Zootaxa 3637 (2): 123–130
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3637.2.3
http://zoobank.org/urn:lsid:zoobank.org:pub:E52CB032-BE68-4D07-8B8B-DB8F576D032F

The morphology and SSU rRNA gene sequence analysis of a poorly-known brackish water ciliate, *Pinacocoleps tesselatus* (Kahl, 1930) (Ciliophora, Colepidae) from Hangzhou Bay, China

BORONG LU[1], JIE HUANG[2] & XIANGRUI CHEN[3]

[1]*School of Marine Science, Ningbo University, Ningbo 315211, China*
[2]*Laboratory of Protozoology, Institute of Evolution & Marine Biodiversity, Ocean University of China, Qingdao 266003, China*
[3]*Corresponding author. E-mail: xiangruichen@126.com*

Abstract

The morphology and infraciliature of a poorly-known colepid ciliate, *Pinacocoleps tesselatus* (Kahl, 1930) Foissner *et al*., 2008, collected from brackish-water biotope (salinity 12 ‰) in Hangzhou Bay, China, were investigated using live observations and silver impregnations. This species is characterized by its length of 60–85 μm *in vivo*, ovular shape, two anterior and three posterior spines, 21–25 longitudinal and 11 transverse ciliary rows on average, a macro and micro nucleus, and one terminal contractile vacuole. The key to all known seven *Pinacocoleps* species is updated. Additionally, we characterized the taxon *P. tesselatus* via small subunit rRNA gene data. Our phylogenetic analyses performed using both maximum-likelihood and Bayesian methods indicate that *P. tesselatus* falls into the core assemblage of the family Colepidae.

Key words: Colepidae, infraciliature, morphology, SSU rRNA gene sequence

Introduction

Colepid ciliates have been studied for more than two centuries since *Coleps hirtus* (O. F. Müller, 1786) Nitzsch, 1827 was first reported. So far, more than 40 nominal species have been recorded from diverse habitats: in freshwater and the sea, in benthos and plankton. These organisms are characterized by their cylindrical or barrel-shaped body bearing unique calcified cuirass. Four features separate the ten genera within the family Colepidae: 1) the number of armour tiers; 2) the presence or absence of spines; 3) the type of tier plates; and 4) the number of adoral organelles (Chen *et al*. 2009, 2012; Dragesco and Dragesco-Kernéis 1991; Foissner 1984; Foissner *et al*. 2008; Kahl 1930, 1933).

Seven *Pinacocoleps* species have been reported from marine or saline habitats, but only *Pinacocoleps similis* (Kahl, 1930) Chen *et al*., 2010 has been studied using silver impregnation (Chen *et al*. 2010). Here we describe a poorly-known species in this genus, *P. tesselatus* (Kahl, 1930) Foissner *et al*., 2008, which was discovered from a mariculture pool near the Hangzhou Bay, Ningbo, China.

Material and methods

Ciliates collection and identification. *Pinacocoleps tesselatus* (Kahl, 1930) was collected on 18 October 2011 from a pool using for swimming crab (*Portunus trituberculatus*) culture near Hangzhou Bay, Ningbo (30°19′23″N; 121°10′27″E), China. The water temperature was approximately 18 °C, the pH was 7.5, and the salinity was 12‰. Samples were taken from the surface of rocks using a soft brush then diluted with untreated water from collection site. Specimens were maintained in Petri dishes at room temperature (about 20 °C) with rice grains to enrich bacteria as a food source.

Living cells were isolated with a micropipette and examined at 10 to 40-fold magnification under a

Accepted by A. Wright: 18 Mar. 2013; published: 10 Apr. 2013