Phytotaxa 226 (3): 253–260
www.mapress.com/phytotaxa/

Article

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

http://dx.doi.org/10.11646/phytotaxa.226.3.5

Sellaphora smirnovii (Bacillariophyta, Sellaphoraceae), a new small-celled species from Lake Glubokoe, European Russia, together with transfer of *Navicula pseudoventralis* to the genus *Sellaphora*

DMITRY A. CHUDAEV* & MARIA A. GOLOLOBOVA
Faculty of Biology, M.V. Lomonosov Moscow State University, Leninskie Gory, 1, building 12, Moscow, 119991, Russia
**Corresponding author (E-mail: chudaev@list.ru)*

Abstract

A new small-celled species of the genus *Sellaphora* is described from Lake Glubokoe (Moscow Region, European Russia). For another taxon (also small-celled), a new combination in the same genus is proposed. Both species were studied with light and scanning electron microscopy. Analysis of valve morphology supported assignment to the genus *Sellaphora*. *Sellaphora smirnovii sp. nov.* is morphologically most similar to *S. pulchra*, however it differs from the latter in shape of valve apices, striation pattern and absence of a marginal fold. This taxon is also compared to other morphologically similar species. *Navicula pseudoventralis* is transferred to the genus *Sellaphora* as *Sellaphora pseudoventralis comb. nov*. Observations on *S. pseudoventralis* showed the presence of biseriate striae, similar to those found in *S. seminulum* and *S. barae*.

Key words: Lake Glubokoe, new species, new combination, Russia, *Sellaphora*, taxonomy

Introduction

The genus *Sellaphora* Mereschkowsky (1902: 186) was established by Mereschkowsky, then forgotten by diatom taxonomists and later restored by Mann (1989). The diversity within the genus was largely underestimated for a long time (Mann *et al*. 2008). Recent works are concentrated mainly on the large-celled representatives of *Sellaphora*, belonging to the species groups around *S. pupula* (Kützing 1844: 93) Mereschkowsky (1902: 187), *S. bacillum* (Ehrenberg 1839: 130) D.G. Mann (1989: 2) and *S. laevissima* (Kützing 1844: 96) D.G. Mann (1989: 2) (*e.g.* Mann *et al*. 2004, 2008; Levkov *et al*. 2006). Small-celled taxa have attracted less attention, however several species were described recently (*e.g.* Enache & Potapova 2009; Kapetanović *et al*. 2011; Kociolek *et al*. 2014). In this paper, we provide the description of a new small-celled *Sellaphora* species, namely *S. smirnovii*, and transfer another small-celled taxon *Navicula pseudoventralis* Hustedt (1953: 631) to the genus *Sellaphora*. Both species were found in materials from Lake Glubokoe (Moscow Region, Russia), from which two new diatom taxa were described earlier (Williams *et al*. 2009; Chudaev *et al*. 2014). According to the published records the diversity of the genus *Sellaphora* in Lake Glubokoe is not very high, only nine taxa were reported from the lake (Smirnov *et al.* 1997; Chudaev & Gololobova 2009, 2011; Razumovskiy & Gololobova 2009).

Materials and methods

Lake Glubokoe (55° 45’ N, 36° 30’ E) is located in the Moscow Region (Moscow oblast), about 90 km from the city of Moscow (Russia). The lake is mesotrophic, it has a total area of 59 ha and its volume is about 5489000 m^2. Maximum length of the lake is 1200 m, maximum width is 850 m, and the maximum depth is 33 m (Smirnov 1986). Lake hydrochemistry was studied by Yanin *et al*. (1986) and Shaporenko & Shilkrot (2005). Samples of plankton, epiphyton and surface sediments were collected from Lake Glubokoe in the Summer of 2007 and subsequently studied. Materials were fixed with formaldehyde (4%). Samples from bottom sediments were taken in March of 2007 using a Livingstone coring tube from ice cover from a point with 10.1 m of water depth. The cores cover 5.18 m of sediments

Accepted by Saúl Blanco Lanza: 29 Aug. 2015; published: 16 Sept. 2015