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**Book review.**

# Lichen Biology

Edited by Thomas H. Nash III
315 pages, including numerous b/w plates, lines drawings and tables
1996, Cambridge University Press, Cambridge
ISBN 0-521-45368-2 Hardback £50.00
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Although a welcome addition to our knowledge of lichens, containing some hitherto unpublished and unsynthesized material, the style, and to a large extent the content of this book militates against its stated objective, namely to replace Mason Hale's admirable *The Biology of Lichens* (three editions, 1967, 1974, and 1983) which was for so many their introductory reading on the subject. In parallel to this work were Hawksworth and Hill's *The Lichen-forming Fungi* and Lawrey's *Biology of the Lichenized Fungi*, both published in 1984 and containing a wealth of introductory information, the former providing for some an alternative text to Hale and the latter taking a more esoteric view and being complementary to Hale.

Nash's edited work does not fully serve as an introductory text, but may have some value as a student textbook. Although the editor has drawn together ten leading lichenologists (including himself) to contribute to chapters, for the most part they rely on their own research interests and in some cases material overlaps that contained in other chapters. The editor has made an effort to unify the style and approach of the different authors and produced a single comprehensive bibliography of 639 titles and an extensive index, but the inherent difficulties which arise from multi-authored volumes are still apparent. One such difficulty is the down-playing or indeed omission of some important aspects, such as the interactions of lichens with

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other biota, more particularly animals, and ecology in general, which, with few exceptions (see below), receives only cursory treatment in chapters devoted to other topics – the reader drawn there via the index will be disappointed by the scant coverage.

Despite these misgivings regarding its educational role, this book has much to commend it, and certainly those already familiar with the subject will find much to interest them. Honegger's chapter maintains her usual high standards, superbly portraying mycobionts and morphogenesis in photographs, line drawings, flow-diagrams and tables; those interested in symbiosis will marvel at the detail of her TEM and SEM micrographs of the photobiont-mycobiont relationships. Nash, as would be expected, ably contributes chapters on physiological processes, including the book's only significant material on the role of lichens in ecosystems through their productivity, nitrogen contribution and mineral cycling. Fahselt's chapter on individuals, populations and population ecology provides authoritative state-of-the-art information on molecular genetics, nucleotide sequencing, enzyme banding patterns, intraspecific variation, conspecific populations, gene flow and ecotypes, but, despite a chapter title which includes 'population ecology', no attempt has been made to look at interspecific populations. Authoritative chapters are also provided on photobionts (Friedl and Budel), morphology and anatomy (Budel and Scheidegger), biochemistry (Elix), biogeography (Galloway), systematics and classification (Tehler), and lichens as air pollution indicators (Gries).

Unfortunately numerous citation and spelling errors (which include the reviewer's name!) have been detected throughout the text; no doubt these errors and the deficiencies referred to earlier can be rectified when a new edition appears, as it surely will in view of the potentially wide readership for this book.

This excellently produced work represents good value in paperback, but the mark-up for the hardback is outrageous!

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