

CONTENTS

Contributors

vii

1. The Regulation of Secondary Metabolism and Mutualism in the Insect Pathogenic Bacterium <i>Photorhabdus luminescens</i>	1
Susan A. Joyce, Lea Lango, and David J. Clarke	
I. Introduction	2
II. Life Cycle of <i>Photorhabdus</i>	4
III. Secondary Metabolism in <i>Photorhabdus</i>	5
IV. Relationship Between Secondary Metabolism and Mutualism	11
V. Regulation of Secondary Metabolism	13
VI. Conclusion	18
Acknowledgments	19
References	20
 2. Assessing the Relevance of Light for Fungi: Implications and Insights into the Network of Signal Transmission	 27
Monika Schmoll	
I. Introduction	29
II. Dealing with Recurring as Well as Unexpected Changes of Illumination	31
III. Let there be Light—Reactions of Fungi	39
IV. Crossroads for Integration of the Light Signal with Other Environmental Cues	46
V. Biological Significance of Proper Dealing with Light	60
VI. Relevance of Light Signals in Artificial Environments—Biotechnology and Research	62
VII. Conclusions and Perspectives	63
Acknowledgment	64
References	64

3. Detection and Quantification of Microbial Cells in Subsurface Sediments	79
Jens Kallmeyer	
I. Introduction	80
II. Historical Overview of Deep Subsurface Research	81
III. Sample Acquisition	83
IV. Sample Preparation and Analysis	89
V. Cell Separation	96
VI. Automated Counting Techniques	97
VII. Other Methods for Biomass Estimates	98
References	98
<i>Index</i>	105
<i>Contents of Previous Volumes</i>	109