albertite, looking like bitumen or asphalt, but not readily fusing like it in a candle. It occupies rents in the rock, instead of constituting layers. A similar substance, called *grahamite*, occurs under similar conditions in the Coal-measures of West Virginia, 20 miles south of Parkersburg. It is partly columnar in fracture at right angles to the walls of the vein. Both are supposed to have been made from the oxidation of mineral oil.

	Carbon	Hydr.	Ox.	Nitr.	Sulph.	Ash	Analysts
1. Anthracite, Pennsylvania.....	90·45	2·43	2·45	—	—	4·67,	Regnault.
2. Anthracite, Pennsylvania.....	92·59	2·63	1·61	0·92	—	2·25,	Percy.
3. Anthracite, South Wales.....	92·56	3·33	2·53	—	—	1·58,	Regnault.
4. Caking Coal, Kentucky.....	74·45	4·93	13·08	1·03	0·91	5·00,	Peters.
5. Caking Coal, Nelsonville, Ohio..	73·80	5·79	16·58	1·52	0·41	1·90,	Wormley.
6. Caking Coal, South Wales.....	82·56	5·36	8·22	1·65	0·75	1·46,	Noad.
7. Caking Coal, Northumberland..	78·69	6·00	10·07	2·37	1·51	1·36,	Tookey.
8. Non-caking, Kentucky.....	77·89	5·42	12·57	1·82	3·00	2·00,	Peters.
9. Non-caking, "Block Coal," Ind.	82·70	4·77	9·39	1·62	0·45	1·07,	Cox.
10. Non-caking, Brier Hill, Ohio....	78·94	5·02	11·50	1·58	0·56	1·45,	Wormley.
11. Non-caking, S. Staffordshire....	76·40	4·62	17·43	—	0·55	1·55,	Dick.
12. Non-caking, Scotland.....	76·08	5·31	13·33	2·09	1·23	1·96,	Rowney.
13. Cannel Coal, Breckenridge.....	68·13	6·49	5·83	2·27	2·48	12·30,	Peters.
14. Cannel Coal, Wigan.....	80·07	5·53	8·10	2·12	1·50	2·70,	Vaux.
15. Cannel Coal, "Torbanite".....	64·02	8·90	5·66	0·55	0·50	20·32,	Anderson.
16. Bituminous Coal, Wyoming....	73·55	4·17	17·20	1·93	1·18	1·86,	.....
17. Bituminous Coal, Wyoming....	75·20	4·74	10·37	1·37	1·11	7·20,	.....
18. Albertite, Nova Scotia.....	86·04	8·96	1·97	2·93	*trace*	0·10,	Wetherell.
19. Brown Coal, Bovey.....	66·31	5·63	22·86	0·57	2·36	2·27,	Vaux.
20. Brown Coal, Wittenberg.....	64·07	5·03	27·55	—	—	3·35,	Baer.
21. Peat, light brown (imperfect)...	50·86	5·80	42·57	0·77	—	—	Websky.
22. Peat, dark brown.....	59·47	6·52	31·51	2·51	—	—	Websky.
23. Peat, black.....	59·70	5·70	33·04	1·56	—	—	Websky.
24. Peat, black.....	59·71	5·27	32·07	2·59	—	—	Websky.

No. 13, the Breckenridge cannel, of Hancock County, Ky., consists, when the ash is excluded, of carbon 82·36, hydrogen 7·84, oxygen 7·05, nitrogen 2·75; and the Bog-head cannel of Scotland, called also *torbanite*, contains carbon 80·39, hydrogen 11·19, oxygen 7·11, nitrogen and sulphur 1·31.

The "Mineral charcoal" differs little in composition from ordinary bituminous coal; there is less hydrogen and oxygen. Rowney obtained, for that of Glasgow and Fifeshire, carbon 82·97, 74·71, hydrogen 3·34, 2·74, oxygen 7·59, 7·67, ash 6·08, 14·86. The nitrogen is included with the oxygen; it amounted to 0·75 per cent in the Glasgow charcoal. Exclusive of the ash, the composition is, carbon 88·36, 87·78, hydrogen 3·56, 3·21, oxygen and nitrogen 7·28, 9·01.

The oxygen in a coal, which, as the table shows, varies from about 10 pounds to 15 in a hundred in the ordinary bituminous coals, is so much waste material as far as the heating purposes of the coal are concerned, because the atmosphere is at hand to supply all that combustion requires. The moisture also causes loss of heat, because of the amount required to evaporate and expel it.

The following are other analyses of anthracite and bituminous coal; they are a few from the many by McCreath, of the Pennsylvania Geological Survey. The amount of volatile hydrocarbons is given in the second column.