

*Logani*), all of which confirm his previous results. More special attention is given to *N. Hicksii* and to three other plants previously described under the name of *Nematoxyten crassum*, Dn., *Nematoxyten tenne*, Dn., and *Cellutoxyten primævum*, Dn., but all of which are here referred to the genus *Nematophyton*, thus making the whole number of probable species belonging to this genus of ancient Algæ, five.

The facts stated with reference to *N. Hicksii* add nothing to what had been observed by others. The material is wholly in fragments and the structure is represented only by siliceous coats of the cells.

*Nematoxyten crassum* is shown to present the same general structural features—museptate, tubular cells branching into a secondary system of intercellular filaments, as the species of *Nematophyton* previously described. *Nematophyton tenne* shows cells of a tubular character, but of very alternated size, without any well marked intercellular filaments, and in its general structure approaching more nearly to the hyphal structure of *Nematophyton laxum*.

*Cellutoxyten primævum* is shown to be a highly altered form of *Nematophyton*, the alteration having been effected through crystallization of silica and consequent redistribution of the highly decayed organic matter; the result being the formation of an ill-defined cellular structure. Comparison is made with well authenticated specimens of *N. Logani*, in which the same section, embracing variously altered structure, shows in one part normal cells, and in another part a false cellular tissue precisely similar to that of *N. primævum*. This latter is therefore referred, on geographical grounds as well as of probable structure, to *N. crassum*.

The Paper is illustrated by several photo-micrographs, showing the structure of the various species described.

The author also drew attention to further examinations of the laminated fossil described in his communication of last year, and also to a certain resin-like material occurring abundantly in the Gaspé Sandstones and always associated with *Nematophyton*. That the laminated fossil represents