

LONG, J. 2006. *Swimming in Stone. The Amazing Gogo Fossils of the Kimberley*. 320 pp. Fremantle: Fremantle Press. Price A\$ 29.95 (paperback). ISBN 9781 921 06433 3.
doi:10.1017/S0016756808004421

Swimming in Stone is John Long's very readable personal account of his encounter with the remarkable fossil fish of Gogo, along with a history of their discovery and their palaeontological importance. Since 1940, forty or so Devonian fish species have been recovered from nodules found around the remote Go Go Station in the Kimberley region of northwestern Western Australia. The carbonate nodules developed in muddy basinal deposits on the seaward side of the extensive tropical barrier reef of the Canning Basin.

The nodules developed around the rotting remains of many different kinds of fish but especially armoured placoderms and lungfish and form one of the most spectacular fossil finds ever made. The preservation of the fish and their preparation by acetic acid etching of the limestone nodules has revealed beautifully preserved 3D structures, especially the head regions which emerge from the rock looking remarkably intact.

As a result, many of the fish are wonderfully photogenic and have graced the covers of scientific journals both academic and popular and even, according to John Long, the cover of a grunge rock album called 'Roottmann' by Slub, a Melbourne band formed in 1985. Apparently the band saw a picture of the Gogo lungfish *Chirodipterus* on the cover of *New Scientist* as an introduction to an article about the Gogo fish by John Long.

The remarkable history of fossil discoveries at Gogo is well told by Long. Apparently, it was the Russian born German geologist Curt Teichert who first found the Gogo fossils in 1940. In 1937 he took up a post at the University of Western Australia and was mapping in the Kimberley region and recorded 'Coccostean remains in concretions (common)'. But the specimens he collected languished in store until serendipitously, in 1963, they were shown to Harry Toombs of London's Natural History Museum, who was on a fleeting visit as he returned to the UK from a collecting trip in Australia. Toombs recognized that the Gogo fossils were significantly better preserved than anything else he had collected. He got permission to delay his return so he could visit the Gogo site and assess its potential. As a result, half a ton were shipped back to London and Toombs immediately set to work to prepare them, using his development of acid etching technique.

And this is just the beginning of the story with which Long has a considerable personal involvement. The second part of this attractive book deals with the scientific significance of the Gogo fish which Long sets in an historic context with players such as Stensio, Jarvik, Hennig and the London 'gang of four'. Well illustrated with drawings and photos of the fossils, it all makes for good reading and is highly recommended, especially to any young 'wannabe' palaeontologists. The addition of notes, bibliography and index make this a useful reference for further investigation of the wonderful diversity of fish that lived in and around a Devonian tropical barrier reef.

Douglas Palmer

CLARKSON, E. N. K., HARPER, D. A. T., TAYLOR, C. M. & ANDERSON, L. I. (eds) 2007. *Silurian Fossils of the Pentland Hills, Scotland*. Palaeontological Association Field Guides to Fossils no. 11. 218 pp. London: The

Palaeontological Association. Price £15.00 (paperback). ISBN 9781 4051 7715 3; ISSN 0031-0239.
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Because of the disparate sources, the bulk, and indeed the antiquity, of much palaeontological literature, it is difficult for the average geologist or keen amateur to identify fossils found in the field. Thus the carefully edited and well produced Palaeontological Association's Field Guide series is very welcome. The guides range from substantial topics, such as *Fossils of the Chalk* to much more restricted areas, such as this new one, which deals only with the fossils from the small Silurian inliers of the Pentland Hills, which lie within the Midland Valley to the southwest of Edinburgh. Because the area is largely rough moorland, only a few stream sections expose rock and yield fossils, but the latter are abundant in places, relatively undistorted and well preserved as moulds within mudstones, and they have attracted the attention of collectors since the mid nineteenth century. The age range too is very restricted: only the very top of the Llandovery and possibly just the very basal part of the Wenlock are represented in the Pentlands. However, the editors have persuaded eighteen specialists to combine to present brief but authoritative descriptions of the entire fauna, which ranges from algae and sponges through most of the invertebrate groups. Highlights for me are the reviews by Emma Gallagher and David Harper on the brachiopods (18 species), Jan-Ove Ebbestad on the gastropods (9 species), and the eurypterids and other strange arthropods (15 species) by Lyall Anderson, but both the academic standards and the quality of the photographs and other illustrations in this pocket-sized guide book are excellent throughout. A book which is reasonably priced and well worth buying if you are going to the area: it would be a real challenge to find all of the biota described in it!

Robin Cocks

ANDERSON, D. E., GOUDIE, A. S. & PARKER, A. G. 2007. *Global Environments through the Quaternary. Exploring Environmental Change*. xiii + 359 pp. Oxford, New York: Oxford University Press. Price £25.99 (paperback). ISBN 9780 19 874226 5.
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This book provides an interesting outlook on Quaternary environmental change and is accompanied by excellent photographs and illustrations. The book comprises nine chapters. The first, Chapter 1, outlines a framework for understanding environmental change. It provides an eloquent review of the history of ideas in Quaternary Science and also provides an excellent introduction to some of the key philosophical concepts in reconstructing and interpreting past environments. Chapter 2 reviews the sources of evidence for reconstructing past environments. Attention to detail in this chapter is lacking and it only provides a basic overview of the different methods of environmental reconstruction. Nevertheless, this is not the focus of the book and readers wishing to learn about the range of techniques available for palaeoenvironmental reconstruction are better served elsewhere. The same is true for dating techniques as this is covered only fleetingly in this chapter.

Global Environments through the Quaternary is not a techniques book: chapters 3 to 8 are its strengths in that they provide an excellent account of environmental change recorded around the world. Chapter 3 provides an account