

secretion have been detected. The diamond, which is pure charcoal, is probably a vegetable secretion, that has acquired a crystalline structure by electrochemical action (*Wond.* p. 638.). When the microscope is more extensively employed in investigations of this kind, it is probable that the siliceous spines and stars, so abundant on the foliage of many plants (as the *Deutzia*, *Lithospermum officinale*, &c.) will be found fossil, for they are as indestructible as the spines of sponges and other animal remains, so commonly imbedded in flint and chalcedony.

But vegetables occur not only as petrified stems, leaves, and fruits, associated with other remains in the strata, but in beds of great thickness and extent, consisting wholly of plants transmuted, by that peculiar process which vegetable matter undergoes when excluded from atmospheric influence, and under great pressure, into carbonaceous masses, called Lignite, and Coal. And there are intermediate stages of this process, in which the form and structure of the trees and plants are apparent; and a gradual transition may be traced, from the peat-wood and submerged forests of modern epochs, in which leaves, fruits, and trunks of indigenous species are preserved, to those accumulations of the extinct species of an ancient Flora, whose vegetable origin the eye of science can alone detect.

For the collection and preservation of vegetable fossils, with the exception of those which are permeated with pyrites, (as those of the Isle of