BOOK REVIEWS

JACKSON, A. A. 2008. *Bedrock Geology UK South. An explanation of the bedrock geology map of England and Wales. 1:625 000*, 5th ed. 84 pp. + map in folder. Keyworth: British Geological Survey. Price for book and map pack £15.00. ISBN 9780 85272 605 1.

STONE, P. 2008. *Bedrock Geology UK North. An explanation of the bedrock geology map of Scotland, northern England, Isle of Man and Northern Ireland. 1:625 000*, 5th ed. 88 pp. + map in folder. Keyworth: British Geological Survey. Price for book and map pack £15.00. ISBN 9780 85272 605 1.
doi:10.1017/S0016756808005700

In these days of satellite navigation devices, I hope that I am not alone in my need to carry both topographic and geological maps on travels in the UK. Research trips can involve a bundle of each type. For a 'holiday' the bare minimum is a detailed road atlas and the 'ten-mile' geological map. This 1:625 000 scale yields two UK sheets detailed enough to be useful on car and train journeys yet compact enough not to be a burden. My copies of the third edition (1979) are falling apart at the seams due to my reluctance to buy the fourth edition (2001), which was topographically clearer but geologically similar. In the nick of time, a completely redrawn fifth edition has appeared, accompanied by explanatory booklets.

The new edition has been compiled directly from the BGS 1:50 000 digital database. The general map pattern is reassuring familiar, but the user notices a number of significant changes. The number of map units has been increased, allowing more detail to be shown in some previously uninformative areas. The map units now mostly comprise formalized lithostratigraphy – supergroups, groups or formations. The purely numerical scheme for identifying units has been replaced by a more informative period code and intra-period number, such as K1 to K6 for the Cretaceous. There are many more faults represented, in a line width chosen to be clear but not obtrusive. The two sheets now have a significant overlap, helpfully including the North Yorks Moors, the Lake District and the Isle of Man. Most radically perhaps, there are cross sections, each at 2x vertical exaggeration and down to 15 km depth.

The new maps are a big improvement on previous editions, and should be a pleasure to use. The slightly increased folded size is a small cost to pay for the increased coverage and content. The inclusion of more faults explains many previously puzzling deflections in lithological contacts. This feature, and the increased lithostratigraphical detail, makes the maps more useful for teaching in particular. The rationalization by BGS of broad-scale UK stratigraphy is a routine but important contribution to describing UK geology. The cross sections offer stimulating interpretations of relationships at depth; congratulations are due to Graham Leslie for compiling these hostages to fortune.

The two new map sheets represent excellent value at £10 each. They are even better value if bought along with their explanatory booklets at £15 for the pack. These explanations, ably written by Audrey Jackson and Phil Stone, describe most of the named map units and weave them into a brief but reliable geological history of the UK. The text is aimed at the inquisitive non-geologist, but provides a good quick reference for the student or geology professional. The production quality is of the same high standard and style established for recent British Regional Geology guides; colourful but clear.

The fifth edition ten-mile maps are published exactly sixty years after the first edition of the format, now an icon of UK geology. Geologists, libraries and university teaching departments in the UK will want to upgrade from previous editions. Those outside the country can confidently buy both maps and explanations as a modern, accurate and attractive depiction of UK geology.

Nigel Woodcock

FRASER, N. 2007. *Dawn of the Dinosaurs. Life in the Triassic*. Illustrated by Douglas Henderson. xvi + 310 pp. Bloomington, Indianapolis: Indiana University Press. Price US $49.95, £27.00 (hard covers). ISBN 9780 253 34652 0.
doi:10.1017/S0016756808005578

In many ways, the Triassic is the forgotten period of the Mesozoic. Most popular accounts of Earth history refer to it only in passing, as either a transitional interval that witnessed the recovery of the Earth's biota from the ravages of the end-Permian extinctions, or as the time in which that most charismatic of groups, the dinosaurs, first appeared. In addition, there is a widespread perception that most Triassic terrestrial environments were parched deserts that were almost devoid of life, a picture reinforced by artists' renderings of landscapes containing a lone archosaur hunting amongst doleful, barren sand dunes. Nick Fraser's book is a welcome antidote to this situation, providing the most comprehensive account of life, and death, in the Triassic that is currently available to a popular audience.

