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Book review

Spektrum Akademischer Verlag, Ökologie. kompakt, W. Nentwig, S. Bacher, R. Brandl. Springer, Berlin, Heidelberg (2007). 344pp., €25.00, ISBN: 978-3-8274-1876-0

The ecological literature is full to the brim with anecdotes about how organisms live their lives. The challenge for lecturers is to provide students with a coordinate system for the vast and often seemingly unconnected plethora of knowledge, ranging from experiments on different genotypes over theoretical models to biogeochemical processes at the global scale. Students, and professors, turn to textbooks for guidance – will they find it in “Ökologie kompakt”?

This undergraduate textbook aims to introduce all relevant ecological themes and phrases. Thus, while a “full” ecology textbook would link school knowledge to the primary literature, an undergraduate textbook can only aim to link it to advanced, specialised textbooks. “Ökologie kompakt” is, despite its introductory claims of being the opposite, a dressed-down “full” ecology textbook, and more scientific than Wittig and Streit’s “Ökologie”. In this respect it resembles Townsend et al.’s “Essentials of Ecology”, although it is still more condensed, attempting to get the gist of ecology into its 340 pages. Readability suffered under this task, lacking the easy flow that is so appealing in well-crafted English textbooks. Rather than linking ecological knowledge by some guiding theme, it stacks up facts in the classical individual to populations to communities to ecosystems framework. Pointing out how fitness maximisation of the individual (and hence evolution through natural selection) drives all living nature and manifests itself in species, interactions as well as fluxes of energy, mass and nutrients would have given an undergraduate student something to hold on to.

The ecological facts and concepts are introduced competently, some parts didactically very nicely developed (e.g. Section 3.5.1 on predator–prey models). Also the ecology of plants is accurately described, despite (or because?) all three authors being zoologists. But throughout the book the content seems too ambitious, the phrasing too dense, the text too fact-ridden to allow for easy access. The reader has to be fully alert all the

time, no message is repeated. And there is one major shortcoming in the form: there should be, at the end of each chapter, a brief list of specialised textbooks, important reviews or pivotal case studies, rather than in-text references to mostly specific case studies. As it is now, the reader would not know where to turn for more information, say, on population biology of plants. Page 80 provides a positive example of this type of information for theoretical ecology, but in the other chapters it is missing.

On the positive side, the introduction of both German and English technical terms is very helpful, even though “self-thinning” and “numerical response” were not included. Also the exercise questions (and their solutions on the book’s web pages) are well-posed and challenging. The layout and graphs are pleasing and, largely, up-to-date and correct. There are inevitably some minor errors (if you want me to nag: the authors report the relationship between biodiversity and ecosystem function as unresolved, despite Cardinale et al.’s 2006 review; the formula on page 131 is not the intended one; a symbol in Fig. 3.6 is represented by an empty box; alpine plant interactions are certainly not “durchweg positiv”). Also, a numbering of the equations would have been very useful.

Overall, the book did not convince me completely. It is denser than Nentwig et al.’s “Ökologie” (2003), but less accessible than its two full-format rivals “Ecology” (Begon et al.; Krebs). Also, despite its ambitious amount of content, no discussion on molecular ecology or macroecology can be found. As a 21st century textbook one might have hoped for references to online resources (e.g. software links, data, wikispecies, Gutenberg project featuring all of Darwin’s work). Thus, despite its modern look and feel, “Ökologie kompakt” is a compact classical textbook for ecology – and presently the best one can get in German.

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