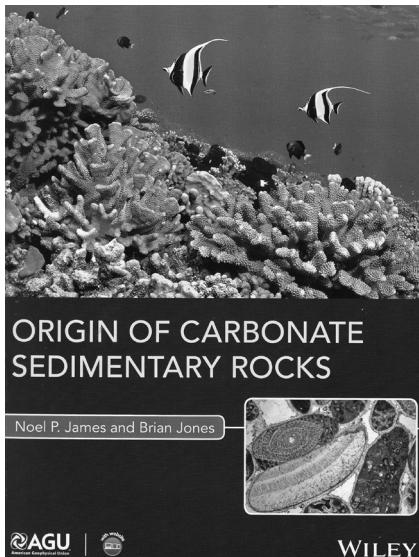


Book reviews

Origin of Carbonate Sedimentary Rocks, by Noel P. James and Brian Jones, 2016. John Wiley & Sons Inc., Chichester, United Kingdom. 464 pages. Paper cover: price 54 EUR. ISBN 978-1-118-65270-1



There are no other sedimentary rocks that are as widespread and that form in such a variety of depositional systems as carbonates: from freshwater to marine, from land to deep water, from warm to cold water. Such a diversity of sedimentary conditions results in a broad range of carbonate types with specific features that reflect conditions of deposition. The genesis of the majority of carbonates is linked with biogenic activity of plants and animals. As a consequence, carbonate rocks are archives of the evolutionary history of organisms. Their global distribution and biogenic genesis makes this group of sedimentary rocks exceptional for reconstructions of ancient environments, including climate. Environmental changes can be tracked using a wide array of techniques including sedimentological, geochemical and palaeontological methods.

Noel P. James and Brian Jones compiled the basic knowledge of carbonate rocks in their new book 'Origin of carbonate sedimentary rocks'. The authors are experienced researchers of carbonate sediments and rocks with extensive fieldwork practice. For over 40 years, Professors James and Jones

have taught numerous courses on carbonate sedimentology and diagenesis which has ensured the well-structured, selected contents of the textbook which is primarily intended as a teaching tool in geology or oceanography.

The book is composed of three major parts. In the first part, which presents an overview of carbonate sedimentology the reader is familiarised with basic facts regarding carbonates, inclusive of carbonate chemistry and mineralogy. A variety of processes that result in carbonate mineral precipitation and carbonate rock formation are presented and discussed in five chapters.

In the second part of the book the authors focus on carbonate depositional systems: from freshwater to marine and from shallow-neritic to deep-water pelagic carbonates. Separate chapters are dedicated to Precambrian carbonates, carbonate sequence stratigraphy and application of carbonates in studies of palaeoclimate, palaeoceanography and palaeontology.

The third part considers the broad problem of carbonate diagenesis. In 12 chapters the authors describe the basic processes and environments of diagenesis, including synsedimentary marine diagenetic environments, meteoric diagenesis of young limestones, burial diagenesis of limestones as well as dolomitisation.

What makes this book a highly valuable teaching tool is its graphical part. High-quality photographs and legible graphics form an excellent supplement of the text. The majority of carbonate types, sedimentary structures, rock-forming fossils, diagenetic structures or depositional environments described in the text are illustrated well and make the text easy to follow. The book goes with a companion website, www.wiley.com/go/james/carbonaterocks, with powerpoints of all figures and pdfs of all tables from the book for downloading.

'Origin of carbonate sedimentary rocks' is an excellent introduction to the problems of carbonate sedimentary rocks, their depositional environments

and diagenesis, intended for students but also for everyone desiring to gain a basic command of carbonate sedimentary rocks. More inquisitive readers may be unsatisfied with the general descriptions. However, each of the 32 thematic chapters includes

a list of the most important books and papers for further reading.

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