heat, and when Nos. 5, 6 and 7 were also tried. The following would be the probable result of the quantity of gas produced from each Coal, if all had been tried in the retorts at a high heat.

	<i>Cubic feet per ton.</i>
1. New South Wales Wallsend Coal	11,100
2. New South Wales A. A. Co.'s ditto	10,700
3. Tasmanian River Don ditto	9400
4. Ditto River Mersey ditto	9000
5. Ditto Mount Nicholas ditto	9000
6. Ditto Seymour ditto	8900
7. Ditto Fingal ditto	8300
8. Ditto Hamilton ditto	8300
9. Ditto Jerusalem ditto	8400

W. R. FALCONER, *Director Public Works.*

ANALYSIS of Tasmanian and other COALS, taken from English printed Report.

	<i>Per cent. Water.</i>	<i>Per cent. Carbon.</i>	<i>Per cent. Hydrogen.</i>	<i>Per cent. Oxygen.</i>	<i>Per cent. Nitrogen.</i>	<i>Per cent. Sulphur.</i>	<i>Per cent. Ashes.</i>	<i>Per cent. Coke.</i>
Best Welsh Merthyr Coal.....	—	90·94	4·28	·94	1·21	1·18	1·45	85·0
Best English Newcastle Coal.....	{ —	85·58	5·31	4·39	1·26	1·32	2·14	65·13
	{ —	86·81	4·96	5·22	1·05	·88	1·08	72·19
New South Wales Newcastle, (13 } years since 1841.)	{ 3·25	82·39	5·32	8·32	1·23	·70	2·04	
Tasmanian South Cape	3·33	63·4	2·89	1·01	1·27	·98	30·45	
Ditto Mount Nicholas	7·24	57·37	3·91	9·10	1·15	·90	27·55	
Ditto Fingal	4·86	57·21	3·38	7·8	1·2	1·32	29·09	
Ditto Jerusalem	3·06	68·18	3·99	5·89	1·62	1·12	19·20	
Ditto Douglas River	4·87	70·44	4·20	9·27	1·11	·70	14·38	
Ditto Tasman's Peninsula.....	4·40	65·54	3·36	1·75	1·91	1·03	26·41	
Ditto Schouten Island	2·17	64·01	3·55	3·38	·94	·85	27·17	
Ditto Whale's Head, South Cape.	1·72	65·86	3·18	7·20	1·12	1·14	21·50	
Ditto Adventure Bay	3·81	80·22	3·05	4·8	1·36	1·9	8·67	

COPY of Report on Tests made with TASMANIAN COALS on board the "Monarch" Steamer.

Date of Trial.	Name of Mine, or where the Coals came from.	Quantities used in getting up Steam in Town and New Norfolk.	Quantity used in backing up fires.	Quantity used when Vessel is under way going to New Norfolk and back.	Totals Coals used.	Totals Ashes and Clinker.	Average Pressure of Steam per Square Inch by Gauge.	REMARKS.
		tons. cwt. qrs. lbs.	tons. cwt. qrs. lbs.	tons. cwt. qrs. lbs.	tons. cwt. qrs. lbs.	tons. cwt. qrs. lbs.	lbs.	
1863.								
Jan. 9.	SYDNEY.....	0 8 2 0	0 4 0 0	1 16 2 0	2 9 0 0	0 7 2 14	11	Very little clinker; a good command of steam.
	TASMANIA.							
12.	Jerusalem.....	0 12 0 0	0 4 0 0	2 2 0 0	2 18 0 0	1 6 0 0	8½	Great deal of clinker; fires full of dirt in three hours' run; hard work to keep steam towards end of run; too much labour with them for sea-going vessels.
13.	Hamilton.....	0 12 0 0	0 2 0 0	1 18 2 0	2 12 2 0	0 18 0 0	10	Not much clinker; fires rather dirty at the end of three hours' run; might do for river steamers or land-engines, with a little extra labour.
16.	Adventure Bay, from Out-crop (1st).	0 12 0 0	0 2 0 0	2 4 2 0	2 18 2 0	1 9 0 0	5	Great deal of soft clinker; furnaces full of dirt in two hours' run; very hard to get steam; had to use 4 cwt. wood to keep the engines in steam.
22.	Port Arthur.....	0 12 0 0	0 4 0 0	1 14 0 0	2 10 0 0	1 7 1 0	4½	Great deal of soft clinker; furnaces full of dirt in 2½ hours' run; very hard to get steam; had to use 4 cwt. wood to keep the engines in steam.
26.	Seymour.....	0 11 0 0	0 4 0 0	2 0 0 0	2 15 0 0	0 14 0 14	11	Very little clinker; most of ashes fall through fire bars by using the pricker; a good command of steam; will do for sea-going vessels with a little extra labour.
Feb. 5.	Fingal.....	0 12 0 0	0 2 0 0	2 6 0 0	3 0 0 0	0 17 0 0	10½	Good deal of soft clinker; fires rather dirty in three hours' run; might do for river steamers or land engines with a little extra labour.
April.	River Don.....	0 11 0 0	0 4 0 0	2 7 0 0	3 2 0 0	0 12 0 14	11	Not much clinker; most of ashes fall through fire bars by using the pricker; a good command of steam; will do for sea-going vessels with a little extra labour.
1864.								
Aug. 16.	Adventure Bay, from end of drive 93 feet into the Coal (2nd).	0 12 0 0	0 2 0 0	2 14 1 10	3 8 1 10	1 12 0 16	5	Not so much clinker or dirt as first sample, but far too much of both to be of any good for steaming purposes.

WILLIAM J. M' MACKAY, *Engineer "Monarch" Steamer.*