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Principles of Stratigraphy, by Michael E. Brookfield, 2004. Blackwell Publishing Ltd, 108 Cowley Road, Oxford, OX4 1JF, United Kingdom; x + 340 pages, paperback; £ 29.99. ISBN 1-4051-1164-X.

Michael Brookfield (Guelph University) balances already for some 30 years between stratigraphy and sedimentology. He thus has the ideal background for writing the long-wanted successor book of Krumbein & Sloss's classical work 'Stratigraphy and Sedimentation'. Whatever great books have appeared since the 1963 (2nd) edition of this classic, none has reached the same level with respect to both didactics and providing an almost ideal overview of the (then) state-of-the-art. Unfortunately, Brookfield missed the chance of writing a new classic.

This does not imply that the present book has no quality; on the contrary, it provides a lot of useful information, although I got the impression, while reading the book, that Brookfield - who states that the book is primarily aimed at students - frequently overestimates the capability of students to understand specific specialistic details. The book has a well thought over structure, being subdivided - after an introductory chapter - into 3 sections: (1) Basics (outlining key concepts, with chapters on weathering, sediments and sedimentary rocks, major environmental complexes and their recognition), (2) Tracing Environments in Space and Time (elucidating the principles of stratigraphic analysis, with chapters on the vertical dimension, the horizontal dimension, the time dimension, basin analysis, and stratigraphic systems), and (3) Interpreting Geologic History (providing a wider framework for stratigraphy and sedimentology, with chapters on tectonics, sea-level changes, climate, biology, stratigraphic problem times and places, and extraterrestrial stratigraphy). Appendices are present with (1) imperial/metric conversions (in my opinion a didactical blunder: all scientists should now really apply SI units!), (2) figure legends, and (3) a geologic time scale. The glossary, references and index are useful additions.

What bothers me most about the book is not that there is so much that has little to do with stratigraphy (see the chapters mentioned above), but rather that the principles of stratigraphy get so little attention. There is, for instance, less than half of a page devoted to the concept of formations (and other lithostratigraphic units), and what is mentioned is partly wrong, partly outdated (there is no serious stratigrapher anymore who states that "Formations should, as far as possible, have components that are time equivalents." Walther's law of facies was already known in the 19th century! And a member certainly need not be laterally persistent. The statement that a formation is a unit "which can be shown on a geological map of at least 1:50.000 scale" neglects both old Precambrian rocks of which only small remnants have been preserved, and Quaternary rocks which are commonly grouped in formations of a few metres thick only. The official stratigraphic guide could have helped prevent such erroneous statements.

The above examples are not the only shortcomings that give the impression that the author is insufficiently aware of recent literature. How is it possible, for instance, that the Precambrian/Cambrian boundary is still dated as 570 million years? There are numerous

inaccuracies of this type (also in the glossary), which makes the value for students much lower than necessary.

This is a pity, because the book contains many well chosen examples, though in sedimentology rather than stratigraphy, and the drawings are in general instructive and of good quality. On the other hand, some drawings (e.g. fig. 8.13) are not understandable at all. The photographs are, unfortunately, often of low quality, without sufficient contrast to see the relevant details. The choice of the paper used for the book is probably to be blamed. This could have been compensated by more color photos on special paper than the 4 pages present now; 4 pages with, in my opinion, illustrations that are not the most badly needed ones.

Taken all together, the book is disappointing, in spite of the valuable information that it contains. The author probably tried to reach too wide a readership, with an insufficiently worked out concept with regard to the topics to be dealt with: subaqueous weathering, and the stratigraphy of Venus may be highly interesting (particularly for specialists), but a book dealing with principles of stratigraphy should have another balance: it is not well understandable that, in this book, clastic sediments get less attention than impacts and volcanic products. Students can learn a lot from this book, but unfortunately not about the principles of stratigraphy.

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