

vation is only a few feet, as ascertained by actual survey. The general elevation of this plain, is above 800 feet above the sea. It is crossed by the great rivers Missouri, Mississippi, Ohio, and their branches. As we go westerly up the Missouri and Arkansas to the sand plains, we find nearly the same elevation. The great and numerous rivers that cross this plain, instead of forming valleys, do but indent narrow lines or grooves into its surface, hardly sufficient to retain their floods. As the currents of these rivers roll on in their courses, they sink deeper into the plain; hence the large rivers Ohio, Missouri, and others, seem bordered with hills of several hundred feet elevation, towards their mouths; but the tops of these hills are the level of the great plain.

"The base of this whole extent of plain appears to be transition or mountain limestone, in nearly horizontal beds: it has been perforated to the depth of 400 and 600 feet. It contains trilobites, orthoceratites, the productus, and other fossils that characterise the transition limestone. The uppermost stratum of limestone is not many feet below the surface, and supports, nearly over its whole extent, strata of bituminous coal and saline impregnations. The limestone extends under the Alleghany Mountains in the east, and the sand plains on the west, and rest on the granite ridges of Canada on the north.

"This coal field would cover half Europe, having an extent of 900,000 square miles; or 1500 miles in length, by 600 miles in breadth. The coal is pure, and lies above the beds of the rivers, and costs about twenty cents (the fifth part of a dollar) per ton to quarry it. Iron ore abounds generally, but in Missouri there is a mass of this ore 300 feet in height, and five miles in extent, which yields 75 per cent. of fine malleable iron. The lead districts of Missouri and Illinois cover 200 square miles." It is not mentioned in the above account, but there can be no doubt, that the mines are situate in the limestone, which identifies that formation still farther with the mountain limestone of England.

In the geological position and physical structure of this vast coal field, we may, I think, trace, in a satisfactory manner, the mode of its formation. Were the outlet of the waters that drain this large surface to be only partially closed (as we may suppose the mouth of the Mississippi to be) by an earthquake or upheaving of the surface, then in the time of annual periodical inundations, the whole extent of this level plain would be covered with fresh water, and form an inland sea, which would gradually become dry as the inundations subsided. This plain would then become a vast swamp, suited for the rapid development of vegetation. In this manner thick beds of decomposed vegetable matter might every year be formed, and subsequently covered with strata of mud and earthy matter, deposited during the inundation.

Now let us advert to what actually takes place in the lower valley, or plain of the Mississippi, every year. When those mighty rivers,