

TABLE SHOWING THE GRADUAL CHANGE IN COMPOSITION FROM WOOD TO CHARCOAL¹⁴⁴

Substance	Carbon.	Hydrogen.	Oxygen.	Disposable Hydrogen, i.e., over and above what is required to form water.
1. Wood (mean of several analyses).....	100	12.18	83.07	1.80
2. Peat (" " ").....	100	9.85	55.67	2.89
3. Lignite (mean of 15 varieties).....	100	8.37	42.42	3.07
4. Tan-yard coal of S. Staffordshire basin	100	6.12	21.23	3.47
5. Steam coal from the Tyne.....	100	5.91	18.32	3.62
6. Pentrefelin coal of S. Wales.....	100	4.75	5.28	4.09
7. Anthracite from Pennsylvania, U. S...	100	2.84	1.74	2.63

Coal occurs in seams or beds intercalated between strata of sandstone, shale, fireclay, etc., in geological formations of Palæozoic, Secondary, and Tertiary age. It should be remembered that the word coal is rather a popular than a scientific term, being indiscriminately applied to any dense, black mineral substance capable of being used as fuel. Strictly employed, it ought only to be used with reference to beds of fossilized vegetation, the result either of the growth of plants on the spot or of the drifting of them thither.

The following analyses show the chemical composition of peat, lignite, and some of the principal varieties of coal:¹⁴⁵

	Peat Devon- shire	Lignite Bovey, Tracey, Devon	Caking Coal North- umber- land	Non-Cak- ing Coal S. Staf- fordshire	Cannel Coal Wigan	Anthra- cite S. Wales
Carbon	54.02	66.31	78.69	78.57	80.07	90.39
Hydrogen.....	5.21	5.63	6.00	5.29	5.53	3.28
Oxygen.....	28.18	22.86	10.07	12.88	8.08	2.98
Nitrogen.....	2.30	0.57	2.37	1.84	2.12	0.83
Sulphur.....	0.56	2.36	1.51	0.39	1.50	0.91
Ash.....	9.73	2.27	1.36	1.03	2.70	1.61
Specific gravity.....	0.850	1.129	1.259	1.278	1.276	1.392

¹⁴⁴ Percy's "Metallurgy," vol. i. p. 268.¹⁴⁵ From Percy's "Metallurgy," vol. i.