The following analyses have been made by Mr. Skey of the samples of coal which I collected:—

1. *Anthracites,—*

| | Acheron. | Ayers's thin seam. |
|---|---|---|
| Fixed carbon... ... ... ... ... | 65·80 | 52·01 |
| Hydro-carbon ... ... ... ... | 5·38 | 3·69 |
| Water ... ... ... ... ... | 4·57 | 4·89 |
| Ash ... ... ... ... ... | 24·25 | 39·41 |
| | 100 00 | 100·00 |

Evaporative power: Acheron, 8·50; Ayers, 6·76.

2. *Altered Brown Coals in which percentage of water is not high,—*

| | Brockley, per Mr. Cox. | Brockley, per Mr. McMillan. | Ayers's thick seam. |
|---|---|---|---|
| Fixed carbon ... ... ... | 49·99 | 53·29 | 62·21 |
| Hydro-carbon ... ... ... | 35·42 | 33·04 | 18·99 |
| Water ... ... ... | 11·79 | 12·65 | 5·20 |
| Ash ... ... ... | 2·80 | 2·02 | 13·60 |
| | 100·00 | 100·00 | 100·00 |

Evaporative power: Brockley (Cox), 6·49; Brockley (McMillan), 6·77; Ayers's thick seam, 8·08.

3. *Altered Brown Coals with high percentage of water,—*

| | Rakaia Mine. | | Rakaia Mine. Upper Seam. | Outcrop of Coal in Cliff on Rakaia River. | |
|---|---|---|---|---|---|
| | | | | No. 1, Lower Seam. | No. 2, Upper Seam. |
| Fixed Carbon ... | 46·06 | 46·70 | 44·43 | 45·30 | 35·30 |
| Hydro-carbon ... | 28·80 | 24·99 | 26·08 | 25·95 | 27·42 |
| Water ... | 18·18 | 18·42 | 19·53 | 26·15 | 18·28 |
| Ash ... | 6·86 | 9·89 | 9·96 | 2·60 | 19·00 |
| | 100·00 | 100·00 | 100·00 | 100·00 | 100·00 |

Evaporative power: Rakaia Mine (1), 5·98; Rakaia Mine (2), 6·07; Rakaia Mine, upper seam, 5·77; lower seam on cliff, which has been worked to small extent, 5·88; upper seam on cliff, also worked to small extent, 4·59.

It will be of interest to reproduce here a report by the Railway Department on the comparative work done by Westport, Shag Point, and Brockley coals, from which it will be seen that the tonnage per train-mile for 1lb. of coal consumed, which is the best test of the comparative value of the coals, is as follows: Westport, 8·22; Brockley, 5·63; Shag Point, 3·74. The evaporative powers of the different coals being: Westport, 8·2; Brockley, 6·5; Shag Point, 5·4.

I have, &c.,

The Director of the Geological Survey. S. Herbert Cox.

---

Hurunui–Bluff Section (New Zealand Railways).

Comparative Statement of Brockley, Shag Point, and Westport Coals used on Locomotives.

| Date. | Eng. No. | Class. | Mileage. | Coal consumed. | Rate per ton. | Value. | Average consumption per mile. | Cost in pence per Engine-mile. | Cost in pence per Ton-mile. | Average tonnage per Train-mile. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | *Brockley.* | | | | | |
| 1881. April 18 to April 30 | 84 | J. | 1,093 | cwt. 400 | £ s. d. 1 2 0 | £ s. d. 22 0 0 | lb. 41·00 | 4·83 | ·025 | 230·82 |
| | | | | | *Shag Point.* | | | | | |
| 1880. Sept. 20 to Oct. 16 | 84 | J. | 2,167 | 1,070 | 0 13 0 | 34 15 6 | 55·30 | 3·85 | ·022 | 207·11 |
| | | | | | *Westport.* | | | | | |
| 1881. April 11 to April 30 | 86 | J. | 1,649 | 420 | 1 4 0 | 25 16 0 | 29·20 | 3.75 | ·020 | 240·10 |

By Authority: George Didsbury, Government Printer, Wellington.—1882.