

the formations of mechanical origin as we proceed westward. (See above, pp. 84 and 86, vol. i.)

The seams of coal at Frostburg are numerous, there being three workable, besides nine or ten smaller beds. Under several of these, I found clays with *Stigmaria*, usually, as elsewhere, unaccompanied by any other fossil plants. At one spot, however, on the north-eastern confines of the coal basin, about fifty feet above the millstone grit, I saw a bed of coal, four feet thick, resting on a blue clay containing *Stigmaria*. This clay was twenty feet thick, and as usual without slaty texture, and the rootlets, commonly called leaves, radiated in all directions from the stems of the *Stigmaria*. Dispersed plentifully through the same clay, I found the leaves of two species of *Pecopteris*, and an *Asterophyllite*, the only instance, in several hundreds which I examined in the United States, where ferns and other coal plants were associated with the *Stigmaria*, imbedded in its natural position, and not having been drifted.

Higher in the series, but still 300 feet below the principal coal seam, an interesting example occurs of a black shale full of marine shells, resting on a seam of coal about three feet thick. When we have once embraced the doctrine of the origin of pure coal from terrestrial plants, which grew like peat in the spots where we now find them, the contact of an incumbent regular bed of black bituminous slate, ten or twelve feet thick, abounding in sea shells perfectly preserved, is highly interesting. Captain George Green, superintendent of the mines here, kindly presented me with a collection of these shells, which are referable to no less than seventeen species. Some are identical with,