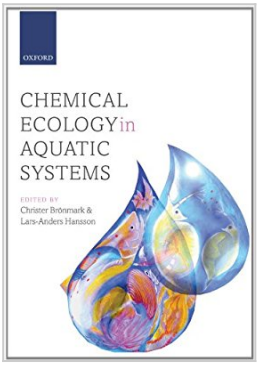

Chemical Ecology in Aquatic Systems

By Christer Bronmark, Lars-Anders Hansson

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In recent years it has become increasingly clear that chemical interactions play a fundamental role in aquatic habitats and have far-reaching evolutionary and ecological consequences. A plethora of studies have shown that aquatic organisms from most taxa and functional groups respond to minute concentrations of chemical substances released by other organisms. However, our knowledge of this "chemical network" is still negligible. Chemical interactions can be divided
into two larger sub-areas based on the function of the chemical substance. First, there are interactions where chemical substances are toxic to other organisms and are used as a defence against consumers (including both herbivores and predators) or a weapon against competitors (allelopathy). Second,
chemical substances may be used as a source for information of the environment; for example: how can I find the optimal habitat, the best food, the nicest partner, and avoid being eaten? Aquatic organisms are able to detect and respond to extremely low concentrations of chemical cues to answer all these questions. The book aims at connecting these intriguing chemical interactions with traditional knowledge of organism interactions.

Chemical Ecology of Aquatic Systems covers a wide range of studies, both plant and animal, from different geographic regions and habitats - pelagic as well as benthic. Most of the chemical interactions are similar in freshwater and marine habitats and this book therefore strives at integrating work on both systems.

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Editorial Review

Review
This is a multi-authored and ... well edited volume. ... Unlike many such volumes, it is not the result of a workshop, but rather the result of the efforts of hand-picked authors. ... I can recommend this book as a good introduction to newcomers in the field of aquatic chemical ecology. Thomas Kiorboe, National Institute of Aquatic Resources, Technical University of Denmark

About the Author

Christer Bronmark is a professor of Limnology at the Department of Biology/Limnology at Lund University, Sweden. His main research interests resolve around the importance of indirect interactions in freshwater food webs and how these affect the structure and function of lake ecosystems. Here, chemical cues from predators have been shown to affect the behaviour and morphology of their prey and such trait-mediated interactions may in turn affect organisms at lower trophic levels. A spectacular example of an inducible morphological defence was shown in the Crucian carp that responded to diet-related chemical cues from piscivorus fish by increasing their body depth. Bronmark has published more than 80 papers in international, peer-reviewed journals and has published a textbook (The Biology of Lakes and Ponds) at OUP (together with Lars-Anders Hansson). Besides research Bronmark has long experience of teaching at both the undergraduate and the graduate levels.

Lars-Anders Hansson is a professor of Limnology at the Department of Biology/Limnology at Lund University, Sweden. His main research interests includes direct and indirect interactions in freshwater systems, specifically how organisms use plastic traits and chemical cues to simultaneously handle and compromise among multiple threats. He has performed studies on most aquatic organisms, but the main focus has been on free swimming plankton organisms and the mechanisms behind their migration and movements. Within this research area he has introduced nanoparticles as tracking devices, allowing studies on behaviour, responses to chemical cues and migratory patterns of these small organisms. Hansson is also teaching at undergraduate and graduate courses in aquatic ecology and has a long publication record and has, together with Christer Bronmark written a text book in Limnology (The Biology of Lakes and Ponds) and also co-edited a book on Lake restoration (together with Eva Bergman).

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