

Trachelomonas iberensis sp. nova (Euglenophyta) from Iberá System (Argentina)

By YOLANDA ZALOCAR DE DOMITROVIC ¹ and VISITACION CONFORTI²

¹ CONICET, Centro de Ecología Aplicada del Litoral, Corrientes, Argentina.

² Facultad de Ciencias Exactas y Naturales, CONICET, Dpto. de Biodiversidad y Biología Experimental, Buenos Aires, Argentina.

With 8 figures in the text

Abstract: In this work we describe on the basis of light and scanning electron microscopy a new species of the genus *Trachelomonas* (Euglenophyta), *Trachelomonas iberensis* sp. nova, from Iberá System, Corrientes, Argentina.

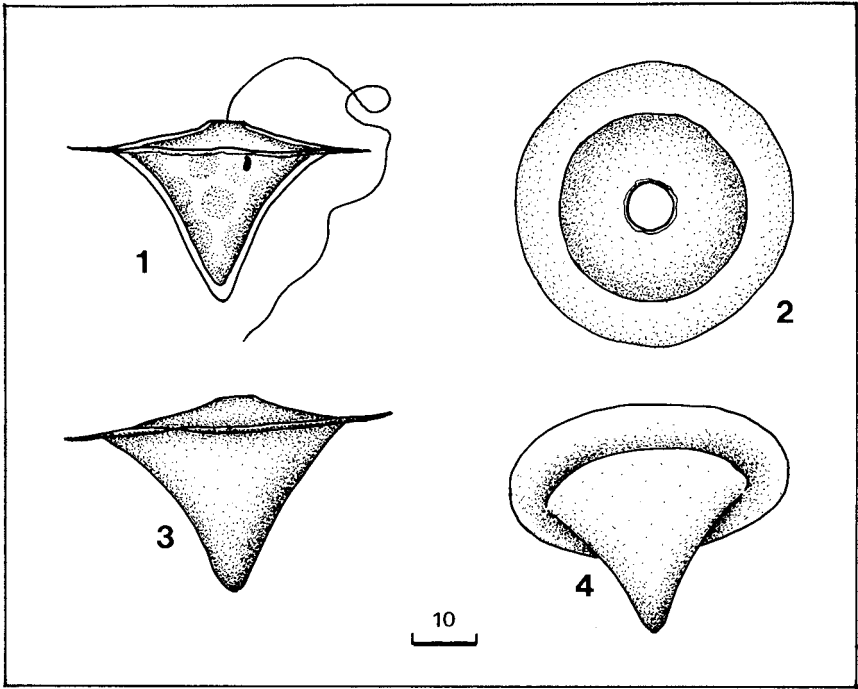
Key words: *Trachelomonas*, Euglenophyta, euglenoid, taxonomy, Iberá System.

Introduction

The subtropical Argentine region is very rich in fresh-water bodies, where euglenoids found very favorable conditions for their development. Among these a high number of species belonging to the genus *Trachelomonas* EHRENB. have been reported in this area (TELL 1980, TELL & COUTÉ 1980, TELL & ZALOCAR DE DOMITROVIC 1985, CONFORTI & TELL 1986, 1989, CONFORTI 1999). Some of these specimens have shown such an original and different morphology that authors considered them as new taxon. In this paper we describe *Trachelomonas iberensis* sp. nova, which was collected from Pora lagoon (Iberá System), Corrientes, Argentina.

Materials and methods

Sample was collected from Pora lagoon (Iberá System), Corrientes province (northeastern region of Argentina), on May 20th 2003. The water temperature was 25 °C; the conductivity 58 $\mu\text{S cm}^{-1}$, and the pH 6.9. Five hundred milliliters of water was sieved throughout a 25 μm mesh net and fixed with 4% formaldehyde. Euglenophyta was the dominant group (80%) in the sample. It contained between 3 and 5 cells per ml of the new taxa. Other groups (Chlorophyta and Bacillariophyceae) were scarce (20%). For study under LM, ap-



Figs 1–4. *T. iberaensis*

1 – general view of the lorica and the cell, 2 – apical general view of the lorica and flagellar pore, 3–4 – general views of the lorica.

proximately 20 specimens were observed and measured. For observation under SEM organisms were washed with bidistilled water, filtered through Millipore filters (0.20 μm pore) and air-dried. Filter pieces were attached on stubs to be subsequently coated with gold/palladium. Specimens were examined and photographed by means of a Phillips 505 SEM at the Electron Microscopy Service of CITEFA, Argentina. Sample was deposited in the Phycological Collection of the Centro de Ecología Aplicada del Litoral (CONICET), Corrientes, Argentina.

Results

Trachelomonas iberaensis ZALOCAR et CONFORTI sp. nova (Figs 1–8)

