



Ultrastructure and taxonomic position of *Cymbella latestriata* Pantocsek (Bacillariophyta)

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Abstract

A rare Neogene species, *Cymbella latestriata*, was studied by light and scanning electron microscopy. *Cymbella latestriata* was found to have apical pore fields on both apices, although these are simple, very small. Because of the presence of apical pore fields APF the transfer of this species to the genus *Cymbopleura* is not justified as previously was suggested by Krammer. Thus, the study confirms Pantocsek's original assignment of the taxon as *Cymbella latestriata*.

Key words: apical pore fields, *Cymbella*, *Cymbopleura*, diatoms, fossil, Neogene, Pantocsek collection, type material

Introduction

Cymbella C.A. Agardh (1830: 1), in a broad sense, has traditionally included biraphid taxa that are symmetric about the transapical axis and asymmetric about the apical axis. This group has been the focus of numerous revisions in the past 30 years. Cymbelloid diatoms have previously been assigned to three genera, based on differences in growth strategies, *Cocconema* Ehrenberg (1832: 40, 62) represented members of the group that can attach to the substrate with mucilaginous stalks, whereas species of *Encyonema* Kützing (1833: 589) grow within mucilaginous tubes. The genus *Cymbella* originally contained free-living species. These three genera were combined into *Cymbella* by Heiberg (1863), who argued that growth strategy was not sufficient to distinguish genera. Krammer (1982) recognized *Cymbella* and *Encyonema* as distinct groups (subgenera of *Cymbella*) but these forms are now considered different genera (Round *et al.* 1990, Krammer 1997a, b, 2002, 2003). For the remaining cymbelloid diatoms that do not fit into either *Cymbella* or *Encyonema* the genus *Cymbopleura* (Krammer 1982: 20) Krammer (1999: 284) was constituted. In the last couple of years some new, well-defined genera have also been erected or resurrected, such as *Gomphocymbella* Otto Müller (1905: 145), *Reimeria* Kociolek *et Stoermer* (1987: 457), *Encyonopsis* Krammer (1997a: 116) *Cymbelloopsis* Krammer (1997a: 157), *Delicata* Krammer (2003: 110), *Navicymbula* Krammer (2003: 123), *Gomphocymbelloopsis* Krammer (2003: 127), *Afrocymbella* Krammer (2003: 129, 167), *Oricymba* Jüttner *et al.* (2010: 407), to reduce the heterogeneity of the “catch all” genus, *Cymbopleura*.

Fossil diatoms from the Carpathian region have been extensively studied in the past centuries. József Pantocsek (*e.g.* 1892), Márta Hajós (*e.g.* 1986) and Zdenka Řeháková (1965, 1971, 1980) provided a detailed overview of the distribution pattern of diatom assemblages. Although recently, consequent to the reduction of industrial geological surveys, extinct diatoms no longer formed part of the main stream of diatom research in the Carpathian region, they may be of special phylogenetic significance. Of such extinct diatoms, *Cymbella latestriata* Pantocsek (1892: pl.1, fig. 9; pl. 21, fig. 316; 1905: 43) is clearly an uncommon taxon that has rarely been reported in the literature.

Cymbella latestriata was first illustrated in a hardcover book (Pantocsek 1892), printed in only a few copies in Nagytapolcsány (now Topolčany in Slovakia). Two drawings were published in this bibliographic curio, the first (the original plate 1, fig. 9, reproduced here as Fig. 1 in mirror image) being assigned to a new species (“n. s.”), collected at