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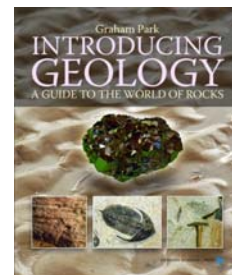
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*Introducing Geology – A Guide to the World of Rocks*, by Graham Park, 2006. Dunedin Academic Press Ltd, Hudson House, 8 Albany Street, Edinburgh EH1 3QB, Scotland. Paperback, 160 pages. Price GBP 9.90; USD 19.99; EUR 14.99. ISBN 978-1-903765-64-7.



Writing a popular science book for amateurs may seem easy, but this is a misconception. It is a challenge for an each scientist – and therefore also for each geologist – to write such a work, particularly for those who have produced papers for professionals for tens of years. Such a scientist easily loses the ability to judge what is easy and what is difficult to understand for non-professionals; he may also lose the insight into what can be the most interesting topics for lay-people. Consequently, many popular-science books meet serious criticism from fellow-professionals, just because most of them think that, if they had written a popular-science book, they would have done so in an entirely different way, touching different problems and focusing on different ideas.

It is even more difficult to evaluate the book “Introducing Geology” by Graham Park, because he wants to touch upon all important aspects of geology, from mineralogy through sedimentology, structural geology and plate tectonics to stratigraphy. This is, obviously, a difficult objective, especially in such a small volume. I can only admire efforts of the author and I am full of respect for him, and on the basis of this attitude I try to judge the book.

The book contains 11 concise chapters. The first chapter deals with mineralogy, with some basic elements of crystallography. The minerals described seem just some choice, suggesting that only those were selected that bear well-known names. One can therefore take for sure that an amateur geologist or a lay person cannot learn mineralogy from this chapter. On the other hand, it contains several interesting points, considering especially gemstones and other rare minerals, which therefore are treated as precious stones.

The next few chapters are organized according to process and form, followed by the type of rocks created under the conditions involved. Igneous rocks are consequently characterized after a description of volcanic activity, sedimentary rocks after the various sedimentary and geomorphologic processes, and metamorphic rocks after dealing with plate tectonics. I liked this way of describing and introducing the various rock types.

Volcanic processes are well characterized, together with the various types of eruption, but I did not like the unduly detailed presentation of the igneous rocks. In addition, the text is, unfortunately, not illustrated by photos of all these rock types, apart from one photo of a granite that is, in my opinion, an atypical example.

Sedimentary processes and sedimentary rocks are the focuses of the next two chapters. Processes are made more understandable by really nice photographs, but the photos of sedimentary rocks are somewhat disappointing. The author, probably trying to be extremely brief, makes also avoidable mistakes, for instance in describing turbidity currents as indicators of deep oceanic settings, and, even more clearly wrong, that 10 cm of fresh snow results in 1 cm of glacier ice. Probably it is just an editorial slip that such mistakes have gone unnoticed into print, but the text should have been reviewed much more critically, as just such pieces of information are the most exciting for the youngster, for whom the book is written.

Describing the fluvial environment, the author has chosen to deal with a meandering river system only. Considering the lack of space in the relatively small volume, it may be considered a good idea to restrict the text about rivers to the most common (and probably also the most popular) type in our part of the Earth, but one would expect that at least some basics are explained. I could, however, not detect how meanders are formed. There is also a mistake in the understanding of turbulence, as a process known from narrow channels only. The treatment of glaciers is limited to valley glaciers, notably in mountain areas. No distinction is made between glaciers and ice sheets, which makes the text in place hardly understandable because kames and eskers – typical forms that are most commonly related to ice sheets – are described.

Sedimentary rocks are briefly but well approached, apart from limestones. These are treated as of solely chemical origin, and no single word indicates that they can be also formed by deposition from clastic (calcareous) particles, or – much more important – by biological activity. This is the more strange because a later chapter deals with fossils. The text on sedimentary rocks finished with “key indicators”; the author uses them to summarize the clues for reconstructing ancient sedimentary environments. This is a very good way to finish the chapter.

Metamorphic rocks are described after plate tectonics, which is concisely presented. Different types of plate collision are described, but I miss a figure explaining the origin of the Himalayas; I would also like to see some more details in a figure of the African Rift and the Red Sea. Such figures, detailing the examples that are described in the text, would make the problem more recognizable for the readers, who may easily consider the text about plate tectonics somewhat too abstract.

Faulting and folding of rocks are presented in the next two chapters. There are a few nice photos of folds and fabrics, but I was not satisfied by the photos of faults and earthquakes. There is only one photo of damage caused by an earthquake, and no information how intense was it according to the scale printed on the next page. Much is said about the San Andreas fault, but I miss a map with its location. Perhaps this most famous faultline in the world is well known to all the citizens of the USA, but I doubt if most people outside America know equally much about the subject. I have some more, though minor, remarks about this chapter. Introducing the term “fabric” as a “new structural texture”, or defining joints and referring to a photo that show cracks according to the caption, may be confusing for a reader without geological experience. On the other hand, I must admit that these chapters are written in good, lively language.

Time for life has come then, and the next two chapters focus on stratigraphy and fossils. I like the stratigraphy chapter. In a clever, brief way, it mentions the most important principles and methods. I cannot agree, however, with the fact that Pleistocene and Holocene are combined into “Pleistogene”. This latter term is informal, obsolete, and will not be found on any geological time scale that is commonly used. The problems related to the reconstruction of the evolution of *Homo sapiens* are dealt with in a clever way, while explaining the divisions of the animal kingdom. I like the photos in this part of the book, but the examples of fossils finish with fish; I dearly miss at least one more photo of a reptile or bird fossil. At the end, it is explained why fossils are important in geology. Park mentions not only their importance for (bio) stratigraphy, but also for interpretations of environments (continental vs. marine, deep vs. shallow, warm vs. cold water or climate, etc.), as well as for plate-tectonics reconstructions. I like this part very much.

Earth’s history is summarized briefly, illustrated by figures with moving continents. This chapter should, in my opinion, have been placed immediately after the stratigraphy chapter, but the author had apparently a different conception and put a chapter about economic geology between those just mentioned, without mentioning why he did so. The sandwiching of economic geology between stratigraphy and historical geology is the more unfortunate because economic geology is of direct, great importance for modern society. The chapter shows the reader how many aspects of our life are directly influenced by, or even entirely dependent on, geology. The book is finishes with a comparatively large glossary, which is very useful for the unexperienced reader.

The author does not cite any literature. I believe that he must have carefully considered whether to include references or not, and that he has come to the conclusion that references would not be of much use for the target group. In a few places, however, I would have appreciated to

know the source of his statements. Anyway, the book would have profited from titles of books for further reading. I think that it is highly unfortunate if a reader becomes enchanted by geology, but is not told where he should look for some more information on the subjects that he is most interested in.

Reading and evaluating this small book was a pleasure. As I already mentioned in the beginning, writing such a book is a great challenge, and never can be esteemed high enough. To summarize, I think that this book is worth to be read, and my critical comments actually only regard details. The book seems particularly a good buy for a teenager at secondary school, who is interested in geology, or for a young student who wants to have a short overview of what geology is, and how it can be used in both science and practical life.

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