

clear observational framework about the actual conditions that support the assemblages found. The book is very clearly laid out, supported by an enormous web-based resource, with tables of all the data presented in the book.

The book starts with brief summaries on methods and biological/ecological aspects. Next, it launches into the discussion of benthic foraminiferal distributions. Here, the text sometimes assumes the character of an encyclopaedia, listing somewhat 'dry' facts and statistics about benthic foraminifera in a range of different environments around the world. However, it is well organized and as a result easy to digest and follow from one section to another. Personally, I would have liked to see maps identifying the many geographic locations that are discussed, but this omission is easily dealt with by evaluating the book next to an atlas, or a web-based geographic resource. Once the reader hits Chapter 7, on the deep sea, the text becomes much more specific on the processes and controls that govern the distribution patterns. It is obvious that it is in the deep sea that the vast majority of such data have been obtained. Here, I find that the text excels in clarity, and that it provides an impressive synthesis of a vast array of studies. Even more than the preceding chapters, the deep-sea chapter delivers a truly essential starter to all who consider a career in benthic foraminiferal ecology or its use in reconstructions of (past) environments.

The final chapters summarize living distributions and the processes behind them, discuss the changes from live to dead and fossil assemblages (essential for down-core studies), and introduce applications of the observations that are brought together in the book in palaeoecological and palaeoceanographic studies. The latter two topics are not at the core of the book, and are mainly presented in the form of brief summaries and examples. Still, they convey the message well, and the reader is left with a positive impression of having been presented with a state-of-the-art introduction and overview in benthic foraminiferal ecology and its applications. This book is written by an acclaimed authority, and it shows.

The copy I had for evaluation was hardbound and very neatly printed. All figures are clear and well laid out, and the scanning electron micrographs are of excellent quality – it's a shame there were not a few more of those throughout the book. Good images can always be found on the web, but there's no substitute to having them within the main text volume. The reference list is as extensive as it could possibly be, and the volume of data that has been brought together from around the world is truly amazing. This is a very good reference volume for people working in the discipline, and a great introduction to those aspiring to do so. Now for a volunteer to integrate all these datasets into a Google-Earth-type framework...

Eelco J. Rohling

HOLMAN, J. A. 2006. *Fossil Salamanders of North America*. xv + 232 pp. Bloomington, Indianapolis: Indiana University Press. Price US \$55.00 (hard covers). ISBN 0 253 34732 7.  
doi:10.1017/S0016756808004743

Indiana University Press is producing an extraordinary variety of texts under their 'Life of the Past' series edited by James O. Farlow. They range between rather naïve, poorly edited books on dinosaurs and scholarly tomes written exclusively by acknowledged experts that have the 'air' of a more traditional monograph. This falls into the latter cat-

egory, and is the third to have been produced by Alan Holman (the first having been *The Fossil Snakes of North America*, the second *The Fossil Frogs and Toads of North America*).

As with the earlier volumes this is an impressively comprehensive survey of a comparatively obscure group of amphibians. Since these are ecologically extremely vulnerable in modern habitats, being able to survey their anatomy, taxonomy, history and distribution in exquisite detail is a valuable resource. In this respect Indiana University Press is to be congratulated in its altruism – this is not going to be a 'best seller' in any sense of that word, since it fits into the category of worthy (but comparatively dull).

Salamanders are biologically wonderful animals (as indeed are their cousins the frogs and toads), living as they do at the water–land interface. They combine fish-like and classical tetrapod adaptations with great facility since they can (and do) prosper in both environments. Early reports dating to the late 18<sup>th</sup> and beginning of the 19<sup>th</sup> centuries confounded the naturalists – in much the same way as the duckbilled platypus did. Were they 'fish' (aquatic)? or were they actually 'saurian' (crawlers on land)? – the combination of gills (some retained externally in the adult) and legs seemed to cut right across conventional wisdom on how to distinguish between the then-understood groups of animals.

