

ORAL PRESENTATION

EPIZOIC AND APOCHLOROTIC *TURSIOCOLA* SPECIES (BACILLARIOPHYTA) FROM THE SKIN OF WEST INDIAN MANATEES (*TRICHECHUS MANATUS*)

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During a survey of diatoms growing on the skin of West Indian manatees (*Trichechus manatus*), unknown apochlorotic diatom species belonging to the genus *Tursiocola* Holmes, Nagasawa & Takano (1993) were observed. Many benthic diatom species living in organic rich sediments are facultative heterotrophs and can utilize variety of carbon substrates for growth during periods of low light energy. Presently, only seven diatom species that are exclusive to the genera *Nitzschia* Hassall (1845) and *Hantzschia* Grunow (1877) have been identified as lacking chloroplasts (i.e. apochlorotic) and hence are obligate heterotrophs. *Tursiocola* species are part of an endemic flora previously known as the “ceticolous taxa” because until recently, they had only been observed on the skin of whales and porpoises. Recent studies of epizoic diatoms on sea turtles, manatees, and one freshwater turtle increased the number of *Tursiocola* species and expanded the variety of host animals on which they occur. As part of an effort to characterize epizoic diatoms that live on marine vertebrates, four additional apochlorotic diatom species are described from manatees. Several photosynthetic diatoms were successfully cultured from the manatee skin samplings, but none of the *Tursiocola* species survived these culture attempts, even those supplied with heterotrophic media, suggesting a missing but unknown vital nutrient that is otherwise available on manatee skin. The present study describes the second evolutionary loss of photosynthesis within the Bacillariophyta, three new *Tursiocola* species, and the phylogenetic position of the genus. This is the first report of apochlorotic diatoms outside the family Bacillariaceae.