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A new freshwater chrysophyte, *Chrysomorula cohaerens gen. et sp. nov.* (Chrysophyceae, Chrysocapsaceae) from North America

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Abstract

A new freshwater chrysophyte genus and species, *Chrysomorula cohaerens*, is described from the United States. *Chrysomorula cohaerens* is a distinct taxon of non-motile heterokont chrysophyte. It forms macroscopic mucilaginous colonies attached to aquatic macrophytes, filamentous algae, and other substrata. Each colony is initially held together forming a hollow sphere by the confluence of its cell walls. The colony is at first a sphere, becoming ovoid to irregular with growth in size. Thus, it differs from other similar chrysophyte genera such as *Heimiochrysis* and *Chalkopyxis*. Cells bear pseudocilia.

Introduction

There are numerous genera of golden-brown algae (Chrysophyta, Chrysophyceae) living in freshwater habitats. Reports of their distribution had been scattered throughout the algal literature for a long time, but only recently have these been summarized for North America (Nicholls & Wujek 2003). Several more genera have recently been added: Wujek (2006), Andrews and Wujek (2009), and Nicholls (2013).

This paper reports and describes a new chrysophycean alga *Chrysomorula cohaerens* from Maryland, Kansas and Michigan.

Material and methods

Samples containing *Chrysomorula cohaerens* were collected from the following sites: Maryland (Harford County, ephemeral pond, Belcamp), Kansas (Douglas County, an I-70 turnpike marsh, west of Lawrence), and Michigan (Charlevoix County, Greene's Lake, a *Sphagnum*-dominated lake on Beaver Island). All collections were taken in mid-February or May.

Light microscope observations were made with an AO Spencer or Zeiss Photoscope II microscope. Observations were made both from freshly collected material and from stock cultures grown in Petri dishes containing soil water extract or Bold's Basal Medium (Bold 1967) supplemented with additional soil water extract. Cultures were established by micropipetting portions of epiphytes with the alga remaining attached to them or by "teasing" the colonies from their substrata and placing them into the culture medium. Cultures were placed in a north facing window and illuminated using natural light. Material was abundant enough to permit the observation of a number of characteristics but nothing of the alga's reproduction, during periods up to three weeks. Some material was stained with methylene blue or iodine. Culture materials no longer survive. A sample from the type locality preserved with a 2% acid Lugol's solution has since evaporated.

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