

Preface to the second edition

Twelve years ago the first edition of *Lichen Biology* was published, and brought a new synthesis to the field of lichenology. In the meantime, rapid advances in many areas, particularly in molecular biology, have expanded our horizons and added depth to our knowledge of areas already under investigation. Consequently, it is appropriate that a second edition has now been consummated.

The original edition had 13 chapters, but this edition has 17 chapters and has added an appendix on lichen culturing, which is becoming prominent in the expanding biotechnology area. New chapters include one on sexual reproduction (Chapter 6), summarizing knowledge not available in 1996. As prominent examples of stress-tolerant organisms, lichens have developed a variety of strategies that allow them to occupy both extremely cold and hot environments; consequently, these investigations were meritorious of a chapter of their own (Chapter 8). In addition, a chapter on growth (Chapter 10), a topic briefly covered in the original photosynthesis chapter, is now expanded to cover much new information and the major advances over the past decade. Although many aspects of the ecology of lichens were covered in the first edition, a number of important areas were omitted. This has been rectified in Chapter 14. Of the remaining chapters, the chapter titles remain the same from the first edition, but all chapters have been revised to a greater or lesser degree. For example, the chapter on the individual (Chapter 13) and air pollution (Chapter 15) bear little resemblance to their original counterparts. Altogether 13 additional people have contributed substantially to this edition.

As with the first edition, this book should be of interest to the specialist, whether amateur or professional lichenologist. Furthermore, the book will provide an essential reference for many other people, such as anyone interested in the phenomenon of symbiosis, ecologists interested in the role of lichens in ecosystems, or a land manager charged with assessing the effects of air pollution on natural systems. We also hope it will stimulate the next generation of students and young scientists to advance our knowledge of these wonderful organisms.