



A new genus and species in the diatom family Eunotiaceae Kützing (Bacillariophyceae) from the Amazonian hydrographic region, Brazil

ANA LUIZA BURLIGA*¹, JOHN PATRICK KOCIOLEK², SAIONARA ELIANE SALOMONI¹ & DANIELA FIGUEIREDO³

¹Fundação Zoobotânica do Rio Grande do Sul, Museu de Ciências Naturais. Rua Dr. Salvador França 1427, CEP 90690-000, Porto Alegre, RS, Brazil.

burliga@gmail.com, saiosalomoni@hotmail.com

²Museum of Natural History and Department of Ecology and Evolutionary Biology, University of Colorado, Boulder, 80309, CO, USA
Patrick.Kociolek@colorado.edu

³Aqanalise Consultoria Ambiental

danifigueiredo@uol.com.br

*Corresponding author: burliga@gmail.com

Abstract

A new genus of the diatom family Eunotiaceae Kützing is described along with a new species. *Eunotioforma* Kociolek & Burliga *gen. nov.* shares asymmetry about the apical axis with other members of the family (except *Peronia* de Brébisson & Arnott ex Kitton), and is distinguished from other genera in the family by having its raphe system almost entirely on the valve face and transapical striae interrupted near the center line of the valve. *Eunotioforma mattogrossiana* sp. nov. is described from the Do Sanguê River, an oligotrophic and acidic stream situated in the State of Mato Grosso, Central Western region of Brazil. When compared with previously described taxa, the new species differs with respect to size, striae densities, areolar densities and an uncommonly high number of rimoportulae per valve. Seven other taxa are assigned to the new genus, and the systematic position of *Eunotioforma* and the evolution of the raphe within the family is discussed.

Key words: *Eunotioforma*, new genus, Eunotiaceae, *Eunotia*, taxonomy, ultrastructure; pristine habitats, Brazil, systematics

Introduction

There has been a significant increase in our understanding of the diversity of diatoms that are part of the freshwater eunotioid diatoms in the last several years. Genera such as *Amphorotia* Williams & Reid (2006a:41) and *Colliculoamphora* Williams & Reid (2006b:153) have been described from northern temperate regions or marine fossils.

From the number of species present, especially for the eunotioid genera *Eunotia* Ehrenberg (1837:44) and *Actinella* Lewis (1864:343), and to a lesser extent *Peronia* Brébisson & Arnott *ex* Kitton (1868: 16), it would appear that a hotspot of diversity for this lineage is South America (e.g. Laudares-Silva 1987; Ludwig & Valente-Moreira 1989; Rodrigues & Moreira-Filho 1990; Callegaro 1995; Torgan & Becker 1997; Souza & Moreira-Filho 1999; Fürstenberger & Valente-Moreira 2000; Bicca & Torgan 2009; Metzeltin & Tremarin 2011; Bicca *et al.* 2011) and especially the Amazonian hydrographic region (e.g. Hustedt 1952, 1965; Uherkovich & Rai 1979; Uherkovich & Franken 1980; Uherkovich 1981; Fukushima & Xavier 1988; Metzeltin & Lange-Bertalot 1998, 2007; Kociolek 2000; Kociolek *et al.* 2001; Ferrari *et al.* 2007; Melo *et al.* 2010). And while there have been many species of eunotioid diatoms described from this region, surprisingly there has been only two new genera described, *Perinotia* Metzeltin & Lange-Bertalot (2007: 108) (see also Ferrari *et al.* 2009) and *Bicudoa* (Wetzel *et al.* 2012).