Such developmental and anatomical plasticity, and ecological flexibility are part of the wonder of this underestimated group, and this volume that provides an insight into their evolutionary history and diversity is both timely and valuable. This is an excellent addition to the list provided by Indiana University Press. Unfortunately its audience will inevitably be rather limited given the non-prevalence of taxonomically oriented courses taught in biology departments at the present time; this is an indictment of the present state of our educational system.

David Norman

LOWRIE, W. 2007. *Fundamentals of Geophysics*, 2nd ed. x + 381 pp. Cambridge, New York, Melbourne: Cambridge University Press. Price £70.00, US \$140.00 (hard covers), £35.00, US \$70.00 (paperback). ISBN 9780 521 85902 8; 9780 521 67596 3 (pb).  
doi:10.1017/S0016756808004871

Are textbooks in their traditional form still relevant? Increasingly feedback from students reveals that they read fewer texts and spend more time reading online material. Textbooks have to compete for attention from instantly searchable material available on a computer screen anywhere in the world at the click of a mouse. The internet makes not just one point of view or explanation but tens, hundreds or thousands available in an instant. Academic staff have seen the development of the internet but learned the material they teach from textbooks, meanwhile the students they teach have now grown up in the internet age and have little concept of life without it. The staff and the students they teach gather information in different ways. Who is to say which is best?

As the influence of the internet has grown *Fundamentals of Geophysics* has been published and has established itself as one of the most widely used geophysics textbooks. It has recently been revised and published in a second edition. This new edition is similar to the first, with one major change: the contents of the final chapter on Geodynamics from the first edition have been incorporated into chapters one to five of the second edition. In my mind this is an improvement because much of this material now follows in context from the more introductory material in each

chapter. So this edition is now composed of five chapters on: The Earth as a planet; Gravity, the figure of the Earth and geodynamics; Seismology and the internal structure of the Earth; Earth's age, thermal and electrical properties; and Geomagnetism and palaeomagnetism. Each chapter presents the material in a clear and concise manner with good clear illustrations. The figures have also been slightly updated, increasing their clarity, although this was not a problem with the first edition. What I have always found useful about this text, is that although the chapter titles suggest that it is primarily about the large-scale structure and properties of Earth it also contains a really comprehensive introduction to the various geophysical techniques as used in near-surface applications. The mathematical treatment is at an appropriate level for second- and third-level students of geophysics but it can also be read by students with limited mathematical ability.

The edition has also 'moved with the times': it is now available as an e-book, which I have not seen but I presume is a pdf edition that can be read on a computer or palm device, and this development is a clear move to reach out to the internet generation. There are also resources for lecturers for which I registered (it takes about a week to obtain the password necessary to access this material). These include copies of the figures as pdfs, which are excellent high-resolution versions of those in the text, and solutions to the problems at the end of each chapter. The solutions are an excellent addition. They are presented in the same format as the textbook, extensively illustrated and detailed and really add to understanding of the problem and why it was set.

This is an excellent textbook. I have recommended the first edition to geophysics students and to students who take a level 2 planetary science course that I teach to physics students, and I will be recommending this edition in the future. Whether the students will read it remains to be seen but I will be continuing to use it as one of the texts on which the courses I teach are structured.

R. W. England

GASPARINI, Z., SALGADO, L. & CORIA, R. A. (eds) 2007. *Patagonian Mesozoic Reptiles*. xiii + 374 pp. Bloomington: Indiana University Press. Price US \$49.95 (hard covers). ISBN 9780 253 34857 9. doi:10.1017/S0016756808004858

