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Placoneis cocquytiae, a new raphid diatom (Bacillariophyceae) from the Senegal River (Senegal, West Africa)

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Abstract

During a survey of the freshwater diatom flora of the Senegal River, an unknown *Placoneis* species was observed that was initially identified as *Placoneis gastrum*. Detailed morphological analysis using both light and scanning electron microscopy observations revealed sufficient morphological differences to separate this species as *Placoneis cocquytiae* sp. nov. The new species is characterized by a rather broadly lanceolate to elliptic-lanceolate valve outline with rostrate, protracted, broadly rounded apices. The central area has an irregular shape due to the shortening of several striae. An isolated pore is lacking. The new species is compared with similar *Placoneis* and *Navicula* s.l. taxa and a short biogeographical analysis based on confirmed African records is presented. So far, *P. cocquytiae* is also present in Zambia and Lake Tanganyika.

Key words: *Placoneis*, western sub-Saharan Africa, morphology, new species

Introduction

In general, the aquatic diatom flora from sub-Saharan western Africa is rather poorly known. All papers published so far from this region can be found in Table 1, which includes the investigated localities and the number of reported and newly described taxa. These data make clear that a highly diverse and, in many cases, typical diatom flora is present in the different water bodies in this region. Major taxonomic contributions are: Zanon (1941), Foged (1966, 1986), Carter & Denny (1982, 1987, 1992) and Compère (1991).

Recently, a new biomonitoring project using diatoms as bio-indicators started on the riverine diatoms of the Senegal River, running from Kidira at the Senegalese-Malinese border till its mouth in Saint-Louis at the Atlantic Ocean. During this diatom survey, several naviculoid taxa were found that could not be identified. One was an as yet undescribed species of *Placoneis* Mereschk. (1903: 3). It is described here as *Placoneis cocquytiae* sp. nov.

Placoneis was established in 1903 by Mereschkowski (1903) for taxa with symmetrical valves showing an elliptic-lanceolate to linear-lanceolate outline with broadly rounded, rostrate or capitate apices, a raphe structure with more or less drop-like proximal raphe endings and hooked distal fissures, uniseriate or biseriate striae composed of relatively large, rounded areolae and, in some species, the presence of an isolated pore in the central area. The cells have a single chloroplast with a central column, more or less parallel to the apical axis with lobes extending under the valve faces on each side of the raphe (Cox 1996). At present, c. 150 taxon names have been included in this genus (Fourtanier & Kociolek 2011).

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