

scales are rudimentary. They also bear some resemblance, though on a much larger scale, to the spore-cases of some Erian ferns (*Archæopteris*), to be mentioned in the sequel. On the whole, however, they seem most nearly related to the sporocarps of the Rhizocarpeæ.

Arthrostigma, which is found in the same beds with *Psilophyton*, was a plant of more robust growth, with better-developed, narrow, and pointed leaves, borne in a verticillate or spiral manner, and bearing at the ends of its branches spikes of naked sporocarps, apparently similar to those of *Psilophyton* but more rounded in form. The two genera must have been nearly related, and the slender branchlets of *Arthrostigma* are, unless well preserved, scarcely distinguishable from the stems of *Psilophyton*.*

If, now, we compare the vegetation of these and similar ancient plants with that of modern Rhizocarps, we shall find that the latter still present, though in a depauperated and diminished form, some of the characteristics of their predecessors. Some, like *Pilularia*, have simple linear leaves; others, like *Marsilea*, have leaves in verticils and cuneate in form; while others, like *Azolla* and *Salvinia*, have frondose leaves, more or less pinnate in their arrangement. The first type presents little that is characteristic, but there are in the Erian sandstones and shales great quantities of filamentous and linear objects which it has been impossible to refer to any genus, and which might have belonged to plants of the type of *Pilularia*. It is quite possible, also, that such plants as *Psilophyton glabrum* and *Cordaites angustifolia*, of which the fructification is quite unknown, may have been allied to Rhizocarps. With regard to the verticillate type, we are at once reminded of *Sphenophyllum* (Fig. 20), which

* Reports of the author on "Devonian Plants," "Geological Survey of Canada," which see for details as to Erian Flora of northeastern America.