

An examination of the internal structure shows that the following characters are common to all the sections. The structure is coarsely cellular. In transverse section the cells are variable in size, averaging about 50μ in diameter. The walls are not well defined and continuous, but are often poorly defined and consist of a granulated carbonaceous substance which often becomes irregularly scattered, sometimes intruding upon the cell cavity, though in most cases localized along definite lines. We have found cells of only one kind, and are therefore unable to confirm the statement of the original description to the effect that "the appearance of rings of growth is caused by large cells disposed in concentric, narrow bands between the wider bands of fine, fibrous tissue," although from analogy we should infer that this might have been the case in the original stem.

In longitudinal section the cells are found to present the same appearance as to their general characteristics, as in the transverse section, and also a marked similarity in size—measuring about 50μ in diameter. There is, however, a more or less marked tendency, as noted in the original description, for the cells to fall into longitudinal rows which follow a somewhat vermicular course. This is most conspicuous under a low power, although to be observed, in many cases, under a $\frac{1}{2}$ objective.

My measurements show that, as determined from cells taken at random, the average size in transverse section is 48μ , the range being from 40μ to 70μ . In longitudinal section, the same number of measurements give an average of 54μ , and an extreme range between 30μ and 70μ .

These facts, taken in connection with the similarity here noted between this plant and Nematophyton in certain conditions, lead to the conclusion that it is only a highly altered condition of this latter. This view is also supported by the opinion expressed some time since by Sir Wm. Dawson that "Celluloxylon is allied to Prototaxites."¹

Furthermore, while it is quite possible that this may have been a distinct species, which I have no present means of proving, the fact that it occurs in the Middle Erian and not in the lower horizon, where alone *N. Loganii* has been found, together with the probability that the radial openings of *N. Loganii* were represented here by scattered, open areas of small size as in *N. crassum*, would lead one to refer it, for the present at least, to the latter species.

NEMATOPHYTON TENUE, *Du.*

This plant was originally described by Sir Wm. Dawson, as follows:²—

"Slender stems with thick, corky bark and woody fibres of much smaller diameter than in the last species (*N. crassum*) and marked with minute dots." In connection with this it was also stated that "the stems of this species are small, not exceeding half an inch in diameter, but are distinctly surrounded by a thick, shining, corky bark. The wood is calcified and appears to be perfectly homogeneous. . . . It may be doubted if this species has any real affinity with the last (*N. crassum*), but they correspond in their negative characters, and both appear to indicate the existence of certain woody plants of singularly simple and homogeneous structure."

¹ Geolog. Surv. of Canada, Fossil Plants, part ii, p. 126.

² Quart. Jnl. Geol. Soc., Nov. 1863, 467.