



Two new reports of testate amoebae (Protozoa: Rhizopoda) of the genera *Cryptodifflugia* and *Difflugia* from India

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ABSTRACT

Two species of testate amoebae viz., *Cryptodifflugia oviformis* Penard, 1890 and *Difflugia binucleata* Penard 1902 are reported herewith from Vembanad lake, one of the Ramsar sites of Kerala which are new records from India.

Key Words: Testate amoebae, *Cryptodifflugia oviformis*, *Difflugia binucleata*, Vembanad Lake, Bioindicators

INTRODUCTION

It is known that testate amoebae are one of the basic groups of free-living protozoa, residually present in water biocenoses (Medioli and Scott 1983; 1988). Testate amoebae as primary destructors of cellulose and lignin, take an active part in diverse biological processes in water ecosystems (Ilham and Nataly 2000). The present study was conducted in Vembanad lake, one of the Ramsar sites in Kerala. A number of scientific articles on the biodiversity of the lake have been published, but its testate amoebae fauna have not been an object of study. The purpose of this study was to investigate the taxonomic diversity of testate amoebae in Vembanad lake which are good bioindicators.

MATERIALS AND METHODS

Vembanad Lake, an important Ramsar site, lies 0.6-2.2m below mean sea level (MSL) along the south-west coast of India (9^o35'N 76^o25' E of the Arabian Sea) and has a permanent connection with the Arabian Sea at bar mouth. As the North-East monsoon recedes, the area is exposed to tidal incursion of saline water from the Arabian Sea, making the ecosystem predominantly saline. The collection of the free living protozoans was from Karaparambil site located in the South Paravoor

region of the Vaikom road. The water samples were collected during the early morning hours (between 6:00 am to 8:00 am) using 63µm mesh sized collected during the early morning hours (between 6.00 a.m to 8.00 a.m) using 63µm mesh sized plankton net and observed in live condition under 400X magnification.

RESULTS

Systematic Account

Subkingdom: Protozoa

Phylum: Sarcomastigophora

Superclass: Rhizopoda

Class: Lobosea

Order: Testaceolobosa

Family: Difflugiidae

Genus: *Difflugia*, Penard 1902

Difflugia binucleata

Difflugia binucleata, Penard 1902 (Fig.1)

Material examined: 3 exs. Station-2, Karaparambil site, 27.vi.2012, Coll. Ranju; 2 exs. Station-1, Karaparambil site, 2.vii.2012, Coll. Ranju.

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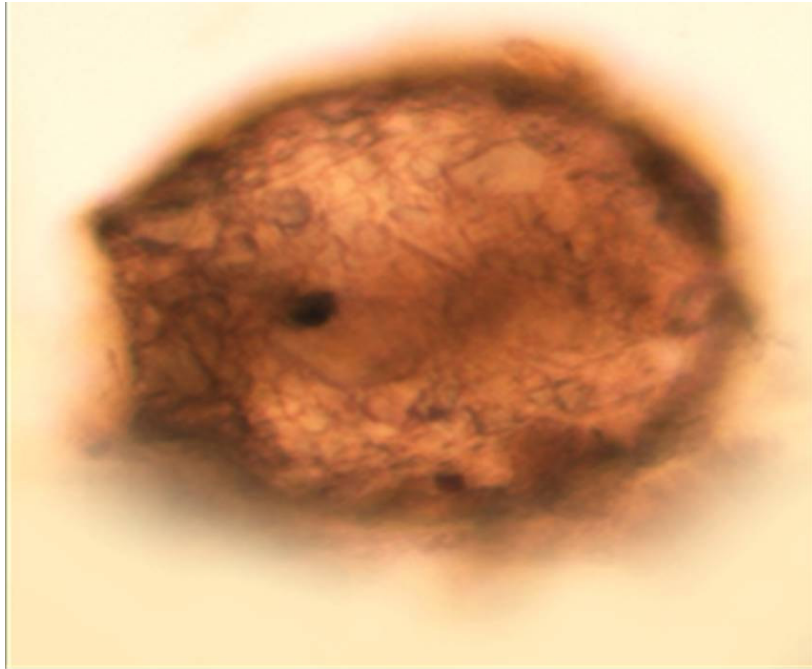


