

APPENDIX N.

RETURN OF NATIVE COALS USED ON NEW ZEALAND RAILWAYS, FROM 1ST JULY, 1877, TO 30TH JUNE, 1878.

Section.	Trains run, exclusive of Ballast and Specials.	Total Mileage.	Total Weight carried.	Description of Coal used.	Quantity used.	Cost per ton.	Cost per Mile run.	Results as to Consumption and Cost compared with Newcastle Coal, New South Wales.
Auckland-Waikato	26 daily; 10 engines are daily in steam for this service	206479	Tons. 37178	Brown (Waikato)	Tons. 1980	s. d. 8 4½	d. 96	Consumption of Waikato coal is as 115 is to 100 of New South Wales coal. The latter, however, costs 35s. per ton, equal to 3·50d. per mile run as compared with 96d.; hence in using native coal there has been a saving of £2115 during the year. The Waikato coal has since been lowered from 8s. 4½d. to 6s. per ton.
Christchurch	...	11480	...	Brown (Springfield)	114·15	7 3	1·91	Average consumption of New South Wales coal per engine mile, 17·20 lb., cost, 2·61d.; same of native coal 22·39 lb., cost, 1·91d.; saving, 70d.
Greymouth	...	...	...	Coke (Brunner)	156·15 lb.	...	1·57	
Dunedin	Trials. 5	M. Ch. 62 10	1 Mile. 7513	Brown (Walton Park)	3,770	11 6	3·75	Average cost of New South Wales coal per engine mile, 4·50d.; same of three kinds of Otago brown coals, 3·67d.; saving, 83d.
Dunedin	5	62 10	8462·5	Brown (Kaitangata)	2,948	12 0	3	
Dunedin	5	62 10	7888	Brown (Green Island)	4,033	12 6	4·34	

REMARKS.

Auckland-Waikato.—The only alterations required in the engines are three:—1. Closer fire-bars. 2. A pipe to discharge water on the hot ashes in the ashpan to cause evaporation, and thereby keep the bars cool, otherwise they would melt from the intense heat of the brown coal. 3. A spark-catcher on chimney. Total cost, £28.—A. V. MACDONALD, General Manager.

Christchurch.—The fire-boxes of the engines are modified to suit the native coal.—ALLISON D. SMITH, Locomotive Engineer.

Dunedin.—The engine with which the trials were made was an ordinary 10½-inch cylinder, 6 wheels coupled, Class F. The fire-bars were raised nearly level; air space about ¼ of an inch; the engine was also fitted with a spark-catching chimney. All the coal tried made plenty of steam, and, with a larger fire-box and increased bunker room, there would be little difficulty in using any of these coals. The Kaitangata clinkers badly, but this might be overcome by using a rocking-grate. Some inconvenience would also be experienced by passengers from the quantity of sulphur thrown off the Green Island and Walton Park coals. This would be especially felt when going through a long tunnel.—ALEX. ARMSTRONG, Resident and Locomotive Engineer.

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Price 5s.]