

ations of Messrs. Dickeson and Brown, who state, "that when the woods are burning, after an unusually dry season, pits are found burnt into the ground as far as the fire can descend without coming into contact with water, and scarcely any residuum or earthy matter is left."* They also state that at the bottom of all the cypress swamps or brakes, there is found a peculiar layer of tenacious blue clay, which forms the foundation, or floor, on which the vegetable matter accumulates. We may conclude, therefore, that as the roots of the cypress penetrate far beneath the soil, and project horizontally far and wide, those of one tree interlacing with another, such root-bearing beds of argillaceous loam must be very analogous to what are called fire-clays, so well known to the geologist as occurring underneath almost every seam of coal in the ancient carboniferous rocks.†

Other points of analogy might also be indicated between the deposits, whether of organic or inorganic matter, now accumulating in the valley-plain and delta of the Mississippi, and those of the ancient carboniferous rocks. When, for example, depressions are suddenly caused, as in the "sunk country" before described, certain wooded areas being submerged, the lower parts of the erect trees become enveloped with sand and mud, the upper portions rotting away, as must have happened in the case of the celebrated fossil forest of Dixon-fold, in Lancashire, belonging to the ancient coal-measures.‡ In the modern alluvial plain, also, river-sand will be often thrown down, as the Mississippi shifts its course over spaces on which pure vegetable matter had been previously accumulating for hundreds or thousands of years, just as we find sandstone sometimes resting immediately upon the old coal-seams; and, if there be a long succession of downward movements, the thickness of strata, all formed in shallow water or in swamps, may be indefinitely great. Should the hilly country, moreover, be distant, pebbles will no more be seen in the modern

* Silliman's Journal, Second Series, vol. v. p. 17, January, 1848.

† In my former "Travels," I have alluded to the fire-stones with *Stigmara* (now acknowledged to be the root of *Sigillaria*), underlying the American coal-seams, as they do those of South Wales, 3000 miles distant. "Travels in North America," vol. i. p. 62.

‡ Proceedings of Geol. Society, 1839, p. 139.