CONJUGATES (CHAROPHYTA, ZYGNEMATOPHYCEAE) IN THE VICINITIES OF THE PROGRESS AND BELLINGSHAUSEN STATIONS (ANTARCTICA)

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A detailed information on the taxonomic diversity of conjugates (Charophyta, Zygnematophyceae) in freshwater bodies near the Progress and Bellingshausen stations is presented. 16 species from 6 genera and 4 families were identified. 6 species (*Closterium moniliferum, Cosmarium constrictum, C. cyclicum, C. venustum, Staurastrum lapponicum, Gonatozygon brebissonii*) were recorded for the first time in Antarctica.

Keywords: Zygnematophyceae, conjugates, Progress station, Bellingshausen station, Antarctica

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REFERENCES

Akiyama M. 1979. Some ecological and taxonomic observations on the colored snow algae found in Rumpa and Skarvsnes, Antarctica. – Mem. Nat. Inst. Polar Res., Spec. Issue. 11: 27–34.

Broady P.A. 1979. Terrestrial algae of Signy Island, South Orkney Islands. – British Antarctic Survey Scientific Reports. 98: 1–117.

Broady P.A. 1986. Ecology and taxonomy of the terrestrial algae of the Vestfold Hills. – In: Antarctic oasis. Sydney. P. 165–202.

Brook A.J., Williamson D.B. 1983. Desmids from some lakes on Signy Island, South-Orkney Islands, Antarctica. – British Antarctic Survey Bulletin. 61: 59–70.

Carlson G.W.F. 1913. Süsswasser-Algen aus der Antarktis, Süd-Georgien und den Falkland Inseln. – In: Wissenschaftliche Ergebnisse der Schwedischen Südpolar-Expedition 1901-1903, unter leitung von Dr. Otto Nordenskjöld. Stockholm, Lithographisches Institut des Generalstabs. 4(14): 1–94, 3 pls.

Croasdale H., Flint E. 1986. Flora of New Zealand. Freshwater algae, Chlorophyta, Desmids with ecological comments on their habitats. Vol. 1. Wellington, New Zealand. 132 p.

Croasdale H., Flint E. 1988. Flora of New Zealand. Freshwater algae, Chlorophyta, Desmids with ecological comments on their habitats. Vol. 2. Christchurch, Botany Division D.S.I.R., New Zealand. 147 p.

Croasdale H., Flint E., Racine M. 1994. Flora of New Zealand. Freshwater algae, Chlorophyta, Desmids with ecological comments on their habitats. Vol. 3. Lincoln, Canterbury, New Zealand. 218 p.

Ellis-Evans J. C., Layborn-Parry J., Bayliss P. R., Perriss S. J. 1998. Physical, chemical and microbial community characteristics of lakes of the Larsemann Hills, Continental Antarctica. – Arch. Hydrobiol. 141 (2): 209–230.

Guiry M.D., Guiry G.M. 2019. AlgaeBase. World-wide electronic publication, National University of Ireland, Galway. http://www.algaebase.org (Accessed 08.11.2019).

Hirano M. 1979. Freshwater algae from Yukidori Zawa, near Syowa Station, Antarctica. Mem. Nat. Inst. Polar Res., Spec. Issue. 11: 1–25.

Kol E. 1972. Snow algae from Signy Island (South Orkney Islands, Antarctica). – Ann. Hist. Nat. Mu. Nat. Hung. 64: 63–70.

Kossinskaya E.K. 1952. Flora sporovykh rasteniy SSSR. T. 2: Kon'yugaty ili stseplyanki. (1). Mezotenievye i gonatozigovye vodorosli. [Flora of spore plants of the USSR. Vol. 2. Conjugates (1). Mesoteniales and Gonatozigales]. Moscow; Lenigrad. 163 p. (In Russ.).

Kossinskaya E.K. 1960. Flora sporovykh rasteniy SSSR. T. 5. Kon'yugaty ili stseplyanki (2). Desmidievye vodorosli. Vyp. 1 [Flora of spore plants of the USSR. Vol. 5. Conjugates (2). Desmidiales. 1]. Moscow; Leningrad: 706 p. (In Russ.).

Ling H.U. 1996. Snow algae of the Windmill Island region, Antarctica. – Hydrobiologia. 336 (1): 99–106.

Ling, H.U., Seppelt R.D. 1990. Snow algae of the Windmill Islands, continental Antarctica. *Mesotaenium berggrenii* (Zygnematales, Chlorophyta) the alga of grey snow. – Antarctic Science. 2 (2): 143–148.

Luknitskaya A.F. 2008. To the flora of the algae of the Pskov region: the freshwater green algae (*Streptophyta*, *Zygnematophyceae*) in Sebezsky national park. – Novosti Sistematiki Nizshikh Rastenii. 42: 55–65 (In Russ., with Engl. abstract).

Mataloni G., Tell G. 2002. Microalgal communities from ornithogenic soils at Cierva Point, Antarctic Peninsula. – Polar Biology. 25 (7): 488–491. DOI: 10.1007/s00300-002-0369-8

Mataloni G., Tesolín G., Tell G. 1998. Characterization of a small eutrophic Antarctic lake (Otero Lake, Cierva Point) on the basis of algal assemblages and water chemistry. – Polar Biology. 19 (2): 107–114. DOI: 10.1007/s003000050221.

Palamar-Mordvintseva G.M. 1982. Opredelitel' presnovodnykh vodorosley SSSR. [Key to freshwater algae of the USSR]. 11 (2). Leningrad. 577 p. (In Russ.).

Palamar-Mordvintseva G.M. 2003. Flora vodorosley kontinentalnykh vodoemov Ukrainy: Desmidievye vodorosli. [Algae Flora of Continental reservoirs of Ukraine: Desmidiales]. Vol. 1 (1). Kiev. 355 p. (In Russ.).

Palamar-Mordvintseva G.M. 2005. Flora vodorostey kontinentalnykh vodoym Ukrainy. [Algae flora of continental reservoirs of Ukraine]. Vol. 1 (2). Kyiv. 173 p. (In Ukr.).

Richter W. 1995. Biology. – In: The Schirmacher Oasis, Queen Maud Land, East Antarctica, and its Surroundings. Eds Bormann P., Fritzsche D. Justus Perthes Verlag, Gotha. P. 321–347.

Smirnova S.V., Safronova T.V., Luknitskaya A.F., Chaplygina O.Ya. 2018. Study of algae and cyanoprokaryots in fresh waters of Antarctica in the season of the 62nd Russian Antarctic Expedition. – Proceedings of IV (XII) International Botanical Conference of Young Scientists in Saint-Petersburg. St. Petersburg. P. 30–31.

Unrein F., Vinocur A. 1999. Phytoplankton structure and dynamics in a turbid Antarctic lake (Potter Peninsula, King George Island). – Polar Biol. 22: 93–101.

Vinocur A., Izaguirre I. 1994. Freshwater algae (excluding Cyanophyceae) from nine lakes and pools of Hope Bay, Antarctic Peninsula. – Antarct. Sci. 6: 483–489.