The book is ambitious in scope, providing concise descriptions of key terrestrial Triassic ecosystems and placing these within macroevolutionary, palaeogeographical and palaeoclimatic contexts. Although there is a strong bias toward discussion of tetrapods (understandable given Fraser's own research interests), there are numerous references to the other organisms that lived alongside them, including the floras, insects, freshwater invertebrates and fish. All of the major Triassic terrestrial biomes are reviewed, giving a truly global overview that demonstrates the true richness of the habitats that developed during this period, taking us from extensive sand seas to lowland forests, lakeshores and coastal plains. The chapters are arranged in chronological order, tracing the emergence of Triassic biomes from the disaster communities found at the inception of the period, the subsequent radiations and originations of the, sometimes bizarre, taxa characteristic of the period, and culminating with descriptions of faunas that included the first representatives of many modern groups (including crocodilians, turtles, lepidosaurs and mammals). This story also echoes changes in global climate and geography and the text concludes with a brief discussion of the factors that may have caused the Late Triassic extinction events. Fraser developed this book in collaboration with Douglas Henderson, an artist known for his superb palaeontological reconstructions, and the text is richly illustrated with evocative and beautiful paintings showcasing the diversity of life in each of the ecosystems featured. Life reconstructions of many of these organisms have not been portrayed before and the artwork will be a major attraction for anyone considering buying this volume.

One possible criticism is that the book provides little in the way of synthesis: although it offers a series of detailed windows onto Triassic environments, it does not trace the underlying evolutionary patterns in depth nor does it offer any novel perspectives on these events. In addition, the most recent references cited in the book date from 2002–3, thereby missing a large amount of new information that became available prior to the 2006 publication date. These issues notwithstanding, the book will be of great interest to undergraduate and postgraduate students, as well as providing a useful summary of information for professional palaeontologists and geologists. The large number of colour illustrations, provision of a comprehensive glossary and appendices that provide introductions to tetrapod anatomy and other specialist topics will also make this volume accessible to a wider, popular audience.

Paul M. Barrett

MORENO, T. & GIBBONS, W. (eds) 2007. *The Geology of Chile*. viii + 414 pp. London, Bath: Geological Society of London. Price £85.00 (hard covers), £35.00 (paperback). ISBN 9781 86239 219 9; 9781 86239 220 5 (pb).
doi:10.1017/S0016756808005608

One of the things that particularly appeals to many geologists, both professional and amateur, is the way that our understanding of the ancient is built upon experiencing the present. Chile is an amazing country that is over 4000 km long and ranges in climate from the Atacama Desert in the north to the temperate rainforests and glaciers of the south. The geology of Chile is dominated by the Andean mountain belt caused by the ongoing subduction of the Pacific plate under the South American continent as part of the Pacific 'ring of fire'. Geology is very much a living science in Chile, with its many active andesitic stratovolcanoes being a draw for tourists and geologists alike (as a petroleum geologist/palaeontologist working just over the border in neighbouring Argentina, my interest in Chile lies somewhere between the two).

The book itself is well put together and nicely compliments the other revamped *The Geology of*... books in the series. It is comprehensive in its scope, covering basement processes, the ubiquitous magmatism and volcanism, economic resources, tectonostratigraphy and neotectonics, as well as aspects of the marine geology, Quaternary geology and early human colonization. One of the ideas that I liked the most in the book is the inclusion of a suggested field excursion chapter – not an easy thing to do in a country as vast as Chile, but the itinerary I think would appeal to a lot of geologists wanting to get a flavour of the large-scale geology of the region.