Fig. 1. *Diffugia binucleata*, Penard 1902

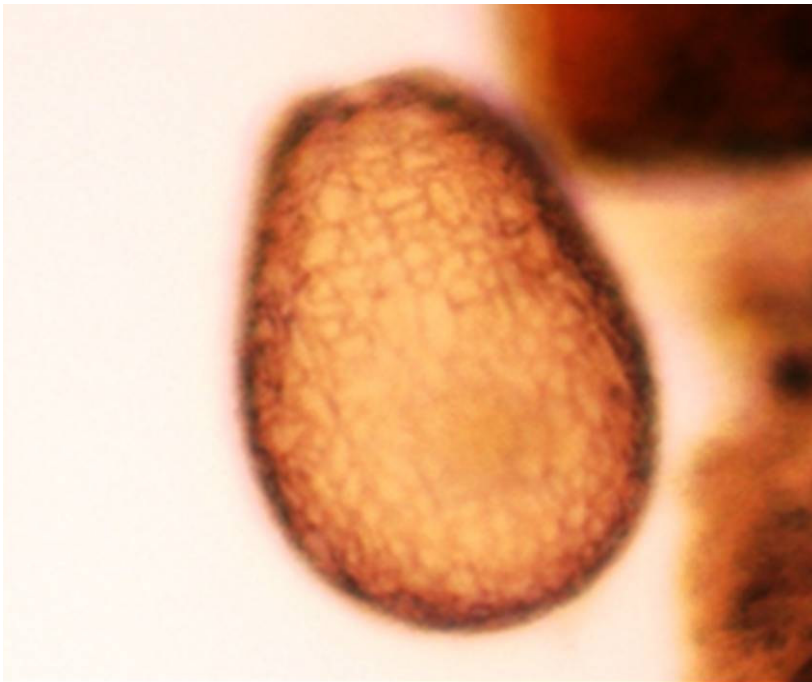


Fig. 2. *Cryptodiffugia oviformis*, Penard 1890

Diagnosis: Test ovoid with a distinct neck, thus resembling a vase. Test mainly composed of fragments of diatom shells, imbedded in an organic matrix. Test often with adhering debris and therefore hard to detect between sediments. Always two vesicular nuclei present. Color yellow till brown. As the name itself suggests it has two nuclei

Distribution: India: Present record.

Remarks: First record from India.

Cryptodifflugia oviformis

Cryptodifflugia oviformis, Penard 1890 (Fig. 2)

Material examined: 4exs.Station-2, Karaparambil site, 20.vi.2012, Coll. Ranju; 3exs.Station-3, Karaparambil site, 27.vi.2012, Coll. Ranju; 2 exs. Station-5, Karaparambil site, 2.vii.2012, Coll. Ranju

Diagnosis: shell ovoid, not of slightly compressed; surface smooth, sometimes covered with some Xenosomes; young shells colourless, older shells yellow to deep brown; aperture with a thick collar.

Distribution: India: Present record.

Remarks: First record from India.

DISCUSSION

Cryptodifflugia is a small testate amoeba in the order Arcellinida. The test is organic, sometimes with an inner calcified layer. There are approximately 20 species in the genus, perhaps more since some consider *Difflugiella* to be synonymous. The genus *Difflugia* Leclerc, 1815 contains the largest number of species among the testate amoebae. More than 300 species and about 200 subspecies, varieties, or forms of the genus have been described up to now (Meisterfeld 2000). There are descriptions of about 300 species of *Difflugia* from the world. In the present study *Cryptodifflugia oviformis* and *Difflugia binucleata* are recorded for the first time from India.

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