

**An Infrequently Reported Alga:
Chadefaudiothrix gallica Bourrelly
(Xanthophyceae:Heterotrichales)^{1, 2}**

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ABSTRACT

Chadefaudiothrix gallica Bourrelly, an infrequently encountered xanthophyte, is reported from south-central Kentucky representing its second known locale in addition to the type locale in France. The major distinguishing characteristics and known distribution of the 3 described species of the genus are summarized.

The xanthophycean genus *Chadefaudiothrix* was erected by Bourrelly (1957). The type species, *C. gallica*, was collected from an acidic pond (pH 6.5) in France. Two additional species, *C. fluitans* (Fritsch) Bourrelly [= *Ecballocystis fluitans* Fritsch, 1933] and *C. minouchetii* (Bourrelly) Bourrelly [= *Elakatothrix minouchetii* Bourrelly, 1947], were recognized by Bourrelly (1957). Distinguishing characteristics and known distributions of the 3 species are summarized in Table 1.

The genus is characterized by forming gelatinous tubes that are simple or anastomosed and uni- or multiseriate. Individual cells, that may not be contiguous with their neighbors within the tube, are secondarily enclosed by a sheath clearly distin-

guishable from that of the primary tube. The tubes are free or may be attached by a gelatinous holdfast to the substrate. The cells are elongate-cylindrical, rarely slightly reniform, with rounded to slightly truncated apices. Each cell contains 1-4 parietal chloroplasts without pyrenoids. The only known means of reproduction is accomplished by oblique vegetative cell division.

Apparently, the genus was known only from the type locales in France and England prior to Whitford and Schumacher's (1969) report of *C. gallica* from acidic swamp pools in Wake County, North Carolina.

C. gallica (Fig. 1) was collected from Sloan's Crossing Pond, Mammoth Cave National Park (Edmonson County, Kentucky), in March 1976 (pH 6.2, 12 C). In spite of intensive examination of the samples available at that time, only 3 specimens were found. Although routine collections have been taken from the pond subse-

¹ Dedicated to Dr. Larry Alston Whitford on the occasion of his 75th birthday.
² I wish to thank Dr. Pierre Bourrelly for verifying the identification.

TABLE 1.—MAJOR DISTINGUISHING CHARACTERISTICS AND KNOWN DISTRIBUTION OF THE 3 DESCRIBED SPECIES OF *Chadefaudiothrix* BOURRELLY

Species	Number of chloroplasts	Dimensions (μ)		Habit	Distribution
		Tubes (width)	Cells (width/length)		
<i>C. gallica</i>	2	30-35	6-8 × 27-30	anastomosing tubes, metaphytic	France; USA: Ky, NC
<i>C. fluitans</i>	4	14-18	3.0-3.5 × 9-18	anastomosing tubes, metaphytic	England
<i>C. minouchetii</i>	1	13-15	2 × 12-26	simple tubes, epiphytic	France

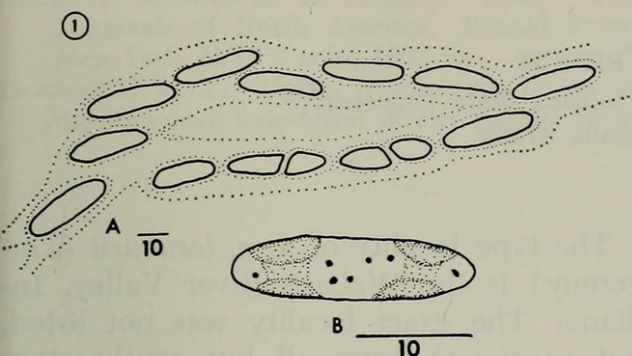


FIG. 1. *Chadeaudiothrix gallica* Bourrelly. A. Portion of anastomosing tube; B. single vegetative cell. Scales in microns.

quently, no additional specimens of *C. gallica* have been observed.

With the exception of reports by Whitford and Schumacher (1969, 1973), Meyer and Brook (1969), and Tarapchak (1972), the xanthophycean flora of the United States is poorly known. It appears that the more ephemeral forms, excluding such genera as *Ophiocytium*, *Tribonema*, and *Vaucheria*, occur primarily in dystrophic

ponds, swamps, and bogs with major vegetative development in early spring and fall when water temperatures are 10–15 C.

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