base and thirty six feet long, lying nearly horizontally between the strata of sandstone. Its composition was carbonate of lime 60, oxide of iron 18, carbon 9, alumine 10.

Another fossil tree has been recently discovered in the quarry of Craigleith, near Edinburgh, whose geological position is in the mountain limestone, and considerably below the great coal basin of the Lothians. Its elevation is seventy five feet above the level of the sea, and its roots were in the bottom of the quarry. The length of the stem was forty seven feet—a large branchless trunk—in some parts much flattened, so as to afford an elliptical section. At the largest place, its diameter was five feet by two, and at the smallest, nineteen inches by sixteen. Its branches, and many feet of its top, are gone; it was probably sixty feet long, and the incumbent mass of sandstone appears to have been one hundred feet thick; the bark is converted into coal. The composition of this tree is, carbonate of lime 62, carbonate of iron 33, carbon 5, with the sp. gr. 2.87. It was a conifera.

In the great coal-field of the North, in Britain, fossil plants are usually found lying parallel to the strata, but much broken and compressed, and their parts scattered; but some vigorous plants, generally Sigillariæ, appear to have been so strong as to resist the torrents and to remain in their natural position.

It results from Mr. Witham's discoveries, that plants with their organs of fructification apparent, (gymnospermous phanerogamic,) are much more frequent in the coal formations than has been imagined, and that proper trees, of true ligneous fibre and of great size, existed even earlier than the bituminous coal.*

### *More recent fossil trees and plants.*

Among the more recent secondary rocks, vegetables increase in quantity and variety, as we approach the tertiary, in which we find inhumed wood in the form of lignite, or bituminized wood, or wood slightly mineralized; eventually we find wood unchanged; and thus we trace the vegetable families, from their commencement on the borders of the primitive, quite down to our own times. In the loose sand, gravel, and detritus, we often find trees, at every depth, between the surface of the ground and the fixed rocks below; the surface is often covered by bowlders of travelled stones, and the deposition is evidently diluvial.

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* Am. Jour. Vol. XXV, p. 109.