

Description of *Parentocirrus brasiliensis* sp. n. (Ciliophora: Spirotrichea), a new ciliate protist present in activated sludge

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Abstract

In samples of activated sludge obtained from a wastewater treatment plant located in Rio de Janeiro State, Brazil, we discovered *Parentocirrus brasiliensis* sp. n., a new species of spirotrichous ciliate characterized as: *Parentocirrus* measuring about 110 x 75µm, body outline elliptical, with 2–3 buccal cirri and 3–5 posterior frontal cirri of the same size, and 2–4 postperistomial cirri. Nuclear apparatus composed of 4–6 macronuclear nodules and 1–6 micronuclei. Dorsal side shows 6 (rarely 5) kineties, with very few scattered kinetids between kineties 3 and 4. The new species differs from *P. hortualis* mainly in the configuration of dorsal kineties, the relative position of the posterior frontal cirri, the average number of macronuclear nodules, the number of postperistomial cirri, and the average body size.

Key words: morphology, taxonomy, wastewater treatment, new species, activated sludge, Rio de Janeiro, Brazil

Introduction

Ciliate protists play an important role as bacterial feeders and predators of other protists, like diatoms, flagellates, other ciliates and testate amoeba, and small metazoa. (Fenchel, 1987). As result, ciliates can play an economical importance in the water industry, since these organisms can accelerate the process of water clarification due to their activity over bacterial populations (Curds, 1992).

The taxonomy of ciliate protists present in activated sludge communities is extremely important for the understanding of these processes, in which according to Curds and Cockburn (1970), such organisms are dominant. Studies about the activated sludge processes indicate that the quantification and identification of ciliate protists may be a rapid source of information on the condition and efficiency of a wastewater plant (Al-Shawani & Horan, 1991).