



## *Synura korshikovii* sp. nov. (Chrysophyceae, Synurales), a new species from Ukraine

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### Abstract

A new species, *Synura korshikovii* sp. nov., is described from water reservoirs in the vicinities of Polisky Nature Reserve, Northern Ukraine, based on scale morphology studied by means of transmission and scanning electron microscopy. This species has three types of scales: spine-bearing oval body scales, spine-bearing prolonged transition scales and spineless ovate or circular caudal scales. All scale types are covered with hexagonal reticulum. The spine is clavate or cylindrical with flat apex terminating in a few rows of papillae-like teeth.

**Key words:** chrysophytes, scales, Polisky Nature Reserve, Ukraine

### Introduction

The genus *Synura* Ehrenberg (1835: 314) comprises colonial chrysophytes with cells covered with siliceous scales. The genus was divided into three Sections: *Synura*, *Peterseniae* Petersen et Hansen ex Balonov et Kuzmin (1974: 1682) and *Lapponicae* Balonov et Kuzmin (1974: 1685). This infrageneric classification is included in the current taxonomic treatment of synurophytes (Kristiansen & Preisig 2007). After the transfer of *Synura lapponica* Skuja (1956: 275), the type of the section *Lapponicae*, into the genus *Tessellaria* Playfair (1918: 508) (Škaloud, Kristiansen & Škaloudová 2013) this Section became taxonomically invalid. Based on morphological and molecular data Škaloud *et al.* (Škaloud, Kristiansen & Škaloudová 2013) suggested that the genus *Synura* be split into five sections: *Echinulatae*, *Peterseniae*, *Spinosa*, *Splendida* and *Synura*. Unfortunately, no formal descriptions of these sections were provided. Currently, there are 37 accepted taxa of *Synura* based on descriptions made with a combination of light and electron microscopy (Kristiansen & Preisig 2007; Němcová *et al.* 2008; Pang & Wang 2013; Siver 2013; Škaloud *et al.* 2012, 2014; Škaloud, Kristiansen & Škaloudová 2013).

Recent molecular reconstructions by Siver *et al.* (2015) supported the distinction between Sections *Synura* and *Peterseniae*, which represented two subclades on the tree. Interestingly, *S. uvella* Ehrenberg (1835: 315), the generitype, has an ancestral position relative to other *Synura* species (Siver *et al.*, 2015).

Ten species of *Synura* have been recorded from Ukraine (Korshikov 1929, 1942; Matvienko 1952; Kapustin & Tsarenko 2013; Kapustin & Gusev unpublished). The purpose of this paper is to describe a new species of *Synura*, *S. korshikovii*, from Ukraine based on scale morphology studied by means of transmission and scanning electron microscopy.

### Materials and Methods

Polisky Nature Reserve (PNR) is situated in the northwestern part of the Zhytomyr Region (Ukraine). Its area consists of 20,104 hectares. The vegetation is dominated by forests (73%), together with swamps and bogs (22%) (Andrienko & Orlov 2012). The hydrographic network of the PNR includes the Ubort river (the tributary of the Pripjat river) and its tributaries: Perha, Bolotnytsya, and Zholobnytsya.

Plankton samples were collected from two sites: from the pond “Hrybove Lake” situated in the buffer zone of