



Ore Deposit Geology, by John Ridley, 2013. Cambridge University Press, <http://www.cambridge.org/cl/academic/subjects/earth-and-environmental-science/mineralogy-petrology-and-volcanology/ore-deposit-geology>. Hardback: 398 pages; price USD 85.00. ISBN 987-1-107-02222-5. E-book: price USD 68.00, ISBN 978-1-107-24026-1.

The volume written by Ridley, an eminent expert on the subject and an experienced academic teacher, is aimed at postgraduate geology students who have a basic knowledge of geology and related earth sciences. It deals with both the issues related to the characteristics of ore deposits and ore quality, as well as the processes that lead to the formation of ore deposits. The book is divided into the following six chapters: (1) Basic concepts and classifications, (2) Magmatic ore deposits, (3) Hydrothermal ore deposits I - magmatic and orogenic environments, (4) Hydrothermal ore deposits II - sedimentary deposits, (5) Ore deposits formed in sedimentary environments, and (6) Supergene ores and supergene overprinting of ores.

Chapter 1 provides an introduction into the geology of ore deposits, a brief description of genetic models and types of ore deposits as well as the criteria by which an ore deposit can be classified. None of the numerous classifications of these deposits is ideal, as justifiably remarked by Ridley.

Chapter 2 is devoted to the formation processes of ore deposits in magmatic and post-magmatic environments. The reader learns about magma crystallization processes, research methods of igneous units, and the formation of rare-earth deposits, chromites, platinum and platinum-group metals as well as diamonds, which (although no metallic mineral) are strongly associated with the high-pressure and high-temperature conditions of magma.

The large Chapter 3 deals with the properties of hydrothermal fluids and precipitation products of mineral substances in a variety of geological environments through which these fluids migrate. The deposits characterized in detail are those formed around magmatic intrusions, including porphyry-style skarn and epithermal mineralization (high- and low-sulfidation types), and massive sulfide-type deposits (VHMS), which so far are the best-studied ore deposits. Among the synorogenic deposits, the economically significant Carlin-type gold accumulations are highlighted, as well as deposits of iron, copper, and gold (IOCG).

Chapter 4 describes hydrothermal deposits in sedimentary environments, including the deposits of base metals (Zn-Pb: Mississippi Valley-type and Pb-Zn-Ag SEDEX-type), Kupferschiefer-type (copper shale-type) deposits, as well as deposits that contain uranium.

Chapter 5 deals with the characteristics of sedimentary deposits of iron, manganese, phosphate, and heavy minerals. Chapter 6 discusses the supergene processes and the associated accumulation of bauxite, laterite, gold, and copper. At the end, the book contains a glossary of basic terms related to the subject, bibliography, and index.

The author successfully synthesizes the current knowledge on the geology of ore deposits and combines it with information from related geological disciplines such as tectonics, petrology, and geochemistry (as far as this information is necessary to understand the deposits' phenomena and processes). A simple but precise wording is used to describe the most important examples of deposits.

The main concepts and current hypotheses about the different genetic types of deposits are briefly presented in boxes, which makes this book particularly valuable. The chapters end with questions and exercises, which allow a self-test of the presented knowledge, and with a "further reading" section, with recommendations of the most important publications regarding the processes,

problems, and discussions on the chapters' topics. This makes the use of the textbook easier for both teachers and students.

The layout is careful, particularly the high-quality cross-sections and profiles. Despite simplifications, the sections and profiles include all essential elements regarding a specific ore deposit. Diagrams showing the depositional processes and schematic geochemical trends as well as maps showing the distribution of metal deposits are presented in a clear and legible manner. Numerical summaries in tables are avoided, which is a true advantage for a textbook, because constant changes in the balance of resources take place which would otherwise require frequent updates of the data.

Summarizing the above, the book's layout, clear presentation of the various topics, choice of sample deposits, glossary of selected terms, and excellent graphic material make this textbook a most useful means to study the geology of ore deposits.

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