

Professor H. D. Rogers states approximately the amount of coal in the most important coal-fields in the world, as follows :

Belgium	36,000,000,000 tons.
France,	59,000,000,000 tons.
British Isles,	190,000,000,000 tons.
Pennsylvania,	316,400,000,000 tons.
Appalachian coal-field,	1,387,500,000,000 tons.
Indiana, Illinois, and Kentucky,	1,277,500,000,000 tons.
Iowa, Missouri, and Arkansas,	739,000,000,000 tons.
Total amount in North America,	4,000,000,000,000 tons.

In some parts of the world they are beginning to calculate how long their supplies of coal will last. In England not less than 6,000,000 tons of coal are yearly raised from the mines of Northumberland and Durham ; at which rate they will be exhausted in about 250 years. In South Wales, however, is a coal field of 1,200 square miles, with 23 beds, whose total thickness is 95 feet ; and this will supply coal for 2,000 years more. In North America there is twenty-one times as much coal as in Great Britain. Estimating our annual consumption of coal at twelve millions of tons, there is coal enough in North America to last 333,333 years.*

5. *The Permian Series.*

In Germany and England the Permian Series presents two very distinct groups of rocks ; the lowest is made up of sandstones of various colors, with slates containing copper, and the highest is composed of magnesian limestones of various qualities.

The Permian system consists of numerous strata of great extent in Russia, (700 miles long and 400 broad), in the ancient kingdom of Permia, made up of common and magnesian limestones, with gypsum and rock salt conglomerates, red and green gritstones, shales, and copper ore, lying in a trough of the carboniferous strata, and below the Triassic system.

Until quite recently it was supposed that there were no Permian strata in North America. Quite extensive deposits, however, have been found in Kansas, Illinois, and Nebraska. Lithologically they are limestones, shales, and layers of clay.

Professor Emmons claims to have discovered Permian strata in North Carolina, and supposes that a large part of the sandstones along the Atlantic slope of the Appalachians are of the same age. It is probable that some of the lowest members of this deposit are of this age, but it needs positive proof.

III. MESOZOIC SYSTEM.

Under Mesozoic rocks are included all those from the top of the Permian to the base of the Tertiary. These are, 1. The Trias

* Great Britain mined in 1854, 64,661,401 tons of coal, and produces now about 67,000,000 tons annually. The United States produced in 1857, 10,500,000 tons. In the whole world it is estimated that about 100,000,000 tons of coal are annually consumed.