

TIDWELL, V. & CARPENTER, K. (eds) 2005. *Thunder-Lizards. The Sauropodomorph Dinosaurs*. xi + 495 pp. Bloomington, Indianapolis: Indiana University Press. Price US \$59.95 (hard covers). ISBN 0 253 34542 1. doi:10.1017/S0016756806002858

For many people, sauropods are ‘archetypal’ dinosaurs: the long necks, massive bodies and preposterously small heads of *Diplodocus* and its kin are instantly recognizable. For most of the twentieth century sauropods were in a palaeontological backwater, with only a handful of specialists working on these behemoths. Most of the published papers were strictly taxonomic in outlook with occasional (usually speculative) nods towards palaeobiology. However, it appears that their time has come at last, as the past 15 years have witnessed a revolution in our understanding of these animals. Many new sauropod genera have been described, from all regions of the world, and the group as a whole has been subjected to rigorous phylogenetic, palaeobiological and palaeobiogeographical analysis. One of the hottest current debates in dinosaur studies revolves around the origin of sauropods, their relationships to the ‘prosauroponds’, and the origins of the various features that make up the sauropod *bauplan*. Nevertheless, no volumes dedicated to sauropods have been produced – that is until now. Books on sauropod dinosaurs have one character-state in common with London buses: you wait ages for one to come along and then two turn up together. In addition to the subject of the present review, another volume – *The Sauropods: Evolution and Paleobiology* – appeared in 2005 (Curry Rogers & Wilson, 2005). Both are dedicated to J. S. (Jack) McIntosh – the doyen of sauropod studies for the past 30 years.

*Thunder-Lizards* consists of 21 chapters, which are divided into four sections: Sauropods Old and New; Sauropods Young and Old; Body Parts: Morphology and Biomechanics; and Global Record of Sauropods. Curiously, no chapter includes any new phylogenetic analyses (indeed, I only noticed four cladograms in the entire volume, all of which had been published previously), an odd omission given the activity in this area over the past decade. Moreover, the volume title promises us information on sauropodomorphs in general, but all of the chapters deal only with sauropods: basal sauropodomorphs and ‘prosauroponds’ are not considered at all.

As is usual in an edited compilation, the contributions vary considerably in terms of their scope and quality. Some papers are essentially reworked versions of previously published analyses with little new data while others are frankly bizarre, with highly questionable conclusions. Almost all of the papers in the volume address fairly narrow topics – aspects of sauropod alpha-level taxonomy, detailed descriptive anatomy, age-related variation, and so on – that are unlikely to appeal to anyone who does not work on sauropods themselves. There are a large number of editorial inconsistencies (mistakes in the references, misspellings, etc.) and the reproduction of many of the photographic figures is awful, rendering some of them almost useless. Nevertheless, a few of the papers are highly original, containing much needed new information, or have

at least been able to provide a slightly broader picture of sauropod biology. Although the volume does provide a lot of information (not all of it new), most of it is rather parochial in nature. In all, I have to admit to being rather disappointed – if reviewing this as a paper for a journal I would have to tick the box marked ‘worthy, but dull’.

Paul M. Barrett

#### Reference

CURRY ROGERS, K. A. & WILSON, J. A. (eds) 2005. *The Sauropods: Evolution and Paleobiology*. Berkeley: University of California Press, 349p.

REED, S. J. B. 2005. *Electron Microprobe Analysis and Scanning Electron Microscopy in Geology*, 2nd ed. xiii + 192 pp. Cambridge, New York, Melbourne: Cambridge University Press. Price £35.00, US \$70.00 (hard covers). ISBN 0 521 84875 X. doi:10.1017/S0016756806002834

This is the second edition of Steven Reed’s popular introductory text on electron microprobe analysis and scanning electron microscopy and is aimed, as the title indicates, at students and researchers in geology. The book is a much less mathematical treatment of the subject than his book *Electron Microprobe Analysis* (also published by CUP in 1993) which is widely acknowledged as the definitive work on the subject. This edition, like the first, describes electron microprobe analysis (EMPA) and scanning electron microscopy (SEM) from a geological point of view and does not assume an in-depth knowledge of mathematics or physics.

The author has made considerable rearrangements and revisions in preparing this new edition and these have reduced the length of the book slightly, although the level of the treatment has not changed. The volume starts with a short introductory chapter that explains in general terms electron microprobe analysis, scanning electron microscopy and some related techniques such as XRF and analytical TEM. The second chapter deals with the specimen–electron interactions and X-ray production and the third with instrumentation. Chapter 4 covers the basics of SEM and includes the addition of a short section on electron-backscatter diffraction images. Chapter 5 covers X-ray spectrometers and detector systems, while Chapter 6 is devoted to elemental mapping. The most major rearrangements and revisions have been to the chapters dealing with qualitative and quantitative analysis. There are now two instead of three chapters on X-ray analysis. The first, Chapter 7, deals with quantitative WDS and EDS analysis methods and matrix corrections. The second chapter on X-ray analysis, Chapter 8, covers special problems associated with particular types of analysis, for example light element analysis. It would have been nice to see a section on age determination by electron microprobe in this chapter as this is one of the most rapidly developing uses of EMPA. Dr Reed is to be congratulated on producing an excellent new edition of this thoroughly readable book. Highly recommended for all those who use the electron microprobe.

Allan Pring