

Contents

Part I Phylogeny, Taxonomy, and Diversity

Diversity of the Cyanobacteria	3
Petr Dvořák, Dale A. Casamatta, Petr Hašler, Eva Jahodářová, Alyson R. Norwich, and Aloisie Poulíčková	
Diversity of Anaerobic Anoxygenic Phototrophic Purple Bacteria	47
Johannes F. Imhoff	
A Panoply of Phototrophs: An Overview of the Thermophilic Chlorophototrophs of the Microbial Mats of Alkaline Siliceous Hot Springs in Yellowstone National Park, WY, USA	87
Marcus Tank, Vera Thiel, David M. Ward, and Donald A. Bryant	
The <i>Chlorobiaceae</i>, <i>Chloroflexaceae</i>, and <i>Heliobacteriaceae</i>	139
Michael T. Madigan, Nicole A. Vander Schaaf, and W. Matthew Sattley	
Phototrophic Gemmatimonadetes: A New “Purple” Branch on the Bacterial Tree of Life	163
Yonghui Zeng and Michal Koblížek	
Aerobic Anoxygenic Phototrophs: Four Decades of Mystery	193
Vladimir Yurkov and Elizabeth Hughes	

Part II Environment and Ecology

Desert Crusts	217
Patrick C. Hallenbeck	
Cyanobacteria in Terrestrial Symbiotic Systems	243
Jouko Rikkinen	
Phototrophic Microbial Mats	295
Lucas J. Stal, Henk Bolhuis, and Mariana Silvia Cretoiu	

Part III Bioremediation, Secondary Metabolites and Other Applied Aspects

Photosynthetic Purple Non Sulfur Bacteria in Hydrogen Producing Systems: New Approaches in the Use of Well Known and Innovative Substrates	321
Alessandra Adessi, Elisa Corneli, and Roberto De Philippis	
Engineering Cyanobacteria for Biofuel Production	351
Rui Miao, Adam Wegelius, Claudia Durall, Feiyan Liang, Namita Khanna, and Peter Lindblad	
Engineering Photosynthetic α-Proteobacteria for the Production of Recombinant Proteins and Terpenoids	395
Achim Heck and Thomas Drepper	
Anoxygenic Phototrophic Bacteria from Extreme Environments	427
Johannes F. Imhoff	
Index	481

Modern Topics in the Phototrophic Prokaryotes

Environmental and Applied Aspects

Hallenbeck, P. (Ed.)

2017, VI, 492 p. 82 illus., 53 illus. in color., Hardcover

ISBN: 978-3-319-46259-2