

of outcrop, core, well log and seismic data in this context are covered comprehensively and clearly in the early chapters and there is a short, but very useful, section describing a workflow for sequence stratigraphic analysis. The treatment of up-dip, coastal sedimentation and stratigraphy is exemplary in its clarity and depth of coverage. This is the depositional sector where many of the principles of sequence stratigraphy were established and besides being important in its own right this sector it is also crucial in terms of potential sediment supply farther down-dip.

The text covering deeper water settings discusses shelf-edge deltas in the context of sediment delivery to deep water settings, but the nature of slopes, specifically topographically complex slopes influenced by salt- and/or mud-deformation, receive scant attention which is unfortunate in view of the importance of the slope in current hydrocarbon exploration. The text also deviates from its pragmatic emphasis and becomes rather idealized and model-driven in this section. The account of deep water sequences is organized around an idealized sequence. Condensed sections are naturally used to define the sequence, but their lithology and sub-surface expression, briefly discussed in Chapter 4, are under-reported here. The account of deep water depositional elements returns the reader to the pragmatic theme of the book and is well illustrated by seismic cross-section and map views of the elements. The application of sequence stratigraphy to carbonate settings is discussed largely with respect to shelf type platforms. This approach highlights essential differences in the response of carbonate and siliciclastic settings to base level changes that stem largely from contrasts in sediment supply (in situ production versus external delivery) and bathymetry.

This book covers basic principles yet manages to reach a research level in a commendably concise manner. The focus on pragmatism is key to this text surpassing all of its rivals as a comprehensive and advanced introduction to the subject of sequence stratigraphy. It deserves to be used selectively as an entry level to the subject, and comprehensively by those in academic, industrial and survey settings who aim to unravel the stratigraphic record and predict facies distributions.

Trevor Elliott

MÄRSS, T. WILSON, M. V. H. & THORSTEINSSON, R. 2006. *Silurian and Lower Devonian thelodonts and putative chondrichthyans from the Canadian Arctic Archipelago*. Special Papers in Palaeontology no. 75. 144 pp. London: The Palaeontological Association. Price £54.00 (paperback). ISBN 0 901702 99 4; ISSN 0038-6804. doi:10.1017/S0016756807003615

As one of the reviewers of the original manuscript I early declared my interest in this work, and indirectly I also had the opportunity to guide and support the progress of getting it published. Therefore, it comes rather naturally to say that I am pleased to see this work published after all the effort I know was put into it, not forgetting the great scientific value it provides.

Thelodonts, which are the main focus of this work, are an ensemble of fossil jawless vertebrates distinguished from other jawless vertebrates by the organization of their exoskeleton which is entirely made up by minute scales that resemble the placoid scales of sharks. Most studies on thelodonts have been based on isolated scales only, but

more recent studies on articulated thelodonts have shown that simple scale taxonomy can be misleading because of the wide range of scale morphologies that can occur in the same individual. Some scientists, including the authors of this monograph, have instead used articulated specimens to establish a more stable taxonomic approach, and have provided a model for how a set of scales in a 'microvertebrate' assemblage can be used to recognize taxa that better represent a species. This approach, obviously, gives a more accurate account for taxonomic diversity. However, articulated specimens are rare and the difficulties in understanding the fossil record have hampered accurate estimations of general diversity and potential radiation events, despite the fact that isolated scales of thelodonts for a long time have been regarded as very useful tools in biostratigraphy.

The present monograph, which is primarily a taxonomic study, provides a large amount of new data based on material yielding 39 thelodont species from the Canadian Arctic Archipelago, of which 12 are based on articulated material. Using this new information, Märss and her co-authors have been able to revise thelodont systematics and minimized many of the taxonomic problems that have followed this research for some years.

The accumulated knowledge from previous work in general and this work in particular shows that both taxonomic and morphological diversity of thelodonts is much greater than previously believed. This new information can and will be used both in a phylogenetic context and greatly to improve biostratigraphical resolution.

Beside its systematic value, this well illustrated volume clearly demonstrates, using the articulated material, the morphological variability of scales in one individual and how that can be used for 'microvertebrate' assemblages. In this context, this monograph is also of educational value and interest for a broader readership of geologist, palaeobiologists and students, and not only the more obvious readers such as specialists on early fishes and biostratigraphy. It is however likely that the price of this volume (£54.00 paperback) will prevent the general category of readers from exploring this book for educational purposes, but for us specialists this is a much valued contribution.

Henning Blom

KNIGHT, P. G. (ed.) 2006. *Glacier Science and Environmental Change*. xiv + 527 pp. Oxford: Blackwell Publishing. Price £125.00 (hard covers). ISBN 1 4051 0018 4. doi:10.1017/S0016756807003639

In the last decade the burgeoning field of glaciology has seen the publication of several textbooks that demonstrate the subject's interdisciplinary nature, and its increasing importance in the context of understanding global environmental change. Hence, practitioners frequently need updates and syntheses of key topics within the field. Therefore, the glaciological community will find *Glacier Science and Environmental Change* especially welcome.

The book is divided into five parts, each with a keynote introduction by a leading specialist, followed by topical reviews and case studies, together totalling no less than 92 contributions. The major themes are: glaciers and their coupling with hydraulic and sedimentary processes; glaciers, oceans, atmosphere and climate; changing glaciers and