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A new uncommon epilithic *Eunotia* (Bacillariophyceae, Eunotiaceae) from the Chapada Diamantina region, Northeast Brazil

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Abstract

A new uncommon epilithic diatom, *Eunotia relicta* sp. nov., is described from a small oligotrophic, acidic stream in the Chapada Diamantina region, northeast Brazil. *Eunotia relicta* is a typical eunotioid form with a pronounced arch on the dorsal side of the valve mainly in smaller valves. Contrary to most *Eunotia* species, *Eunotia relicta* does not possess rectangular frustules in girdle view. Until now, this characteristic was only observed in a few species such as *E. charliereimeri* Edlund & Brant, *E. sarraceniae* E.E. Gaiser & J.R. Johansen and *E. arcuoides* Foged, all of them considered asymmetric along the valve plane. Some interesting morphological features of the new species are broad copulae on the dorsal side, an inconspicuous single conical spine on the valve face near the margin at both poles, and the irregularly thickened interstriae. Moreover, each valve has irregular projections at the dorsal valve face margin/mantle juncture and up to three rimoportulae per valve located on the mantle. These features associated with the distinct valve outline set it apart from *E. charliereimeri*, *E. sarraceniae* and *E. arcuoides*, which have no spines, smooth valve faces and 1–2 rimoportulae per valve.

Key words: Brazil, Chapada Diamantina, epilithon, *Eunotia relicta*, new species, oligotrophic environments, taxonomy

Introduction

Eunotia C.G. Ehrenberg (1837: 44) is a large and widely distributed diatom genus frequently associated with freshwater acidic habitats (Alles *et al.* 1991). Although *Eunotia* is mainly present in acidic environments, the pH preferences of different species within this genus can vary as the levels of acidity, from acidophilous (e.g. *E. formica* Ehrenberg 1843: 414) to neutral (e.g. *E. soleirolii* (Kützing) Rabenhorst 1864: 74), alkaliphilous (e.g. *E. arcuoides* Foged 1977: 52–53), or even truly indifferent (e.g. *Eunotia bilunaris* (Ehrenberg) Souza *in* Souza & Moreira-Filho 1999: 265) (Van Dam *et al*. 1994; Beals & Potapova 2013). *Eunotia* is also common in oligotrophic/dystrophic water bodies (Lange-Bertalot & Metzeltin 1996). Because of this ecological range for pH and trophic status, many *Eunotia* taxa are considered important ecological indicators (Kwandrans 2007).

Eunotia is usually characterized by the simple reduced raphe system confined to the distal parts of the valve (Round *et al*. 1990). The genus also has rimoportulae, however this character is probably variable in presence/absence and number since many species have one rimoportulae per valve (Round *et al*. 1990), others have two or more per valve (Metzeltin & Lange-Bertalot 1998), and others, as example the tropical *E. emedii* Wetzel *et al*. (2011: 136) lack rimoportulae.

The genus *Eunotia* belongs to the Eunotiaceae (Kützing 1844: 32), and to the Eunotiophycidae D.G. Mann *in* Round *et al.* (1990: 651), a subclass that simultaneosly became greater and more heterogeneous mainly due to the inclusion of taxa with peculiar combination of characters [e.g. *Eunophora* Vyverman, Sabbe & D.G. Mann *in*

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