

(f.) SANDY CREEK.—A seam of coal is exposed in Sandy Creek, which enters the Retaruke a few chains below Dandy Gully. The measurement showed only 4 ft. 8 in. of coal, but, owing to the position of the outcrop, and the amount of debris overlying it, it is quite possible than a greater thickness would be shown further inland, where the seam has not been disturbed. The measurement taken showed 1 ft. 1 in. of good coal, $4\frac{1}{2}$ in. of highly carbonaceous shale with two 1 in. coaly partings, 3 in. of fair coal, 1 in. of clayey selvage, 2 ft. of a good coal, but becoming rather shaly in the lower few inches, then $10\frac{1}{2}$ in. of shale, including a 2 in. clayey band, to the claystone floor.

The seam is at an altitude of 1,727 ft., and dips in a south-easterly direction at an angle of 5° .

The analysis of the sample taken gave the results shown below. A better result could have been obtained had the stone contained been removed.

Fixed carbon	..	..	..	..	..	..	..	36.25
Volatile hydrocarbon	..	..	..	..	..	..	..	37.70
Water	..	..	..	..	..	..	..	12.75
Ash	..	..	..	..	..	..	..	13.30
								100.00
Sulphur	..	..	..	..	..	..	..	2.60

(g.) COAL CREEK No. 1.—In Coal Creek, a left-hand branch of the Retaruke, are two exposures of coal. The lower outcrop, No. 1, which is made up of 2 in. of fair coal, 1 in. of clayey selvage, 1 ft. 6 in. of good coal, $2\frac{1}{2}$ in. of sandy carbonaceous shale, 1 ft. 1 in. of good coal, $\frac{1}{2}$ in. of sandy selvage, $1\frac{1}{2}$ in. of good coal, $\frac{1}{2}$ in. of sandy selvage, 2 ft. 3 in. of good coal, and 11 in. of carbonaceous shale, is 6 ft. 2 in. in thickness.

The outcrop is very much weathered ; so the general sample taken would be likely to show a poorer analysis than one taken in a solid face at some distance from the surface.

The seam dips at an angle of 7° in a south-westerly direction, and has an altitude of 1,508 ft.

The general quality of the seam, including the stony bands, is as shown in (A) below, while the quality of the coal picked free from visible impurity is given in (B) :—

							A.	B.
Fixed carbon	..	..	..	..	..	..	35.98	38.68
Volatile hydrocarbons	..	..	..	..	..	..	36.89	41.49
Water	..	..	..	..	..	..	14.61	13.26
Ash	..	..	..	..	..	..	12.52	6.57
								100.00
Sulphur	..	..	..	..	..	..	2.70	3.01
Calories per gram	..	..	..	..	..	..	..	5,478
British thermal units per pound	..	..	..	..	..	..	..	9,860
Evaporative power per pound	..	..	..	..	..	..	..	10.20 lb.
Practical evaporative power (60 per cent. efficiency)	..	..	..	..	..	..	..	6.12 „

(h.) COAL CREEK No. 2.—The upper seam (No. 2) exposed in Coal Creek is 5 ft. 9 in. in thickness. The coal seems to be of a good quality, and is of a hard, bright variety. Probably the whole of it could be mined with the exception of 1 ft. at the bottom, which is highly argillaceous. At distances of 1 ft. 5 in., 2 ft. 4 in., and 2 ft. 8 in. respectively from the top there are three selvages of clayey material, but none of them is more than $\frac{1}{4}$ in. in thickness.

The seam dips at an angle of only 2° in a south-easterly direction, and is at an altitude of 1,612 ft.

The analyses of (A), the sample containing the stony bands, which was taken from the upper 4 ft. 9 in., and of (B), a sample taken from the same part, but picked free of stony bands, are given below :—

							A.	B.
Fixed carbons	..	..	..	..	..	..	34.37	40.75
Volatile hydrocarbons	..	..	..	..	..	..	38.96	38.80
Water	..	..	..	..	..	..	12.07	12.98
Ash	..	..	..	..	..	..	14.60	7.47
								100.00
Sulphur	..	..	..	..	..	..	2.66	2.49
Calories per gram	..	..	..	..	..	..	..	5,359
British thermal units per pound	..	..	..	..	..	..	..	9,646
Evaporative power per pound	..	..	..	..	..	..	..	9.99 lb.
Practical evaporative power (60 per cent. efficiency)	..	..	..	..	..	..	..	5.99 „

(i.) DANDY GULLY No. 1.—There are two exposures of coal at the foot of a bluff in Dandy Gully, one on either side of the stream at about 30 chains from its junction with the Retaruke. It is probable that these two exposures belong to one and the same seam, broken through by a fault, which roughly follows the course of the stream. The upper seam is about 60 ft. above the lower one.

Measurements of the lower seam (No. 1) in Dandy Gully gave the following section : 3 in. of fair coal, $\frac{1}{2}$ in. of clayey selvage, $1\frac{1}{2}$ in. of carbonaceous shale, 3 in. of fair coal, $\frac{1}{4}$ in. of clayey selvage, 2 ft. of good coal, $\frac{1}{2}$ in. of carbonaceous sandstone, 2 ft. 3 in. of good coal, 8 in. of highly carbonaceous shale with some good coal mixed, 4 in. of a soft clayey band, 7 in. of good coal, and 3 in. of carbonaceous sandstone, making a total thickness of 7 ft. 10 in.

The seam dips in a south-easterly direction at an angle of 4° , and is at an altitude of 1,621 ft.