

As no leaves have yet been found with the fossil Cycadeæ under consideration, we are limited to the structure of their trunk and scales, in our search for their distinguishing characters.

I have elsewhere (Geol. Trans. London, N. S. vol. ii. part iii. 1828) instituted a comparison between the internal structure of two species of these fossil trunks, and that of the trunks of a recent *Zamia* and recent *Cycas*.*

a temporary forest, during an interval which is indicated by the thickness of a bed of black mould, called the Dirt bed, and by the rings of annual growth in large petrified trunks of prostrate trees, whose roots had grown in this mould.

Thirdly. We find this forest to have been gradually submerged, first beneath the waters of a freshwater lake, next of an estuary, and afterwards beneath those of a deep sea, in which Cretaceous and Tertiary strata were deposited, more than 2000 feet in thickness.

Fourthly. The whole of these strata have been elevated by subterranean violence, into their actual position in the hills of Dorsetshire.

We arrive at similar conclusions, as to the alternate elevation and depressions of the surface of the earth, from the erect position of the stems of *Calamites*, in sandstone of the lower Oolite formation on the eastern coast of Yorkshire. (See Murchison. Proceedings of Geol. Society of London, p. 391.)

* M. Ad. Brongniart has referred these two fossil species to a new genus, by the name of *Mantellia nidiformis* and *Mantellia cylindrica*; in my paper, just quoted, I applied to them the provisional name of *Cycadeoidea megalophylla* and *Cycadeoidea microphylla*; but Mr. Brown is of opinion, that until sufficient reasons are assigned for separating them from the genus *Cycas* or *Zamia*, the provisional name of *Cycadites* is more appropriate, as expressing the present state of our knowledge upon this subject. The name *Mantellia* is already applied by Parkinson (Introduction to Fossil Org. Rem. p. 53) to a genus of Zoophytes, which is figured in Goldfuss, T. vi. p. 14.