

pearances which completely indicate such a change, namely, beds of coal, and the fossil remains of land animals. The carbonisation of roots of trees in clefts of rocks, and of marsh plants in peat-bogs, which takes place, as it were, under our own immediate observation ; the transitions of bituminous wood into pitch-coal, the frequent presence of vegetables partly converted into coal, in the neighbourhood of beds of coal, and which are more abundant the nearer they are to these beds ; and, finally, the chemical nature of coal, which is similar to that of vegetables, go to prove the vegetable origin of the older and independent coal formation.

Though some fossil vegetables might derive their origin, by being floated to quarters more or less remote from their native soil, as we find to be the case in many islands of the South Sea, and on other shores ; on the other hand, neither the breadth and extent of beds of coal, nor the erect position in which fossil trees and reed plants are not unfrequently found in their neighbourhood, coincide with such an explanation. The plants, from which these beds were formed, once stood and grew in the place where they were buried ; and, from these remains, we infer that they were entirely land plants, tree-ferns, *Lycopodia*, and other cryptogamia. It also appears undeniable, that the land, being once dry, was, during a longer or shorter time, covered with luxuriant vegetation ; that it was afterwards overflowed with water, and then became dry land again. But, was this overflow of water produced by a sudden, violent, and universal catastrophe, such as we consider the deluge ? Many circumstances leave room for opposite conjecture. If it is probable that the older or black coal