

In addition to ferns, it has small *Lepidodendra*, of which *L. Gaspi-anum* is the chief. *Calamiteæ* occur, *Archæocalamites radiatus* being the dominant species. This plant, which in Europe appears to reach up into the Lower Carboniferous, is so far strictly Erian in north-east America. *Sigillariæ* scarcely appear, but *Cordaites* is abundant, and the earliest known species of *Dadoxylon* appear, while the *Psilophyton*, so characteristic of the Lower Erian, still continues, and the remarkable aquatic plants of the genus *Ptilophyton* are locally abundant.

(3) *Lower Erian Sub-Flora* :

This belongs to the Lower Devonian sandstones and shales, and is best seen in that formation at Gaspé and the Bay des Chaleurs. It is equivalent to the Oriskany sandstone, so far as its animal fossils and mineral character are concerned. It is characterised by the absence of true ferns, *Calamites* and *Sigillariæ*, and by the presence of such forms as *Psilophyton*, *Arthrostroma*, *Leptophleum*, and *Nematophyton*. *Lepidodendron Gaspi-anum* and *Leptophleum* already occur, though not nearly so abundant as *Psilophyton*.

The Lower Erian plants have an antique and generalised aspect which would lead us to infer that they are near the beginning of the land-flora, or perhaps in part belong to the close of an earlier flora still in great part unknown and few indications of land-plants have been found earlier.

At Campbellton and Scaumenac Bay, on the Bay des Chaleurs, fossil fishes of genera characteristic of the Lower and Upper Devonian horizons respectively, occur in association with fossil plants of these horizons, and have been described by Mr. Whiteaves.*

It is interesting to note that, as Fontaine and White have observed, certain forms which are Erian in the northeast are found in the Lower members of the Carboniferous in West Virginia, indicating the southward march of species in these periods.

3. THE SILURIAN FLORA AND STILL EARLIER INDICATIONS OF PLANTS.

In the upper beds of the Silurian, those of the Helderberg series, we still find *Psilophyton* and *Nematophyton*; but below these we know no land-plants in Canada. In the United States, Lesquereux and Claypole have described remains which may indicate the existence of lycopodiaceous and annularian types as far back as the be-

* "Transactions of the Royal Society of Canada."