the coralline oolite and calcareous grit), they are often silicified: very frequently in clays pyrites aids the beauty, but diminishes the duration of the specimens. In the shales of a coal tract plants of all kinds are converted to coal of different qualities: the same effect happens in the fine grained sandstones of the coal tracts; but in millstone grit, and other coarse sandstones, the only reliques of the plants are the external impressions of them, and a brown carbonaceous or ochraceous powder. In the upper coal measures of Lancashire, and in the shales of the peculiar oolitic strata of Yorkshire, we have found thin leaves yet retaining their elasticity, and changed to a brown translucent pellicle, in which the impressions of the superficial respiratory pores might be clearly seen. In other cases the nervures and seed vessels of fern leaves are perfectly retained in shale, fine sandstone, and ironstone.

The distribution of fossil plants in the earth is remarkable on many accounts. Being for the most part of terrestrial races, it is not surprising that they should be found principally in the sedimentary strata of sandstone and clay, for it is always associated with such sediments that they pass at this day with the Mississippi and other rivers to the ocean. So strict, however, is this connection, that in a series of alternating lime-stones, sandstones, and shales, the two latter may be richly stored with land plants, and the former filled with marine shells; neither partaking in the treasures of the other. It must be considered much in favour of this view of the dispersion of fossil plants by rivers entering the sea, that the trees are usually in fragments, the branches and leaves scattered, and roots generally wanting altogether. One case, indeed, has been apparently established, of the trees being buried in the very spot where they grew, by submergence of the land, " the Dirt Bed " of the Isle of Portland: but this is certainly an exceptional case; the rule is undoubtedly contrary.

Those who expect, consistently with general proba-