

It should be distinctly understood that no calculations based upon mere analyses can take the place of trials of the coals in the large way as steam and gas-producers, for smelting, heating iron, or for any other practical use; for though, as a rule, these theoretical values furnish us with a general idea of the use to which a coal is best fitted, it is of not unfrequent occurrence that theory and practice differ greatly. For further information on practical values of fuel, I would refer the reader to the works of Prof. W. R. Johnson, and to the second section of this Report.

Theory and practice.

COALS OF THE WEST SIDE OF THE EAST RIVER.

COALS FROM THE MAIN SEAM, ALBION MINES.

No favourable opportunity offered during my stay in this district for an examination of samples of the coal of the Main seam, which would enable me to satisfactorily separate the peculiar varieties of the different benches. I therefore reproduce the careful section prepared by Dr. Dawson, which well illustrates the character of all the different descriptions of coal of this seam.*

This section was prepared from an examination of a column of coal from the Main seam, extracted for the New York Industrial Exhibition of 1852 by Mr. Henry Poole, then manager of the Albion mines.

SECTION OF MAIN SEAM, BY DR. J. W. DAWSON.

	Ft.	In.	
1. Roof shale; vegetable fragments and attached <i>Spirorbis</i> (in specimen) ..	0	3	Dawson's section of the Main seam.
2. Coal, with shaly bands	0	6½	
3. Coal, laminated; layers of mineral charcoal and bright coal; band of ironstone balls in bottom	2	0	
4. Coal, fine cubical and laminated; much mineral charcoal	3	2	
5. { Carbonaceous shale and ironstone, with layers of coarse coal (<i>holing stone</i>), remains of large fishes and coprolites. This bed varies much in thickness	0	4½	
6. { Coal laminated and cubical; coarse towards bottom	9	3	
7. Ironstone and carbonaceous shale in the coaly layers, and trunks of <i>Lepidodendron</i> , <i>Ulodendron</i> , <i>Sigillaria</i> , etc., all prostrate	0	8	
8. Coal, laminated as in No. 6; line of ironstone balls in bottom	1	2	
9. Coal, laminated and cubical; a few small ironstone balls; many vascular bundles of ferns in this and underlying coal	6	7	
10. Ironstone and pyrites	0	3	
11. Coal, laminated and cubical, as above	10	3	
12. Coal, coarse layers of bituminous shale and pyrites	1	0	
13. Coal, laminated, with a fossil trunk in pyrites	2	1	
14. Coal, laminated and cubical, with layers of shale passing downwards into black slickensided underlay, with coaly bands	2	3	

* Acadian Geology, second edition, pp. 331-32.