

RAILROADS

The following table shows the principal constituents of the coal used by the leading railways, the only percentages not shown in the table being made up of ash, moisture and sulphur:

	Average Fixed Carbon	Volatle Matter	Average Heat Units Per Pound
ANTHRACITE			
Average of four districts.....	83.77	3.86	13,169
Semi-BITUMINOUS			
Average of six districts in Pennsylvania and West Virginia.....	73.75	18.15	14,673
Pocahontas.....	74.39	21.00	15,070
BITUMINOUS			
Average of eighteen districts in Pennsyl- vania, Ohio, West Virginia, Kentucky, Tennessee, Illinois.....	52.25	34.75	13,000
Highest of above.....	60.99	32.53	15,200
Lowest of above.....	37.10	35.65	13,800
ILLINOIS BITUMINOUS			
Thirty-seven districts.....	48.02	35.58	12,210
IOWA BITUMINOUS			
Five districts.....	37.47	38.44	13,400
MISSOURI BITUMINOUS			
Five districts.....	48.73	37.67	14,150

STATES

State	Kind of Coal	Mois- ture	Volatle Matter	Fixed Carbon	Ash	Sul- phur
Pennsylvania	Youghiogheny	1.03	36.49	59.05	2.61	0.81
"	Cornellsville	1.26	30.10	59.61	8.23	0.78
West Virginia	Onimont	0.76	18.65	79.26	1.11	0.23
"	Fire Creek	0.61	22.34	75.02	1.47	0.36
E. Kentucky	Peach Orchard	4.60	35.70	53.28	6.42	1.08
"	Pike County	1.80	26.80	67.60	3.80	0.97
Alabama	Cahaba	1.66	33.28	63.04	2.02	0.33
"	Pratt Co.'s	1.47	32.29	59.50	6.73	1.22
Ohio	Hooking Valley	6.59	35.77	49.64	8.00	1.59
"	Muskingum "	3.47	37.88	53.30	5.35	2.24
Indiana	"	8.50	31.00	57.50	3.00	
"	Block	2.50	44.75	51.25	1.50	
W. Kentucky	Nolin River	4.70	33.24	54.94	11.70	2.54
"	Ohio County	3.70	30.70	45.00	3.16	1.24
Illinois	Big Muddy	6.40	30.60	54.60	8.30	1.50
"	Wilmington	15.50	32.80	39.90	11.80	
"	" screenings	14.00	28.00	34.20	23.80	
"	Duquoin	8.90	23.50	60.60	7.00	

NOTE: Two samples were taken from each of the great coal-producing states, excepting Illinois, from which four were taken.

Thermal Value of Fuel.—The thermal value of fuels is measured by the number of heat units they contain. The usual standard of measurement is the British thermal unit, designated by letters, thus: B.t.u. A unit is the amount of heat needed to raise the temperature of one pound of pure water one degree F., at or near 39° F., which is the temperature of the maximum density of water. In order to understand a few terms used in chemistry, which must be employed in explaining heat units, the following explanations are given: Elements are substances that cannot be decomposed into simpler substances. Carbon, iron, sulphur, hydrogen and nitrogen are ele-