

Ultrastructure and taxonomy of the genus *Endophyton* (Ulvales, Ulvophyceae)

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Abstract

Fine structure of vegetative cells, development and morphology of sporangia and general morphology of zoospores were studied for the first time in the genus *Endophyton* Gardner. Vegetative cells contained one parietal perforate chloroplast with 2–4 ulvophycean pyrenoids and transverse cell walls without plasmodesmata. Sporangial walls were formed by two distinct electron-dense and fuzzy layers which contained a contiguous electron-translucent, fibrillar material. Zoospores were naked, with an anterior dense aggregation of vesicles and a cup-shaped chloroplast with one eyespot. The flagellar apparatus showed 180° rotational symmetry and counterclockwise absolute orientation of its components. Microtubular roots had a cruciate pattern, in which $d = 2$ and $s = 4$ with 3/1 arrangement. Electron-dense bilobed terminal caps covered the proximal end of each basal body. These observations support the suggested close relationship of *Endophyton* to the allied genus *Entocladia* and other ulvalean algae, and reinforce the criteria for including the genus in the class Ulvophyceae, order Ulvales, family Ulvellaceae.