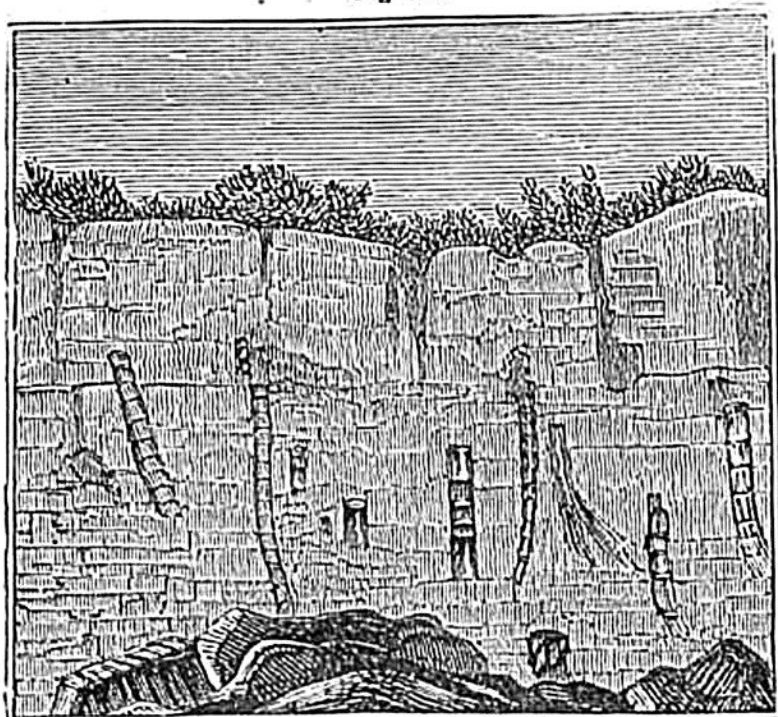


Fig. 490.



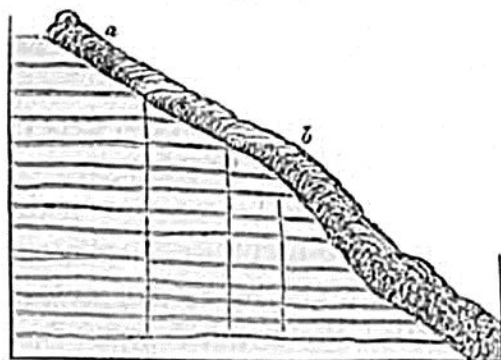
Section showing the erect position of fossil trees in coal sandstone at St. Etienne. (Alex. Brongniart.)

and raised by new accessions of sediment, as may happen in swamps near the banks of a large river in its delta. Trees which delight in marshy grounds are not injured by being buried several feet deep at their base; and other trees are continually rising up from new soils, several feet above the level of the original foundation of the morass. In the banks of the Mississippi, when the water has fallen, I have seen sections of a similar deposit in which portions of the stumps of trees with their roots *in situ* appeared at many different heights.*

When I visited, in 1843, the quarries of Treuil above-mentioned, the fossil trees seen in fig. 490 were removed, but I obtained proofs of other forests of erect trees in the same coal-field.

Snags.—In 1830, a slanting trunk was exposed in Craighleith quarry, near Edinburgh, the total length of which exceeded 60 feet. Its diameter at the top was about 7 inches, and near the base it measured 5 feet in its greater, and 2 feet in its lesser width. The bark was converted into a thin coating of the purest and finest coal, forming a striking contrast in color with the white quartzose sandstone in which it lay. The annexed figure represents a portion of this tree, about 15 feet long, which I saw exposed

Fig. 491.



Inclined position of a fossil tree, cutting through horizontal beds of sandstone, Craighleith quarry, Edinburgh. Angle of inclination from *a* to *b* 27° .

15 feet long, which I saw exposed