



***Gliwiczia gen. nov.* a new monoraphid diatom genus from Lake Baikal with a description of four species new for science**

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Abstract

This paper proposes a new monoraphid genus *Gliwiczia* Kulikovskiy, Lange-Bertalot & Witkowski, separated from *Achnanthes* sensu lato. Here we describe four species *G. skvortzowii* Kulikovskiy, Lange-Bertalot & Witkowski, *G. tenuis* Kulikovskiy, Lange-Bertalot & Witkowski, *G. latarea* Kulikovskiy, Lange-Bertalot & Witkowski and *G. vixcalcar* Kulikovskiy, Lange-Bertalot & Witkowski which all are new to science. In terms of morphology, this group of species closely resembles *Achnanthes calcar* Cleve. Also proposed is the taxonomic transfer of *A. calcar* Cleve to *Gliwiczia calcar* (Cleve) Kulikovskiy, Lange-Bertalot & Witkowski comb. nov. Our taxonomic conclusions about the position of this group of species is based on light microscopic (LM) examination of the type material of *A. calcar* and on extensive LM and scanning electron microscopic (SEM) studies on material originating from Lake Baikal. This new genus differs from other established monoraphid genera in the of cavum (horse shoe) present on both raphe and sternums valves, uniseriate striae on both valves, and areola occlusions in a form of open circular foramina externally. The raphe valve is only slightly concave, whereas the sternum valves appear flat. Only one of the species belonging in *Gliwiczia gen. nov.*, *G. calcar*, is known to inhabit oligotrophic and dystrophic freshwater lakes of Eurasia. It seems highly likely that the newly described species are limited in their distribution to the waters of Lake Baikal. None of them have thus far been illustrated in any accessible literature even under provisional names.

Key words: *Gliwiczia gen. nov.*, new monoraphid genus, new species, morphology, Lake Baikal, geographic distribution

Introduction

In the early 1990's a publication by Round *et al.* (1990) intensified the process of splitting the large "catch all" diatom genera. Included in this group was *Achnanthes* J.B.M. Bory de Saint-Vincent (1822: 79, 593) sensu lato. This began the re-evaluation of some genera which for a long time had been included in *Achnanthes* s.l. e.g. *Achnantheidium* Kützing (1844: 75), *Eucoconeis* Cleve (1895: 173) *ex* Meister (1912: 95) (Round *et al.* 1990, Round & Bukhtiyarova 1996). As a result, during a period of two decades a large and apparently heterogenous monoraphid genus *Achnanthes* has been split into more than ten genera. The following genera were established in that time period: *Psammothidium* Bukhtiyarova & Round (1996: 3), *Lemnicola* Round & Basson (1997: 77), *Rossithidium* Round & Bukhtiyarova (1996: 350), *Kolbesia* Round & Bukhtiyarova (1996: 354) *ex* Round (1998: 181), *Karayevia* Round & Bukhtiyarova (1996: 353) *ex* Round (1998: 181), *Planothidium* Round & Bukhtiyarova (1996: 351), *Platessa* Lange-Bertalot (2004: 442), *Pogoneis* Round & Basson (1997: 72), *Pauliella* Round & Basson (1997: 77), *Astartiella* Witkowski, Lange-Bertalot & Metzeltin in Moser *et al.* (1998: 357), *Vikingea* Witkowski, Lange-Bertalot & Metzeltin (2000: 125, 442), *Scalariella* Riaux-Gobin in Riaux-Gobin *et al.* (2012: 15) (e.g. Bukhtiyarova & Round 1996, Round & Bukhtiyarova 1996, Round & Basson 1997, Witkowski *et al.* 1998, Witkowski *et al.* 2000, Krammer & Lange-Bertalot