

the cinders beneath our grates, traces of fossil plants, whose cavities, having been filled with silt, at the time of their deposition in the vegetable mass, that gave origin to the Coal, have left the impression of their forms upon clay and sand enclosed within them, sharp as those received by a cast from the interior of a mould.

A still more decisive proof of the vegetable origin, even of the most perfect bituminous Coal has recently been discovered by Mr. Hutton; he has ascertained that if any of the three varieties of Coal found near Newcastle be cut into very thin slices and submitted to the microscope, more or less of vegetable structure can be recognized.*

* "In these varieties of coal," says Mr. Hutton, "even in samples taken indiscriminately, more or less of Vegetable Texture could always be discovered, thus affording the fullest evidence, if any such proof were wanting, of the Vegetable Origin of Coal.

"Each of these three kinds of coal, besides the fine distinct reticulation of the original vegetable texture, exhibits other cells, which are filled with a light wine-yellow-coloured matter, apparently of a bituminous nature, and which is so volatile as to be entirely expelled by heat, before any change is effected in the other constituents of the coal. The number and appearance of these cells vary with each variety of coal. In caking coal, the cells are comparatively few, and are highly elongated.—In the finest portions of this coal, where the crystalline structure, as indicated by the rhomboidal form of its fragments, is most developed, the cells are completely obliterated.

"The slate-coal, contains two kinds of cells, both of which are filled with yellow bituminous matter. One kind is that already noticed in caking coal; while the other kind of cells constitutes groups of smaller cells, of an elongated circular figure.