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BOOK REVIEW

Moss B. 2017: PONDS AND SMALL LAKES. MICROORGANISMS AND FRESHWATER ECOLOGY. NATURALISTS' HANDBOOKS 32. Pelagic Publishing, Exeter, UK, 216 pp. ISBN 978-178427-135-0 (Pbk), 978-178427-135-7 (ePub), 978-178427-135-4 (Mobi), 978-178427-135-1 (PDF). Price GBP 19.99 (Pbk).

The author starts with a gripping story about living in freshwater based on his studies on a pond in Pembrokeshire, southwest Wales. He enlarges this story to include ponds and lakes in Britain and Ireland, changes that have occurred in the approaches and points of view on this topic, examples of studies on freshwater bodies located in other countries and finally presents the information within a comprehensive generalized framework of freshwater ecology.

As indicated by the above, this book is unlike most other handbooks on freshwater organisms, i.e., with a short introduction on the water environment followed by an extensive survey of the organisms. It has a very different structure. Ponds and small lakes can be very diverse and support an extremely rich biodiversity. From this diversity and richness the author carefully selects examples of organisms of different taxonomic levels and their relationships to their surroundings, examples of interactions within and between species and their environments, practical tips on studying ponds and lakes and ideas for research projects, and phenomena that are unforgettable and/or of key importance.

Now, what topics are included in the ten chapters of this handbook? The first chapter entitled "Ponds" introduces mainly the typology and diversity of ponds and lakes. Chapter 2, "Living in freshwater", deals with the physics and chemistry of water and the chemical communication of organisms living in this medium. The third extensive chapter, "The littoral", presents numerous examples of littoral microorganisms (protists, algae, microfungi), higher taxa or groups of macroinvertebrates and methods of sampling them, briefly mentions plants, fish, amphibians and birds and the influence of light on littoral organisms. Fourth chapter, "Plankton", introduces phyto- and zooplankton, their relationships and spatiotemporal changes. Chapter 5, "Catchments, nutrients and organic matter", is the second part on water physics and chemistry, which is related to autotrophic production, eutrophication and supplies of organic matter, respiration and heterotrophy. It illustrates how the catchment area affects ponds and their production. Chapter 6, "Ecological development of ponds and lakes", is a brief excursion into succession in pond ecosystems, niches in ponds and paleolimnology. It also shows how to determine and measure biodiversity. In chapter 7, "Food webs and structures in ponds", the complex view of living in ponds and lakes gradates into how and why populations change and that food webs and their stability or changes are central to understanding how ecosystems function. Chapter 8, "Problems with ponds and small lakes", deals with historical changes in ponds and lakes, drainage and wastewater treatment, water quality, eutrophication, acidification, engineering damage to river systems, pond creation and management. Ninth chapter, "Ponds and the future", reflects on the importance of human activity, damage to ponds and lakes due to climate change (effects of warming), food security, water supply and biodiversity. The last chapter, "Bibliography and further information", is arranged by sections that give information on studies on individual taxa of water organisms and generally on ecology and the topics included in the previous chapters.

Each naturalists' handbook usually includes keys for the identification of organisms. This handbook includes eight keys. Seven of them are in the chapter "The littoral" [A, Traditional key to kingdoms of organisms; B, Contemporary key to kingdoms of organisms; C, Pragmatic key to groups of organisms; D, Algae visible, at least *en masse*, to the naked eye; E, Periphyton, both attached to surfaces and free living; F, Major orders of free living protozoa; G, Freshwater invertebrate groups (and a few genera) most commonly encountered]. One key is part of the chapter "Plankton" (H, Common phytoplankton genera in ponds in Britain and Ireland). These keys are more or less pragmatically based, which is reasonable and useful for the anticipated target group of readers and users. All these keys are richly illustrated by drawings and a reader can easily work with them. Thus, it does not matter that key B, Contemporary key to kingdoms of organisms, is partly not up to date. Besides the eight presented keys, readers would likely welcome a ninth simplified, brief and practical key (which could be entitled Common genera/groups of zooplankton in ponds) in the fourth chapter. This key would complement Table 3.1 and key G (invertebrate groups) and supplement key H (common phytoplankton).

Finally, this book presents a dynamic and readable account of freshwater ecology. It contains all the aspects included in the title. The plants and animals living in freshwater are only mentioned and mainly in a functional context relative to the main topics of the individual chapters. Nevertheless this book successfully provides a comprehensive view of the natural history of ponds and small lakes. It is a brief modern insight into freshwater ecology and limnology aimed at a wide non-specialist audience. I am convinced that this handbook will prove to be an extremely helpful source of information, not only for people with an interest in water microorganisms and ecology, but also students dealing with different groups of freshwater macro organisms (e.g., especially students of the biology and ecology of water insects) and also a useful source of inspiration for biology teachers.

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