

## Diversity and molecular identification of cyanobacteria and algae of selected polar ecosystems

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The study deals with molecular and morphological identification of cyanobacteria and algae in selected substrates in both polar regions and contains from two units. In the first part, this study deals with 149 isolated strains of cyanobacteria and algae based on molecular and morphological analysis. In total 27 genetic clusters we characterized in detail. Based on results a new genus *Anagnostidinema* with 3 new species and 4 new species for the genus *Phormidesmis* were described. The genus *Pseudophormidium* was proposed to transfer from the order Oscillatoriales to the order Synechococcales. In the second part this study deals with species composition on selected unusual substrates in Arc-

tic and Antarctic landscapes, like bone remnants, substrates of man-made origin and soil. In total, 96 isolated unialgal strain cultures for detail study and 104 species of cyanobacteria and algae were identified. On bone remnants of sea mammals in Antarctic we identified 40 species. In Arctic 25 species were identified on substrates of man-made origin from Svalbard and 75 species on bone remnants and soil samples from Svalbard and Greenland. The 2 genera for Antarctic, 4 genera for Greenland and 11 genera for Svalbard are for a first time observed there. The most abundant were coccal green algae and filamentous cyanobacteria in general.

**Key words:** phototrophs, polar regions, new taxa