

FOUR NEW SMALL-CELLED NAVICULOID TAXA FROM THE MARITIME ANTARCTIC REGION

Kateřina Kopalová^{1,2}, Ralitsa Zidarova³, Eileen J. Cox⁴ & Bart Van de Vijver⁵

¹Charles University in Prague, Faculty of Science, Department of Ecology

²Academy of Sciences of the Czech Republic, Institute of Botany, Section of Plant Ecology

³University of Sofia, Faculty of Biology, Department of Botany

⁴The Natural History Museum

⁵National Botanic Garden of Belgium, Department of Bryophyta & Thallophyta

The Maritime Antarctic Region comprises the Antarctic Peninsula and several adjacent archipelagos and islands, such as the South Shetland Islands. In 2008, a detailed taxonomic and ecological study of the limno-terrestrial diatom flora of Livingston Island (South Shetland Islands) and James Ross Island was begun to improve our understanding of the biodiversity and biogeography of the Antarctic diatom flora. The revision of several genera, such as *Pinnularia*, *Luticola* and *Hantzschia* has already resulted in the description of more than 20 new species with a restricted Antarctic distribution. During the survey, several unknown, small-celled naviculoid taxa were also found. Based on detailed scanning electron microscopy, these four taxa could not be identified using the current Antarctic literature and will be described as new to science.

Adlafia spA is characterized by its small dimensions, and separated from similar taxa, such as *A. muscora*, *A. suchlandtii* or *A. minuscula*, by its valve outline, which lacks subrostrate or capitate apices, and by its striation density. *Chamaepinnularia* spA shows some resemblance to *C. australomediocris* but can be separated by the lack of a well-defined fascia, smaller valve dimensions and a more narrowly-lanceolate outline. *Mayamaea* spA is related to *M. agrestis* but has less acutely rounded apices, clearly curved striae and larger central area due to the presence of shorter central striae.

The taxonomic position of *Microcostatus* spA is rather unclear as this taxon possesses several features that conflict with its position within the genus, such as the presence of a conopeum, and striae composed of one large elongated areola. However, the structure of the raphe, axial area, valve outline and valve dimensions justify its position within *Microcostatus*.

All four new taxa are illustrated using both LM and SEM. Details of their morphology and ecology are included, and their relationships to the most similar taxa discussed.