

GLOEODENDRON, A RARE ALGA IN OKLAHOMA

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INTRODUCTION

The genus *Gloeodendron* has been reported from only six locations throughout the world (1, 2, 4, 5). *Gloeodendron* was first described from two localities in the USSR in 1916 by Korshikov (1), who named *G. ramosa* as the type species. Thompson (2) in 1951 described a new genus from Kansas, *Schizodictyon*, which is now considered a synonym of *Gloeodendron* (3). Thompson's *S. catenatum* may represent a distinct species, although Iyengar and Ramanathan (4) have suggested that the two are conspecific. Bold (personal communication) collected the alga from Nashville, Tennessee in 1954, Williams (5) also reported the genus from the U.K. in 1967, and Iyengar and Ramanathan (4) found *Gloeodendron* in India in 1968. This rarely found member of the Tetrasporales is now reported for two locations in Oklahoma. Colonies of *Gloeodendron ramosa* were found attached to filamentous algae in preserved algal samples collected in May and June, 1975 along the bank of a small, fertile pond located on Lindsey Street 1 mile E of U.S. Highway 77 in Norman, Oklahoma. Collections from several farm ponds 2.5 miles W of the University of Oklahoma Biological Station on U.S. Highway 99 in July, 1976 also revealed the presence of the alga.

Vegetative cells were ovoid to spherical and measured 7.2-9.6 μm in diameter. Cells contained a cup-shaped chloroplast, each with a single pyrenoid and two contractile vacuoles. According to Thompson (2), the cell walls were composed of cellulose. Colonial development is well described in the literature (3, 5). Each colony consists of a compound coenobium composed of individual cells which lie within a persistent mucilaginous sheath (Figs. 1-3). These sheaths are formed in a chain-like fashion as the result of successive cell divisions and appear tubular in nature. Slits between sheaths may occur due to the failure of newly formed sheaths to cohere (Fig. 3).

Zoospore formation was not observed from the preserved samples but is well documented by Thompson (2). Contrary to what has been reported as characteristic for the order Tetrasporales, Iyengar and Ramanathan (4) found sexual reproduction in *Gloeodendron* to be slightly anisogamous.

Gloeodendron is considered to be a rare alga. However, the fact that it has been

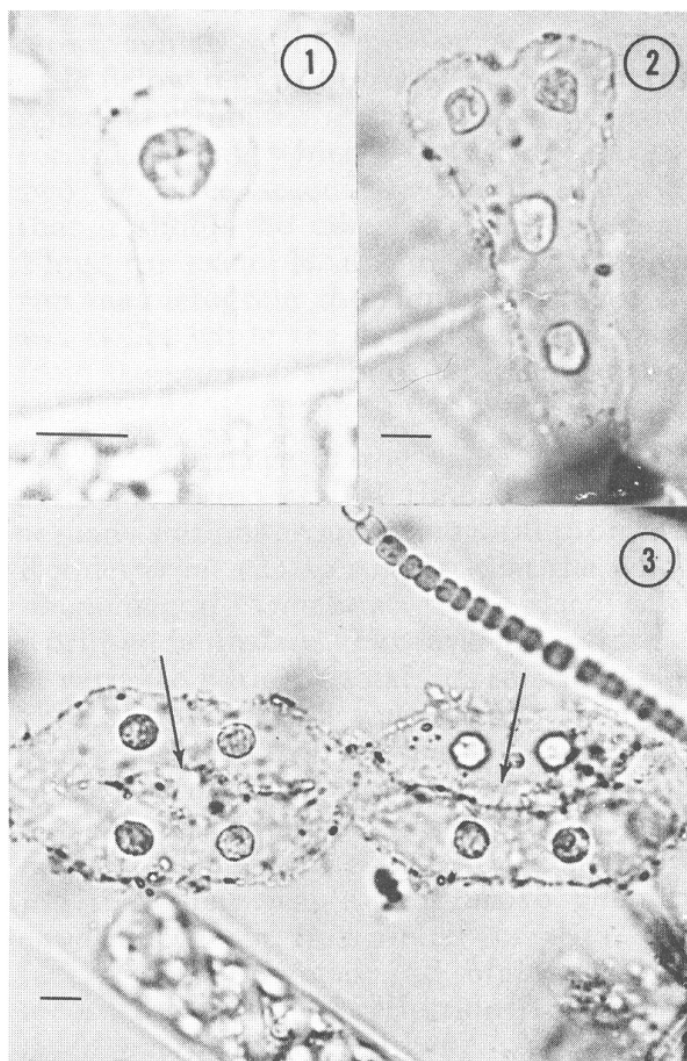


FIGURE 1. Initial cell of colony ($\times 1300$).

FIGURE 2. Four-cell stage of colony ($\times 700$).

FIGURE 3. Section of mature colony showing slits between tubes ($\times 600$).

found on three separate continents and in two locations in Oklahoma suggests that it may be more abundant than previously thought.

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