

2. ERIAN FLORA.

(1) *Upper Erian Sub-Flora* :

This corresponds to the Catskill and Chemung of the New York series, and to the Upper Devonian of Europe.

The flora of this formation, which consists mostly of sandstones, is not rich. Its most distinctive species on both sides of the Atlantic seem to be the ferns of the genus *Archæopteris*, along with species referred to the genus *Cyclopteris*, but which, in so far as their barren fronds are concerned, for the most part resemble *Archæopteris*.

The characteristic American species are *Archæopteris Jacksoni*, *A. Rogersi*, and *A. Gaspiensis*. *Cyclopteris obtusa* and *C. (Platyphyllum) Brownii* are also very characteristic species. In Europe, *Archæopteris Hibernica* is a prevalent species.

Leptophleum rhombicum and fragments of *Psilophyton* are also found in the Upper Erian. There is evidence of the existence of vast numbers of *Rhizocarps* in this period, in the deposits of spore-cases (*Sporangites Huronensis*) in the shales of Kettle Point, Lake Huron; and in deposits of similar character in Ohio and elsewhere in the West.

The Upper Erian flora is thus very distinct from that of the Lower Carboniferous, and the unconformable relation of the beds in the Northeast may perhaps indicate a considerable lapse of time. Still, even in localities where there appears to be a transition from the Carboniferous into the Devonian, as in the Western States and in Ireland, the characteristic flora of each formation may be distinguished, though, as already stated, there is apparently some mixture in the South.

(2) *Middle Erian Sub-Flora* :

Both in Canada and the United States that part of the great Erian system which may be regarded as its middle division, the Hamilton and Marcellus shales of New York, the Cordaites shales of St. John, New Brunswick, and the middle shales and sandstones of the Gaspé series, presents conditions more favourable to the abundant growth of land-plants than either the upper or lower member. In the St. John beds, in particular, there is a rich fern flora, comparable with that of the coal-formation, and numerous stipes of ferns and trunks of tree-ferns have been found in the Hamilton and Corniferous series in the West, as well as trunks of *Dadoxylon*. It is, however, distinguished by a prevalence of small and delicate species, and by such forms as *Hymenophyllites* and the smaller Sphenopterids, and also by some peculiar ferns, as *Archæopteris* and *Megalopteris*.