

Limnol. Oceanogr., 45(3), 2000, 752
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BRÖNMARK, C., AND L. HANSSON. 1998. **The biology of lakes and ponds**. Oxford University Press. xii + 216 p. \$35. ISBN 0-19-854971-7 (paperback).

This very readable book is intended as an introductory text. Its focus on adaptations of organisms to the abiotic environment and the importance of biotic processes and interactions in food webs make it appropriate for the second half of a limnology course. Although a modest amount of information is given about physical and chemical factors in lakes, it is done so only within the context of adaptation of organisms. Some problems arise from this approach: the section on turbulence could easily use an additional paragraph explaining seiches (both surface and internal), and much more space is devoted to explaining crassulacean acid metabolism than alkalinity (which does not even appear in the index). The concept of critical depth, which is important to understanding phytoplankton dynamics, is also completely missing. Finally, the section on complex life cycles and metamorphosis in temporary habitats could have been much improved by reference to the excellent work by Werner and his students in the 1990s.

The chapter on representative freshwater organisms contains superb line drawings and is the best I have seen in any aquatic ecology text. The only conspicuous gap is the lack of information on modern techniques for identifying bacteria 'species.' The extensive treatments of competition, herbivory, predation, symbiosis, and food webs clearly reflect the authors' forte; a lot of information is packed into these 84 pages. Fish and macrophyte ecology are given more play than usual, and inset drawings of organisms on graphs add significantly to the transfer of information. The treatment of trophic levels unfortunately does not discuss the important fact that $\delta^{15}\text{N}$ typically shows a +3‰ increment per trophic level. I was also disappointed to find no mention of recent work on food quality and how it affects food web transfers of elements (N, P) and biochem-

ical constituents. The last chapter on anthropogenic impacts was a reasonable introduction to a subset of potential topics.

The presentation of the book is generally of high quality. Misspellings are relatively rare, although the first time it appears (in bold) 'trophic' is misspelled. The use of 'eurotherm' instead of 'eurytherm' throughout the text is also disconcerting; is this a European convention? Exclamation points are overused and the glossary is inadequate, including some terms (e.g., anterior, dorsal, lateral, posterior, and ventral) that are surely not necessary and leaving out other important ones (bioturbation, clear water phase, epibionts, Redfield ratio, Secchi depth, and vertical migration). The references need to be updated (only 35% were since 1990); those dealing with algae are particularly aged.

These are exciting times in aquatic science, and writing a readable limnology textbook for a one-semester course is very challenging because of the many fronts along which advances are being made. Brönmark and Hansson have succeeded in conveying some of the excitement about biotic interactions among aquatic organisms. A recent text by Lampert and Sommer (1997) took the same abbreviated approach. But this is only part of the story. It remains for future textbooks to illuminate the new connections that are being found between physical, chemical, and biotic components.

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References

- LAMPERT, W., AND U. SOMMER. 1997. *Limnoecology: The ecology of lakes and streams*. Oxford University Press. (Reviewed by Vanni, M. 1999. *Limnol. Oceanogr.* **44**: 1843).