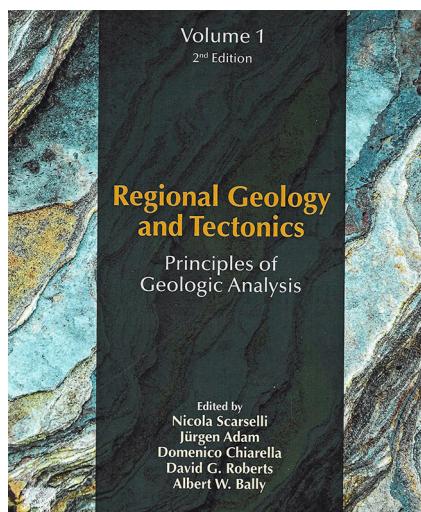


Regional geology and tectonics, volume 1: Principles of geologic analysis (2nd edition), by N. Scarselli, J. Adam, D.G. Roberts, A.W. Bally (Eds.), 2020. Elsevier B.V., Amsterdam, 894 pages. Paperback: price €183.75, ISBN 9780444641342.



Certain books are addressed to large groups of readers in geology (in education or professionally), both in academia and the industry. These include geological encyclopaedias, vocabularies and academic textbooks, but also different kinds of compendiums. The first volume of the three-part series "Regional geology and tectonics" is definitely a perfect example of the latter type of publication. Behind the slightly enigmatic subtitle of this part (i.e., "Principles of geologic analysis") of the series, there is an excellent set of 27, mutually independent, chapters related to a wide array of problems in the different fields of geology and related disciplines. All of these parts are united by a common connection with a regional-scale attitude in thinking about the processes that shape the Earth's surface and lithosphere. As suggested on the back cover, special reference is made to hydrocarbon exploration-oriented readers. However, this item goes much further than the members of the petroleum geoscience community.

This second edition is a distinctly modified follow-up of the original version, published in 2012 and edited by David Roberts and Albert Bally, who passed away in 2013 and 2019, respectively. The new edition was prepared in its final form by three geoscientists from the Royal Holloway, University

of London. Nicola Scarselli, Jürgen Adam and Domenico Chiarella continued the brilliant ideas and previous work by Roberts and Bally. In fact, the present issue is a different book, in that it contains numerous new chapters, which is in accordance with the intent of the original editors, as stated in the foreword to the volume. Only some chapters are the same as in the first edition; however, part of them have been rewritten and updated. Generally, the contents of the recently published volume are distinctly different from the original version, when the main issues discussed are considered. Among others, there are previously omitted topics connected to the basics of plate tectonics, fault structures, lacustrine and deltaic environments, turbidites or conventional petroleum systems. In my opinion, both editions of the "Principles of Geologic Analysis" are mutually independent, in some way complementary masterpieces. The second edition is recommended not only to new readers, but also to those who are well acquainted with the previous one.

The voluminous book (almost 900 pages) includes texts that are related to a few clearly distinguished main issues, but with a single exception, are not subdivided into sections or segments. Accordingly, chapters 4-11 refer to a wide set of topics related to global and regional tectonics, as well as structural geology, while chapters 12 to 18 focus on sedimentary environments and processes. Chapters 19-23 are linked to geological and geophysical methods applied in regional studies, whereas chapters 24-26 deal with petroleum geoscience. At the beginning of the book, there are also several chapters that are more loosely linked with the above-mentioned, well-defined fields. Chapter one provides a bridge between regional/global tectonics and basin analysis. Chapter two describes the structure of the Earth's interior, while chapter three is devoted to the geochronology of the ocean floor. All 26 chapters can be treated as independent review texts related to specific, more or less narrow topics related to an understanding of numerous aspects of regional geology and tectonics. Finally,

the book concludes by its longest and particularly valuable part. Chapter 27, written (and drawn) by Roberts and Bally, with co-authors, includes a wide set of outstanding 36 tectonic and basinal maps of the Earth, which are accompanied by insightful descriptions. The book has forty contributors, representing a wide range of university and industrial affiliations. Two-thirds of the book units (i.e., 18 chapters) were written by single authors. The list of contributors includes a large number of distinguished experts from both academia and industry, who are top-level specialists in their fields.

An enormous advantage of the "Principles of Geologic Analysis" is the vast range of potential readers. The book can be recommended to active scientists and geology-related industry workers (not only from oil and gas) who deal with regional geology issues, but also to geoscience students at both graduate and postgraduate level. The book's contents provide an insight into the modern state of knowledge of every of the subjects discussed. Specific topics in individual chapters usually are described starting from general, basic knowledge accessible to students or geoscientists without extensive knowledge and long experience in any given field. The book is also useful for specialists who wish to gain from the synthetic, well-illustrated texts on their areas of expertise. It needs to be stressed that individual chapters are very rich in references, which are listed at the end of every unit. This guarantees the possibility of continuation of effective literature queries in any of the fields discussed in the book.

Another plus of the "Regional Geology and Tectonics, Vol. 1" is the high number of illustrations, usually full colour and printed in high quality. Only in a few cases the resolution of the figures is not sufficient, which results in blurriness. Generally, the graphic content of the book is a remarkable merit, which seems to be obvious, and even decisive as far as its rating as a publication on regional geology and tectonics is concerned. These abundant illustrations include hundreds of sketches, photographs, maps, cross sections, seismic sections, diagrams etc. They are found in all chapters, making their textual content easier to absorb and more instructive for readers. In case of the printed paperback edition of the book (~275 x 215 mm), some figures and plates with maps can be challenging, due to their relatively small size, which results in small fonts. Especially, the set of maps in chapter 27 (entitled "Tectonic and basin maps of the world") in many cases calls for larger dimensions of these plates, which perhaps could be applied in future editions of this invaluable series. Reading these (both maps and their legends) is unfortunately rather tiresome, even for a person

with relatively good eyesight. The same comment can be made for maps showing the Earth on a global scale, which appear in several other chapters. The predominant impression here is regret that these important illustrations are not of a larger size, preferably one page each. Here I would like to mention that access to online versions of the plates with maps of chapter 27 is indicated via the website address given in the annotations of those figures.

The present book includes a subjective selection of topics, which seem to have been chosen by the editors as the most important ones, in their view, on regional geological studies. The list of issues included in the tome is disputable and definitely does not cover all topics involved in regional geology and tectonics. For instance, the volume is poor in texts dealing with magmatic and metamorphic processes, which definitely belong to the key subjects of geological analysis at regional scales. However, the book is biased towards sedimentary geology, which is understandable since the "Regional Geology and Tectonics" series belongs to petroleum-related publications. Although the reviewed book is universal in its content and potential readership, it was written within the context of regional geological knowledge and methods in petroleum geoscience and hydrocarbon exploration. Sedimentary basins, with their architecture, mode of origin and evolution shaped by tectonic processes at global and regional scales, are key subjects of studies related to the presence of hydrocarbon accumulations and their prospecting. This explains the selection of components included in the list of contents (titles of chapters) referred to the "Principles of Geologic Analysis". Anyway, I wholeheartedly recommend this book not only to readers connected with petroleum geology. Allow me to suggest that any person dealing in his/her research activity, professional work in industry or during educational process with broadly defined issues of regional geology, global and regional tectonics, facies analysis, sedimentology, stratigraphy and novel geoscientific methods related to regional analysis, read the first volume of the "Regional Geology and Tectonics". Among the 27 brilliant, lavishly illustrated review texts on a plethora of issues representing different aspects of regional geological analysis, everyone will find data to improve on their knowledge and eye openers for new perspectives in holistic thinking about the processes that shape the surface and interior of the outermost layer of our planet.

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