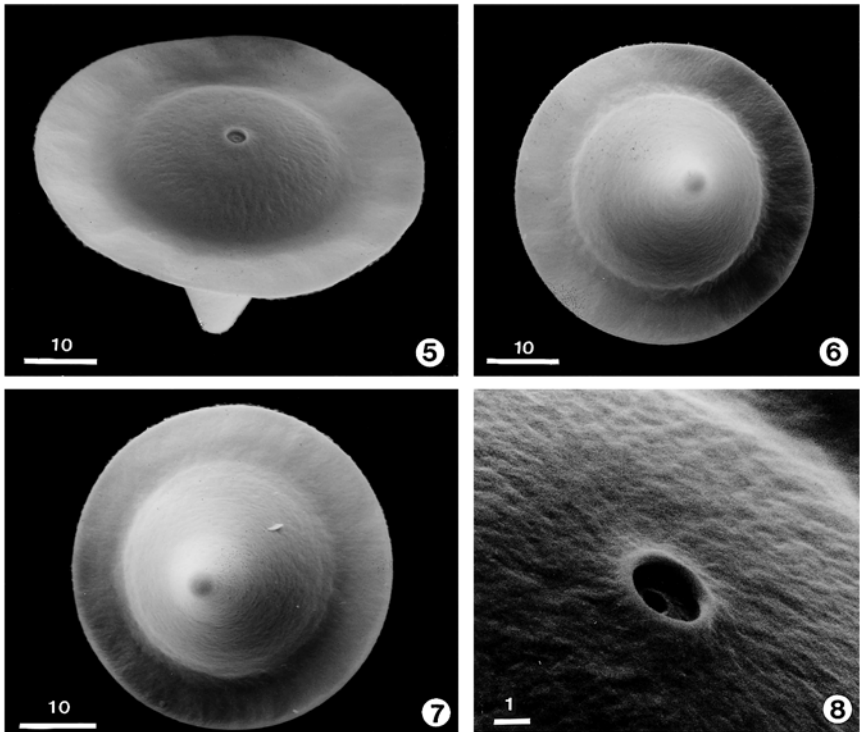
Diagnosis: Lorica conica cum apice latum quam basale. Apice cum expansione similem alis, quae totam capsulam circumdat. In sectione optica transversale, lorica orbiculare. Lorica leve, fusca, non punctata. Chloroplasti numerosi, parietali et disciformes, pyrenoidi nulli. Stigmate magno. Flagello duplo longius quam lorica. Lorica dimensiones: long. 27–28 μm , lat. max. 40–42 μm , lat. alae 12 μm , flagellaris poris diameter 4.5–5 μm .

Holotypus (Iconotypus): Figura nostra 1.

Habitatio: In Pora paludis.

Regionis: Corrientes, Argentina.

Lorica conical, surrounded in the base of the cone by a wing. Anterior end slightly concave in frontal view, circular in apical view, showed a central flagellar



Figs 5–8. Scanning electron micrographs of the lorica of *T. iberaensis*
5 – Apical general view showing flagellar pore, **6–7** – general views from the posterior end, **8** – anterior end showing detail of the flagellar pore.
 [Scale bar values in μm are given on the micrographs.]

pore with annular thickening (4.5–5 μm diam.). Posterior end rounded. Envelope smooth, light to dark brown. Cell with numerous discoid chloroplast without pyrenoid. Stigma notorious. Flagellum twice the cell length. Lorica dimensions: 27–28 μm height, 40–42 μm diam. cone including wing, wing 12 μm wide.

The lorica shape of the newly established species does not resemble any other species of the genus, only by its cellular characters we could determine it belonging to *Trachelomonas*.

Resumen

En este trabajo se describe en base a observaciones realizadas con microscopio de luz y electrónico de barrido una especie nueva del género *Trachelomonas* (Euglenophyta), *Trachelomonas iberaensis* sp. nova, la cual fue encontrada en una muestra de fitoplancton extraída de la laguna Pora (Sistema del Iberá), Corrientes, Argentina.

Palabras clave: *Trachelomonas*, Euglenophyta, euglenoideo, taxonomía, Sistema del Iberá.

Acknowledgement

This work was supported by the grants to Y. ZALOCAR DE DOMITROVIC (SGCyT-UNNE PI 701) and V. CONFORTI (ANPCYT PICT 01-6017/99, PIP CONICET 0753/03, UBACYT X092). The authors are indebted to Mr. D. GIMENEZ for his assistance with the SEM (CITEFA).

References

- CONFORTI, V. (1999): Taxonomic and ultrastructural study of *Trachelomonas* EHR. (Euglenophyta) from subtropical Argentina. – *Cryptogamie, Algologie* **20** (3): 167–207.
- CONFORTI, V. & TELL, G. (1986): Ultraestructura de la lóriga de *Trachelomonas* EHR. (Euglenophyta) en Microscopio Electrónico de Barrido (MEB). – *Nova Hedwigia* **43** (1–2): 45–79.
- (1989): Ultrastructure of the pellicle and the envelope of some euglenoid flagellates from Argentina by means of SEM. – *Nova Hedwigia* **48** (1–2): 187–206.
- TELL, G. & COUTÉ, A. (1980): Ultrastructure de la logette de quelques *Trachelomonas* (Euglenophytes) au MEB. – *Cryptogamie, Algologie* **1** (4): 311–319.
- TELL, G. & ZALOCAR DE DOMITROVIC, Y. (1985): Euglenophyta pigmentadas de la provincia del Chaco (Argentina). – *Nova Hedwigia* **41**: 353–391.

Manuscript received May 4, 2004, accepted January, 6, 2005.

The authors' addresses:

Dra. YOLANDA ZALOCAR DE DOMITROVIC
 Centro de Ecología Aplicada del Litoral (CONICET),
 C.C. 291,
 RA-3400 Corrientes, Argentina.
 e-mail: zalocar@arnet.com.ar

Dra. VISITACION CONFORTI
 Facultad de Ciencias Exactas y Naturales
 Dpto. Biodiversidad y Biología Experimental,
 Ciudad Universitaria, Pab. II,
 RA-1428 Buenos Aires, Argentina
 e-mail: conforti@bg.fcen.uba.ar