into carbon, and still exhibiting the structure of the plants from which it was derived. When sections of coal, obtained by the process above described, are viewed through the microscope, the fine, reticulated structure of the original is distinctly visible, the cells of which are filled with a light, amber-coloured matter, apparently of a bituminous nature, and so volatile as to be readily expelled by heat, before the texture of the coal is destroyed.*

Mr. Parkinson, whose work abounds in interesting observations and experiments on the fossilization of vegetable substances, has shown that the formation of coal has depended upon a change, which all vegetable matter undergoes when exposed to heat and moisture, under circumstances that exclude the air, and prevent the escape of the more volatile principles.† In this condition, a fermentation, which he terms the bituminous, takes place, of which the phenomenon exhibited by *mow-burnt hay* is a familiar example. The production of sugar, and, by continuance of the process, of vinegar, is effected by vegetable fermentation in the open air. In the process of hay-making, the saccharine fermentation is induced, and the grass acquires a peculiar fragrance and sweetness; but in wet seasons, when the hay is prematurely heaped together, the volatile principles cannot escape from the inner mass of vegetable matter, heat is rapidly

* Mr. Hutton.

† Organic Remains of a Former World, vol. i. p. 181.