



Establishment of a new peritrich ciliate genus, *Pseudepistylis* n. gen. (Ciliophora: Peritrichia: Epistylididae), with a description of a new freshwater species, *Pseudepistylis songi* n. sp. from Wenzhou, China

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Abstract

A new colonial sessilid peritrich genus, *Pseudepistylis*, is established. *Pseudepistylis* n. gen. belongs to the family Epistylididae, (i.e. colonial with a non-contractile stalk and peristomial disc not borne on a stalk) but has oral ciliature that makes less than two turns on the peristome before entering the infundibulum and a reticulate silverline system. Morphology, infraciliature and silverline system of the type species *Pseudepistylis songi* n. sp., isolated from a freshwater pond near Wenzhou, China, have been investigated both in vivo and following silver impregnation. The new species is characterized by small colony size of only one to eight zooids borne upon a slender, dichotomously branched stalk. Zooids are bell-shaped, in vivo approximately 220 × 140 µm, with wide peristomial lip that are invariably reflected aborally, single contractile vacuole at the dorsal wall of the infundibulum, and C-shaped macronucleus. The pellicle of contracted zooids shows several large, characteristic folds. The silverline system is reticulate with at least 137 silverlines between the peristomial area and the aboral ciliary wreath and approximately 77 between the aboral ciliary wreath and the scopula. The haplokinety and polykinety complete approximately one and one-quarter turns of the peristome before entering the infundibulum. Within the infundibulum the kineties of infundibular polykinety 2 (P2) terminate at different levels between P1 and P3. The myoneme system is also described.

Key words: Taxonomy; infraciliature; morphology; silverline system; myoneme; colony

Introduction

Species identification of peritrich ciliates is extremely difficult for a variety of reasons: (1) comprising approximately 1,000 species, the subclass Peritrichia is one of the most speciose of all ciliate groups, and several genera (e.g. *Epistylis* Ehrenberg, 1830, *Zoothamnium* Bory de St. Vincent, 1826 and *Vorticella* Linnaeus, 1767) contain more than 50 members; (2) many species are morphologically variable, but descriptions often fail to recognize this; (3) until comparatively recently, species descriptions were based almost exclusively on observations of live specimens (Kent 1880–1882; Kahl 1935), and data from the infraciliature and silverline system are therefore lacking for most; (4) few taxonomic revisions have been carried out in the last 20 years; consequently, descriptions of species are scattered throughout the literature; (5) stained preparations were rarely deposited in collections until recently, so type material is not available for most species. This situation was improved significantly when Foissner and Schiffmann (1974) outlined the basic criteria on which descriptions and redescrptions of peritrichs should be based. Extensive photographic documentation of live specimens and use of silver stains to reveal the infraciliature and silverline system were among their recom-