

## BOOK REVIEWS

FEDONKIN, M. A., GEHLING, J. G., GREY, K., NARBONNE, G. M. & VICKERS-RICH, P. 2008. *The Rise of Animals. Evolution and Diversification of the Kingdom Animalia*. xvi + 327 pp. Baltimore: The Johns Hopkins University Press. Price £50.00 (hard covers). ISBN 9780 8018 8679 9.

doi:10.1017/S0016756808005645

Whilst there seems to be an open season on the Ediacarans at the moment, *The Rise of Animals* is a volume that many palaeontologists will, I suspect, want to own. Beautifully illustrated with innumerable photos of the fossils, plus and diagrams and maps, it is a pleasure to look at and read.

The first part gives a succinct but well illustrated geological and biological background to the Archaean and Proterozoic. It is part two that forms the bulk of the book, with a tour of the main Neoproterozoic fossiliferous localities from the classic and now well-known sites in Newfoundland, Namibia, Australia and the White Sea to Podolia, Siberia, the Urals and Canadian Cordillera to the ‘also rans’ such as Charnwood, Carmarthen, etc. For any student of the Ediacaran biota this part provides an invaluable introduction to the major sites, each of which has about 30 pages, summarizing and illustrating the present state of knowledge.

Parts three and four, ‘Other Evidence of Animals’ and ‘The Cambrian “Explosion”’, deal with topics such as trace fossils, body plans, etc., and finally there is an ‘Atlas of Precambrian Metazoans’ whose title spells out the biological stance of the authors towards the Ediacarans. However, this Atlas catalogues, describes and illustrates the holotypes of most of the presently known 200 or so Ediacaran species from around the world. This section alone is of enormous value in bringing such otherwise scattered information together.

The quality of the illustrations with full use of colour is superb and the authors have performed a great service in searching out unfamiliar material and bringing all together in this single work.

Douglas Palmer

HOWELLS, M. F. 2008. *Wales. British Regional Geology*. x + 230 pp. + map in folder. Keyworth: British Geological Survey. Price £18.00 (paperback). ISBN 978 08527 2584 9.

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The long-awaited updates of the British Regional Geology guides continue to appear slowly but surely with the publication of the volume on Wales. In a sense, we get two volumes for the price of one here, because previous editions separated the principality into guides on North Wales and South Wales. The Geological Survey has wisely decided that this subdivision along a geologically arbitrary line serves no good purpose. The whole of Wales is therefore covered, but the Welsh Borderland to the east is still reserved for a separate volume. This scheme has the logic that the political boundary of Wales is at least partly influenced by geological factors.

The detailed synthesis of an area of the size and diversity of Wales would now normally be seen as a multi-author task. The new volume is therefore notable for having been written by one person, Malcolm Howells, and after his formal retirement from the Survey at that. There are few other people

who could have completed this task so successfully. For sure, he will have had the advice of specialist colleagues, but Howells’ writing style runs through the whole volume and gives it a pleasing coherence. Ample illustrations enliven the text. Line drawings, mostly in colour, are drafted to a high standard, and a good selection of colour photos gives an excellent taste of the field geology of Wales. A 1:625 000 geological map of Wales accompanies the book.

With the design and presentation of the guide brought up to date, it is nevertheless comforting to find the traditional chapter headings, mostly the geological periods or eons: Precambrian to Cretaceous. These core chapters are flanked by an introduction and a concluding chapter on Geology and Man. I might have added only a chapter on structure, including geophysics, as in the recent guide to the Pennines. The gravity and magnetic data on Wales add significantly to our understanding of its substructure. A structure chapter would also have avoided the anomaly of describing the Acadian deformation in the Silurian chapter, when it properly belongs in the Devonian.

The publicity for the regional guide states that it is ‘aimed at geology students and advanced amateurs as well as professionals who need an overview of the geology of Wales’. The guide is well crafted for this readership, bridging the gap between the popular styles of the new 1:50 000 sheet descriptions and the weighty information in the old memoirs. We look forward to future volumes in the series.

Nigel Woodcock

MAYR, E. 2007. *What Makes Biology Unique? Considerations on the Autonomy of a Scientific Discipline*. First paperback edition; first published 2004. xiv + 232 pp. Cambridge, New York, Melbourne: Cambridge University Press. Price £12.99, US \$16.99 (paperback). ISBN 9780 521 70034 4.

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Ernst Mayr not only lived to a distinguished age, but his years were paralleled by his scientific distinction as one of the last century’s leading evolutionary biologists. One gets the measure of his own self-assessment when we read on p. 172 ‘I am presumably well qualified . . . having discussed the species problem in sixty-four books and scientific papers, published from 1927 to 2000. I also had to make decisions on species status when describing 26 new species and 473 new subspecies of birds. Furthermore I had to make decisions on the rank of species level taxa in twenty-five generic revisions and faunistic reviews. Hence, there should be no doubt about my qualifications’. Quite so, and nobody would wish to deny that Mayr was one of the pivotal figures in the neo-Darwinian synthesis.

Nevertheless, the book is heavy-going, in part because it largely consists of originally separate essays and although some over-riding themes emerge there is also a degree of duplication. In essence Mayr sets out to achieve two things: first to define, defend and cherish the central fact of Darwinian evolution, and second to insist that the subject is effectively autonomous. So far as the former is concerned Mayr provides wide-ranging reviews, but the underlying tone gives me some misgivings because to a considerable extent he engages in claims for priority and authority with the result