

**VI International Conference
ADVANCES IN MODERN PHYCOLOGY**



BOOK OF ABSTRACTS

15-17 May 2019, Kyiv, Ukraine



**National Academy of
Sciences of Ukraine**



**M.G. Kholodny
Institute of Botany**



**Ukrainian Botanical Society
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Shannon indices and variation coefficients of Shannon indices made up -0.94 at $p < 0.0001$, and the correlation between the average Shannon indices and variation coefficients of Shannon indices was equal to -0.74 at $p = 0.002$. It means that the higher is the average Shannon index, the smaller is the amplitude of its fluctuations. This can be explained by the fact that polydominant communities are more stable in time due to their higher resistance to the impact of environmental variables. Therefore, polydominant structure of epiphytic algal communities may be considered one of mechanisms sustaining their stability.

The epiphytic algal communities' biomass fluctuated between $0.47 \pm 0.18 \text{ mg} \cdot 10 \text{ cm}^{-2}$ and $3.09 \pm 1.18 \text{ mg} \cdot 10 \text{ cm}^{-2}$. It is important that no persistent long-term increasing or decreasing trend in the algal biomass was observed during the observation period, and this may be indicative of the algal community's stability.

Thus, it has been proven, that at their present succession stage epiphytic algal communities of the Kyiv water reservoir are characterized by stability, which is an efficient mechanism sustaining their taxonomic and quantitative diversity.

**R.R. Shalygina¹, S.S. Shalygin², V.V. Redkina¹, C.B. Gargas³,
J.R. Johansen⁴**

¹Institute of Industrial Ecological Problems of the North,
14, Academgorodok, Apatity, 184209, Russia
e-mail: regina_rinat@mail.ru

²Texas A&M University, Center for Coastal Studies, Department of Life Sciences,
Corpus Christi, TX 78412, U.S.A
e-mail: got.lifemusic@gmail.com.

³University of Arkansas, Department of Biological Sciences,
Fayetteville, AR 72701, U.S.A.

⁴John Carroll University, Department of Biology, University Heights,
OH 44118, U.S.A.

***STENOMITOS KOLAENSIS*, A NEW SPECIES OF CYANOBACTERIA FROM KOLA PENINSULA, RUSSIA**

Stenomitos Miscoe et Johansen is recently described cyanobacterial genus some species of which appears to be cryptic (Miscoe et al. 2016). Type species, *S. rutilans* Miscoe et J.R. Johansen isolated from the caves on Hawaii archipelago. Other species of that genus: *S. frigidus* (Fritsch) Miscoe et Johansen and *S. tremulus* (Johansen et Casamatta) Miscoe et Johansen were revised morphologically and

genetically. In our work, we describe a new member of genus *Stenomitos*, *S. kolaensis* sp. nov., isolated from the moderately acidic Al-Fe humic podzols with high concentration of the heavy metals of a boreal forest near Pechenganikel town, Murmansk region, Russia. We observed clear morphological autapomorphies in *S. kolaensis* separating it from all other species of the genus. 16S and 16S-23S ITS rRNA phylogenetic analyses was in congruency with morphology supporting elevation of the new species. Phylogenetic analysis of the 16S-23S ITS rRNA region resulted in *S. kolaensis* forming a separate supported clade distant from any other *Stenomitos* lineages including Antarctic strains of the misnamed taxon "*Leptolyngbya frigida*". Further, structure of the conserved ITS regions showed the same signal. *S. kolaensis* can be distinguished from other *Stenomitos* taxa by its geographical distribution, habitat preference, morphology 16S rRNA phylogeny, and differences in the secondary structure of the 16S-23S ITS region. Thus, using polyphasic approach we are describing *S. kolaensis* as a new species.

Yu.S. Shelyuk

Zhytomyr Ivan Franko State University,
40, Velyka Berdychivska St., Zhytomyr, 10008, Ukraine
e-mail: Shelyuk_Yulya@ukr.net

PHYTOPLANKTON DEVELOPMENT IN SMALL RESERVOIRS

Phytoplankton of small reservoirs (Denyshi Reservoir, Zhytomyr Reservoir on the Teteriv River, Berdychiv Reservoir on the Gnylopyat River, Myropil Reservoir and Novograd-Volynskiy on the Sluch River), and their hydrochemical regime were studied during 2004-2018 according to generally accepted methods (Methods ..., 2006).

During the research, 280 species were identified, represented by 304 intraspecific taxa, including nomenclature type of the species. Green algae (33.2 % of the total list) and diatoms (24.3 %) were the richest in floristic terms. Such ratio is typical for the specific plankton flora of each reservoir. The plankton of Zhytomyr Reservoir, which has the largest area and receives the flow of the Guiwa and Gnilopyat Rivers, was the most abundant. The larger the area and the volume of reservoirs are, the bigger is the blue-green algae's share: in Zhytomyr Reservoir and Denyshi Reservoir they occupy the third place according to their species diversity (13.8–14.2 %), in Berdychiv Reservoir they are slightly behind