In short it is a wonderful resource for both the serious researcher looking to get a 'heads up' on current research in Chile, and the geotourist, looking for a text to dip into in order to get some background on the region they are visiting. I have been going to and fro from southern Patagonia for many years and often bemoaned the fact that there was not an easy source of regional geological information. Finally it is here; with the publication of this volume I am much more knowledgeable about the tectonostratigraphic evolution of the area I travel through, the eruption history of the volcanoes, *et cetera*. The authors and editors are to be commended for packing a tremendous amount of information into the chapters in a manner which is highly accessible. I am sure that this book will inspire many geologists to get involved in Chilean geology. I can't wait to go back and look at a lot of things again with my eyes opened.

Duncan McIlroy

BRENCHLEY, P. J. & RAWSON, P. F. (eds) 2006. *The Geology of England and Wales*, 2nd ed. viii + 559 pp. London, Bath: Geological Society of London. Price £85.00, US $153.00 (hard covers), £35.00, US $63.00 (paperback); GSL members' price £42.50, US $77.00 (hard covers), £27.50, US $50.00 (paperback); AAPG/SEPM/GSA/RAS/EFG/PESGB members' price £51.00, US $92.00 (hard covers), £27.50, US $50.00 (paperback). ISBN 9781 86239 199 4 (hc); 9781 86239 200 7 (pb).
doi:10.1017/S0016756808005633

The first edition of *The Geology of England and Wales* was published in 1992 and inevitably the succeeding decade and a half has seen an enormous increase in information and a deepening of our understanding of the geology of this part of Avalonia. The current edition has contributions from 40 authors whose work has been critiqued and refereed by another substantial panel of experts. As a result, we can have a high level of confidence in the overall accuracy of the text and innumerable figures that are so important to a book like this. And then there are the editors, Pat Brenchley and Peter Rawson, who have pulled it all together, with so many contributors – editing such a work is an immense task. Brenchley & Rawson thank their respective spouses for their 'patience, especially when the editing lasted well into our 'retirement''. The whole geological community is lucky that there are still those with sufficient experience and knowledge who are prepared to take on such work from which we all benefit for another decade or more.

Structurally, the bulk of the present edition is arranged chronologically in three sections (Early Palaeozoic, Late Palaeozoic, and Mesozoic to Quaternary), each with chapters on significant intervals of time, from the Neoproterozoic onwards, set against the developing plate tectonic background. For instance the Early Palaeozoic section has three chapters, firstly on the 'Cambrian and Ordovician' and the tectonostratigraphic evolution; secondly on the 'Silurian; the influence of extensional tectonics' and thirdly 'The Lakesman Terrane'.

The complexity and amount of the information in each chapter is so great that they have to be very clearly organized with a considerable use of a hierarchy of headings. For the reader looking for some specific information, the index is a vital tool for direction. Fortunately, the index has been carefully compiled to give as good coverage as possible. Inevitably most references are pre-2005 but I did spot the odd 2006 one. Finally, the illustrations: since they are derived from so many different sources, it is inevitable that they should vary in style, presentation and size so that some could have usefully been larger and others smaller but this does not detract from the overall worth of the book. More importantly, the 40 or so colour images (albeit mostly in a bundle) are a very useful addition, especially as they are well reproduced.

Like its companion volumes *The Geology of Scotland* and *The Geology of Ireland*, *The Geology of England and Wales* is an essential reference work on British geology. Hopefully the Geological Society will continue to encourage the production and publishing of such 'staging posts' in the development of our geological understanding.

Douglas Palmer

References

HOLLAND, C. H. (ed.) 2001. *The Geology of Ireland*. Edinburgh: Dunedin Academic Press, 544 pp.
TREWIN, N. H. (ed.) 2002. *The Geology of Scotland*, 4th ed. London: The Geological Society of London, 550 pp.