

*Psilophyton* must have been woody rather than herbaceous, and their appearance is quite different from that of any true Algae.

The type of *Psilophyton* is my *P. princeps*, of which the whole of the parts and structures are well known, the entire plant being furnished in abundance and in situ in the rich plant-beds of Gaspé. A second species, *P. robustius*, has also afforded well characterized fructification. *P. elegans*, whose fruit appears as "oval scales," no doubt bore sac-like spore-cases resembling those of the other species, but in a different position, and perfectly flattened in the specimens procured. The only other Canadian species, *P. glabrum*, being somewhat different in appearance from the others, and not having afforded any fructification, must be regarded as uncertain.

The generic characters of the three first species may be stated as follows :—

Stems dichotomous, with rudimentary subulate leaves, sometimes obsolete in terminal branchlets and fertile branches; and in decorticated specimens represented only by punctiform scars. Young branches circinate. Rhizomata cylindrical, with circular root-areoles. Internal structure of stem, an axis of scalariform vessels enclosed in a sheath of imperfect woody tissue and covered with a cellular bark more dense externally. Fruit, naked sac-like spore-cases, in pairs or clusters, terminal or lateral.

The Scottish specimens conform to these characters in so far as they are known, but not having as yet afforded fruit or internal structure, they cannot be specifically determined with certainty. More complete specimens should be carefully searched for, and will no doubt be found.

In Belgium, M. Crepin has described a new species from the Upper Devonian of Condroz under the name *P. Condrusianum*, [1875]. It wants however some of the more important characters of the genus, and differs in having a pinnate ramification giving it the aspect of a fern. In a later paper [1876] the author considers this species distinct from *Psilophyton*, and proposes for it a new generic name *Rhacophyton*. In a note he states that Mr. Carruthers informs him that he regards *Psilophyton* as founded on the axes of *Lepidodendra* and on the fruit of ferns of the genus *Rhodea* of Stur. For this statement I have no published authority on the part of the English botanist, and it is certainly quite destitute of foundation in nature. My original specimens of *Psilophyton* are low plants with slender stems growing from *rhizomata*, and their leaves and fruits are