Patagonia! Geographically, this term refers to the vast arid deserts lying between the South Atlantic and the Andes, encompassing most of the Argentinean provinces of Río Negro, Chubut, and Santa Cruz; culturally, this word evokes an exotic world of gauchos and gringos, guanacos, armadillos and killer whales, Tehuelche Indians, mythical living plesiosaurs, Welsh-speaking villages, Darwin, Butch Cassidy, giant ground sloths, and, of course, dinosaurs. Recent years have seen an enormous number of bizarre and wonderful new dinosaur species from this vast wilderness, including contenders for the title of all-time largest herbivore (*Argentinasaurus*, *Puertasaurus*) and predator (*Giganotosaurus*), embryonic sauropods, and some of the closest known relatives of birds (*Buitreraptor*, *Unenlagia*). Moreover, important discoveries of other major reptile groups have included flightless primitive birds and stunning fossils of filter-feeding pterosaurs. The majority of these fossils have come from Cretaceous sequences, although important Jurassic discoveries continue to be made.

The aim of *Patagonian Mesozoic Reptiles* is to provide the first comprehensive scientific overview in the English language of the Mesozoic fossil reptile fauna (including

birds) of Patagonia. The volume is divided into 14 chapters, each written by one or more specialist taxonomists or geologists, and begins with an historical overview of the key people and events in the collection and study of Patagonian fossil reptiles, and an overview of the regional geological framework. Chapters 3–13 form the backbone of the volume: each chapter provides a systematic taxonomic overview of a particular reptile clade, including turtles, lepidosaurs (sphenodontids, lizards and snakes), crocodyliforms, pterosaurs, ornithischian, sauropod and theropod dinosaurs, birds, ichthyosaurs, plesiosaurs, and reptile ichnofossils. Each chapter provides a general introduction to the relevant taxonomic group and a map showing the distribution of localities, followed by a systematic palaeontology section; most, although by no means all, chapters also contain a summary phylogenetic tree displaying interrelationships. Information provided for each taxon includes details of known specimens, localities and stratigraphy, a diagnosis, and general comments on taxonomy, palaeobiology and phylogenetic position. At least one figure is provided for most major taxa. While one or two chapters, notably those on dinosaurs, provide rather perfunctory and superficial reviews, in general the quality of systematic information is excellent and comprehensive. Chapter 14 attempts to provide a summary overview of the Mesozoic faunal succession, and place it in a global context.

One of the persistent problems of the IUP 'Life of the Past' series has been the inconsistent, and often inadequate, reproduction of figures, particularly photographs. This problem is again evident – for instance the photograph of the premaxilla of the ceratosaurian theropod *Genyodectes* (fig. 9.2) is so out of focus that it is completely uninformative, while elsewhere the reproduction of line-drawings is often of low quality (e.g. figs 10.2, 12.1). Personally, I also find the page layout chosen by IUP frustrating: the margins are very wide, taking up nearly 40% of the width of the page, resulting in an unnecessary amount of white space, with text cramped into a narrow column. Finally, typographical errors and editing problems are not infrequent: for example *Buitreraptor* is consistently misspelt as '*Buitreraraptor*'.

Although IUP may attempt to market it as such, this is not a book aimed at a popular audience – the majority of the content is highly technical and not easily accessible to a non-specialist. As such, this volume will be of greatest interest and use to vertebrate palaeontologists and biogeographers working on Mesozoic reptile faunas; extracts will be of use to geologists interested in the geological history of South America.

Richard J. Butler

MCCARTHY, T. & RUBIDGE, B. 2005. *The Story of Earth & Life. A Southern African Perspective on a 4.6-Billion-Year Journey*. 334 pp. Cape Town: Struik Publishers/Johnnic Publishing Group). Price 189.95 Rand (paperback). ISBN 1 77007 148 2. doi:10.1017/S0016756808004706

*The Story of Earth & Life* is a well illustrated and useful introduction to geology from what is subtitled *A Southern African Perspective on a 4.6-Billion-Year Journey*. It is particularly refreshing to read such a Gondwanan view, even if the region's stratigraphic rock record is rather patchy. The lavish use of colour throughout has allowed the several academic authors, from the School of Geosciences in the University of the Witwatersrand, the luxury of reproducing an array of excellent field photos and many other illustrations that greatly enhance the value of this book, especially for students.