



***Epistylis smalli* (Ciliophora: Peritrichia) a new peritrich from Guaíba Lake, Southern Brazil**

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Abstract

Epistylis smalli n. sp., a freshwater colonial peritrich, was collected in Guaíba Lake, Southern Brazil. Its morphology was investigated using in vivo observations and protargol stained specimens. *E. smalli* possess an elongate zooid that measures in vivo, on average, 173 µm in length and 50 µm in width. A C-shaped macronucleus that surrounds the infundibulum and a single contractile vacuole could be easily observed in the living cell. The oral infraciliature observed in silver-stained specimens was typical of peritrich ciliates, with three infundibular polykinetids bearing three rows of kinetosomes. A detailed description of the live and stained zooids is given.

Key words: Protozoa, Ciliophora, Peritrichia, Brazil

introduction

The genus *Epistylis* Ehrenberg, 1830 is composed by about 120 described species that generally live in freshwater environments (Lynn, 2008). Species of *Epistylis* can be found colonizing non-living substrates, as well as living as epibionts on aquatic invertebrates (e.g. Fernandez-Leborans & Tato-Porto, 2000; Utz, 2007; Qi *et al.*, 2009; Li *et al.*, 2012). The colonies of *Epistylis* are non-contractile, since they lack a spasmoneme inside the basal and lateral stalks. This genus has a typical peristomial lip (“epistyliform”) that generally presents three turns of peristomial cilia.

During a survey on sessile freshwater ciliates from a body of water in Southern Brazil, a species of *Epistylis* with a very prominent peristomial lip was found. Thorough analyses demonstrated that this was an undescribed species of *Epistylis* that we named *Epistylis smalli* n. sp. *In vivo* and protargol stained specimens were analyzed in detail and their morphology is presented here.

Material and methods

Seasonal sampling was carried out in Guaíba Lake (30°6'38"S, 51°15'38"W) located in Porto Alegre municipality, Rio Grande do Sul state, Brazil. The peritrich community was sampled using glass microscope slides attached by a nylon string and a clamp to a PVC tube (Safi *et al.*, 2014). To avoid colonization on both sides, each clamp held two back-to-back slides. Samples were removed from the field every 15 days during the four seasons, for a whole year. Once removed from the lake, the slides were placed in unfiltered water and taken to the laboratory. Colonies of peritrichs attached to the slides were observed using an optical microscope (Olympus CH30). Colonies of *Epistylis smalli* were removed from the substrate using a forceps and were placed in a petri dish with 10 ml of mineral water enriched with an infusion of wheat grass (Dagget and Nerad, 1992), and kept at room temperature. Glass coverslips were placed at the bottom of the Petri dishes as an available substrate for colonization. Morphological characters of live colonies obtained from cultures were observed in an optical microscope and one zooid from each colony was measured using a calibrated ocular micrometer. Photomicrographs of live specimens were obtained using a digital camera attached to an Olympus BX50 microscope.