

## Book Review

### RHODOLITH/MAËRL BEDS: A GLOBAL PERSPECTIVE

Riosmena-Rodriguez, R., Nelson, W. & Aguirre, J. (Editors) 2016.  
Springer, Coastal Research Library, 15, VIII, 368 pp., DOI: 10.1007/978-3-319-29315-8.

The significance of rhodolith/maërl beds to present-day marine environments is one of the most popular subjects related to habitats dominated by red algae. In the context of the conservation and protection of these complex ecosystems, the international scientific community has set up a series of international rhodolith workshops and has created professional bridges between paleontologists and phycologists. In the last decade, there was a significant increase in the number of rhodolith/maërl researchers, to the satisfaction of the red algae specialists.

The newest and most prominent results of this community were gathered in the, currently, most complex interdisciplinary synopsis on red algae: „Rhodolith/Maërl beds: A Global Perspective”. Firstly, this book acknowledges the scientific work of Prof. Riosmena-Rodriguez who, sadly, has passed away in March 2016. As a remarkable and dedicated phycologist, Riosmena-Rodriguez has significantly contributed to a better understanding of red algae from both taxonomic and ecologic perspective. He was also involved in the instruction of a new generation of phycology researchers as well as in sea environment protection.

The book is structured into three main parts: „The role of rhodolith/maërl beds in modern oceans”, „The role of rhodolith/maërl beds in historical oceans” and „Conservation status of rhodolith/maërl at major ocean basins”.

Why are red algae in general, and the rhodolith/maërl beds so important?

In **the first part** of this book, a clear and detailed answer to this question is formulated, organized into four chapters. The first chapter includes general information on rhodolith/maërl beds, as well as an introduction to the currently used terms and definitions important in the identification of marine environments. A brief overview of the most significant studies, starting with the 19th century points to the significance of the rhodolith/maërl beds in the study of coastal habitats' biodiversity. This chapter ends with a clear picture of the anthropic impact on the habitats dominated by rhodolith/maërl beds. Further detailed studies and the establishment of management strategies can contribute to a favorable development and protection of these habitats. The second chapter debuts with an introduction to algeochronology, a very recent direction of research. All the red algae proxies that are currently used in climate reconstruction and the identification of the fossil marine environments' components are presented. This area of research can develop only based on the results of new studies on the structure and chemical composition of red algae species. The importance of monitoring red algae in the present-day marine ecosystems is in

focus in the third chapter. A detailed presentation points to the effects of global warming and ocean acidification on the rhodolith/maërl beds. The last chapter of the first part focuses on the economic importance of the carbonate rocks produced by red algae. Additional to detailed information on the most classical usage, *i.e.*, as construction materials, this chapter describes cases of such carbonates as host rocks for oil reservoirs. The consequences of maërl mining are also presented.

**The second part** of the book mainly addresses the paleontologists and sedimentologists. Firstly, it underlines the importance of a detailed characterization of rhodoliths when it comes to paleoenvironmental or paleoclimate reconstructions. Undoubtedly, from a modern perspective taxonomic studies on fossil red algae should consider as many criteria as possible that are used in the identification of present-day red algae. The authors exemplarily approach all these aspects in the chapters of this second part, inclusive by the means of a selected case studies on diverse rhodolith deposits. In focus are studies on Cenozoic rhodolith deposits from Mediterranean basins (chapters 6-8), emphasizing their geological importance. Additionally, chapter 9 includes results on the taphonomy and dynamics of the sediments corresponding to some fossil and actual rhodolith beds in the North Atlantic Ocean.

**The third part of the book** is dedicated to the presentation of the current conservation status of the best studied rhodolith/maërl beds from Atlantic, Mediterranean and Pacific basins. Besides a detailed characterization of habitats dominated by red algae, the chapters of the last part reiterate the importance of monitoring and data collection on specific geographical distribution, species inventory, ecological features for each identified habitat, in the view of their better protection and preservation.

To conclude, the book „Rhodolith/Maërl beds: A Global Perspective” is a must for any student in natural sciences interested in understanding the diverse aspects related to red algae. Recent research focusing on the attempt of protecting rhodoliths-dominated habitats, brought them into the spotlight in the last decade. This underpinned the interest for geological studies on fossil deposits dominated by red algae. Due to its methodological contribution to a complex and complete investigation, this book is warmly recommended to all the paleontologists and sediments involved in the study of deposits with red algae.

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