

BOOK REVIEW

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VAN DER VELDE, GERARD, SANJEEVI RAJAGOPAL & ABRAHAM BIJ DE VAATE
(eds.), 2010. The Zebra Mussel in Europe: I-XVII, 1-489. Backhuys
Publishers, Leiden & Margraf Publishers, Weikersheim, hardbound.
ISBN 978-90-5782-189-9. Price € 140 + VAT.

In the last two decades, the zebra mussel *Dreissena polymorpha* (Pallas, 1771) has become one of the most infamous aquatic invading species of European freshwater ecosystems. Thanks to its fast range expansion and fouling capacities it has received much attention in the scientific literature with regard to its economic and ecological impact. Several books already have been published on this species, but an updated compilation of observations from Europe was needed, particularly dealing with the latest range extensions here.

The three editors of the present book are all aquatic biologists with a major interest in invertebrates and as such they are well-acquainted with the problems involving invasive organisms. They managed to gather 92 contributing authors besides themselves in order to complete this new state of the art overview of zebra mussels, but also its closest relatives in the family Dreissenidae. They produced 41 chapters divided over six sections.

The first section consists of three chapters on fossil and recent species of Dreissenidae and related families, which is relevant for readers interested in the systematics of bivalves. The first chapter presents a taxonomic introduction to the Dreissenidae, with a focus on the genera *Mytilopsis* and *Dreissena*. Apart from *D. polymorpha*, Europe also has to deal with *D. rostriformis bugensis* Andrusov, 1897, commonly known as the quagga mussel, and *M. leucophaeata* (Conrad, 1831), Conrad's false mussel. The European distribution range of these species is presented in distribution maps indicating the progress of expansion since their introduction. An overview of the phylogenetic position of the Dreissenidae among other families,

indicates that the Dreissenidae are not even closely related to the real mussels, the Mytilidae. The second chapter presents an interesting taxonomic overview of the Dreissenidae, including extinct species known from the fossil record. For every genus (five in total) a schematic illustration is given showing the differences in basic shell morphology. The third chapter treats *M. leucophaeata*, which has remained much closer to the coastline than its two relatives. The latter have invaded Europe far land-inward through various rivers.

The second section contains several chapters that deal with distribution, dispersal and genetics of zebra mussels. There is much background information on the range expansion and the relevance of life history, environmental requirements and ecological limitations. The section also includes detailed case histories of the zebra mussel in chapters on various European countries. The third section deals more specifically with the food, growth and life history of European zebra mussels.

The section on ecology and ecological impact tells us much about zebra mussels in relation to other organisms in their environment, plants and animals. Zebra mussels may use aquatic plants as substrate and after the plants break loose, the plant material may float away and assist in further dispersal of the bivalves. Other species of benthic invertebrates either benefit or come to grief by the introduction of the bivalves. For instance, the shells may offer a suitable substrate to other animals while the faeces of the dreissenids may serve as a food source. On the other hand, freshwater mussels belonging to the Unionidae experience competition for food because of the presence of zebra mussels. Dreissenids themselves may be the host of invertebrate endosymbiont communities, including commensals and parasites. In some areas these bivalves are an important food source for water birds.

The last two sections may be the least interesting to many malacologists since their chapters are about the benefit of zebra mussels as indicator for water quality and about their role as fouling organisms causing economic damage.

The book has a nice lay-out with large pages that are of A4 paper format. Its binding seems to be of good quality. There is a taxonomic index and a subject index. Considering the price, the book seems to be intended for professional use. To non-professional malacologists, especially the first section of the book is recommended.