Süßwasserflora von Mitteleuropa, Bd. 19/3: Cyanoprokaryota: 3. Teil / 3rd part: Heterocytous Genera

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Kurzbeschreibung

Cyanoprokaryotes are probably the oldest organisms with oxygen generating photosynthesis. However, their cell structure and type of asexual reproduction prove their eubacterial origin. This volume treats cyanobacterial types with diversified thalli, with the typical presence of prominent, specialized cells having specific functions (heterocytes, akinetes, hairs, necridia), complex life cycles, and a combination of various reproductive strategies (monocytes, hormogonia and hormocytes). The most diversified heterocytous cyanobacteria with multicellular, morphologically complex thalli have a specific position among prokaryotic organisms. It is the last part of a review of cyanoprokaryotes (Cyanophyta, Cyanobacteria) issued in the “Süßwasserflora von Mitteleuropa”.All heterocytous cyanobacteria are included in this volume, especially taxa studied and revised according to modern phylogenetic criteria. The author tried to respect all confirmed changes and corrections and stresses especially those morphological features that are not controversial to phylogenetic studies and enable the identification of various populations in nature or in cultures according to morphological characteristics. A synthesis of modern results with traditional nomenclature - sometimes difficult - is aimed to foster progress in cyanobacterial research. One of the major reasons to present this work is to enhance identification of natural populations using morphological criteria for their identification.Buchrückseite

Cyanoprokaryotes are probably the oldest organisms with oxygen generating photosynthesis. However, their cell structure and type of asexual reproduction prove their eubacterial origin. In spite of their existence from Precambrian onwards they have not lost their vitality, and still are able to colonize all possible biotopes, including very extreme environments (thermal springs up to 80 °C, rocks in extremely hot or cold deserts in both the tropics and Antarctica, hypersaline lakes and marshes, biotopes in volcanic regions, and other harsh habitats).This volume treats cyanobacterial types with diversified thalli, with the typical presence of prominent, specialized cells having specific functions (heterocytes, akinetes, hairs, necridia), complex life cycles, and a combination of various reproductive strategies (monocytes, hormogonia and hormocytes). The most diversified heterocytous cyanobacteria with multicellular, morphologically complex thalli have a quite specific position among prokaryotic organisms. It is the last part of a review of cyanoprokaryotes (Cyanophyta, Cyanobacteria) issued in the framework of Süßwasserflora von Mitteleuropa.All heterocytous cyanobacteria are included in this volume, especially taxa studied and revised according to modern phylogenetic criteria. The author tried to respect all confirmed changes and corrections and stresses especially those morphological features that are not controversial to phylogenetic studies and enable the identification of various populations in nature or in cultures according to morphological characteristics. A synthesis of modern results with traditional nomenclature - sometimes difficult - is aimed to foster progress in cyanobacterial research. One of the major reasons to present this work is to enhance identification of natural populations using morphological criteria for their identification. Über den Autor und weitere Mitwirkende

Ji?í **Komárek** (born 1931) - Studied botany (spec. phycology) at the Masaryk University in Brno and Charles University in Prague (at Prof. Fott), Czech Republic. He completed scientific education at Profs. Bourrelly (Paris), Lund (Windermere) and Starmach (Krakow). Later he worked in the Institute of Hydrobiology (ecology), Inst. of Microbiology (physiology, biochemistry) and in the Inst. of Botany of the Academy of Sciences CR. From 1991 he was professor of phycology at the University of South Bohemia and the first director of Botanical Department of Faculty of Sciences. He was specialized in diversity, ecology and taxonomic classification of coccal green algae and cyanobacteria. He participated in several tropical or polar expeditions and projects, published over 300 scientific papers and several monographs. Recently, he prefers the "polyphasic approach" (combined molecular, cytomorphological, ecological and biochemical criteria) for evaluation of cyanobacterial diversity.

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