

## BOOK REVIEWS

ANDERSON, R. S. & ANDERSON, S. P. 2010. *Geomorphology: The Mechanics and Chemistry of Landscapes*. xvi + 637pp. Cambridge University Press. Price £40.00, US\$75.00 (PB). ISBN 978 0 521 51978 6. doi:10.1017/S0016756810000932

This is a well designed textbook that contains a healthy balance between qualitative and quantitative descriptions of geomorphic processes pitched at a level that suits 3rd/4th year undergraduate students. The prose is authoritative, up to date, and accessible, supported by well-presented and relevant diagrams and illustrations with useful inset boxes to expand upon specific key topics. The authors describe the book design as built around stand-alone chapters to enable course tutors to pick and mix to suit their own course structure. I found this worked well and the feedback from students has, so far, been very positive.

The book is set on a solid foundation with introductory chapters that explain the large-scale processes that couple deep earth with surface topography, including local and regional-scale isostasy, rheology and mantle flow, and includes some topical discussion on dynamic topography. Few geomorphology textbooks adequately set the scene by considering the impacts of these fundamental processes on landscape topography, so it was pleasing to see these addressed from the outset. Chapter 4 considers stress accommodation in the brittle strong lithosphere, whilst Chapter 5 contains a useful synthesis of key aspects of the climate system relevant to geomorphology, focusing on atmospheric circulation and orography. However, I felt the descriptions of absolute dating methods in Chapter 6, which contains an excellent in depth review of cosmogenic nuclide dating, was unbalanced by largely ignoring relative dating methods used in reconnaissance mapping and to inform sampling for absolute dating analyses. Similarly, Chapter 7 on weathering, only touches upon the carbon cycle and the organic carbon cycle is largely ignored. Chapters 8–16 individually explain the processes and associated landforms relating to weathering, glaciers, hillslopes, rivers, eolian transport, and coastal geomorphology.

Concluding chapters are centered on the author's research interests, Chapter 17 on the geomorphology of big floods, and Chapter 18, a case study on the Santa Cruz landscape. Although the subject matter was interesting I felt an anti climax and was left wanting more. Having learned about the different processes I wanted to read about examples of linkage between geomorphic processes and reading landscape change across a wider, more representative range of earth's landscape geomorphology. For example, mountain belts, which have a profound influence on the Earth system, have been largely neglected. This is a minor quibble and, to be fair, to cover the range of whole landscapes in any detail would easily fill another book. The appendices provide a useful adjunct with detail on the physics and key mathematical formulas, rules and functions that are relevant to the book contents. Should students want to expand depth of learning the authors have also produced a free electronic book (*Little Book of Geomorphology*) covering the physics of the geomorphic principles behind this textbook, downloadable from Andersons academic web pages. In summary *Geomorphology: The Mechanics and Chemistry of Landscapes* has the breadth and depth of content that puts

it in a class of its own. I have little doubt that this will soon be the book of choice for geomorphology courses.

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WYSE JACKSON, P. N. 2010. *Introducing Palaeontology. A Guide to Ancient Life*. vii + 152pp. Dunedin Academic Press. Price £9.99, €13.99, US\$16.99 (PB). ISBN 978 1 90671 615 8. doi:10.1017/S0016756810001019

*Introducing Palaeontology* offers a very broad and accessible introduction to the science of palaeontology by covering all the basics of the discipline and introducing all the major fossil groups. The book is divided into two main sections; (1) the science of palaeontology, and (2) a guide to various fossil groups. Part 1 opens with a simple definition of fossils and makes clear from the outset that the book is aimed at those with no, or very little, prior knowledge of the subject area. The first section comes to a close with a very informative 'all you need to know' about the history of palaeontology in four pages. The following chapters go on to describe and define the process of fossilisation and give advice on how to collect, curate and study fossils. The section on 'Code and conduct for fossil collectors' may come across as a little patronising, but gives essential information and guidelines for the novice palaeontologist. The following sections offer excellent summaries on how fossils are named and classified as well as a very informative chapter on the countless uses of fossils. The author does an excellent job of introducing many terms that will be unfamiliar to the newcomer, such as Lagerstätten, biostratigraphy and palaeoecology, and all key terms are highlighted in bold and clearly defined in the glossary at the end of the book. Curiously, there is no mention of any of the Chinese feathered dinosaur faunas (e.g. Jehol biota) in the Lagerstätten section, which would seemingly capture the imagination of the reader more effectively than the many Early Palaeozoic examples used.

The second section of the book deals with introducing the major fossil groups, from the more familiar trilobites, ammonites and vertebrates to less glamorous groups such as foraminiferans, algae and sponges. The author wisely avoids the lengthy descriptions found in more advanced textbooks and keeps the information brief but packed with important information on morphology, stratigraphic ranges, life habits and evolutionary history. The morphological descriptions, however, do use a considerable amount of scientific language (all sufficiently defined in the glossary), and are supplemented by informative, clear and attractive annotated diagrams. Added to this, the many photographs of actual fossil specimens bring vital perspective to the reader.

*Introducing Palaeontology* is an excellent book, full of attractive diagrams and photographs, coupled with short, waffle-free sections. The combination of short, snappy chapters and interesting scientific concepts create a book that is perfect for anyone new to the science of palaeontology, whether they be an enthusiastic amateur, a prospective student or an undergraduate just starting out in the field.

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