

separate chapters dealing with different relevant field-sites, time periods or glacial processes. While this structure is a little unconventional, it works for the interested reader because the themes have been chosen carefully and the index is comprehensive, allowing references to field sites or landscape features to be found rapidly. That said, it is not the simplest format for a student or field-trip leader to navigate quickly.

Glacial Geology and Geomorphology: The Landscapes of Ireland is not a textbook considering glacial geology and geomorphology, and nor is it a field guide considering the landscapes of Ireland: it is an authoritative integration of the two. The book is produced to a very high standard, evidenced by good-quality paper and printing (including many, high-quality colour photographs and diagrams). The text is written to an expert standard, is richly illustrated, and always interesting. If one is seeking a comprehensive, research-level summary of the ways in which advancing and receding ice masses have contributed to the current surface geology of Ireland then this is now their essential text.

Bryn Hybbard

JOLLEY, S. J., BARR, D., WALSH, J. J. & KNIPE, R. J. (eds) 2007. *Structurally Complex Reservoirs*. Geological Society Special Publication no. 292. vii + 488 pp. London, Bath: Geological Society of London. Price £85.00, US \$170.00; GSL members' price £42.50, US \$85.00; AAPG/SEPM/GSA/RAS/EFG/PESGB members' price £51.00, US \$102.00 (hard covers). ISBN 9781 86239 241 0. doi:10.1017/S0016756809006141

The ultimate aim of modelling a hydrocarbon reservoir is to predict rates and volumes to maximize economic recovery. The basis of this must be a 3D representation of storage/transmissivity as governed by sedimentary architecture/facies and the baffles/conduits induced by faults/fractures which compartmentalize this volume. Where the reservoir is structurally complex the upscaling of reservoir properties to allow geologically realistic and computationally tractable simulations of flow behaviour is particularly difficult, even with current processing power. The business need to tackle this problem is driving major growth in research and was the rationale for a Burlington House conference in early 2006. This book, produced in commendably short time, is the result. It is aimed at the interface between structural geology and reservoir engineering, an objective which arguably might have been more explicit in the title, and manages to combine practical realities of industrial experience with cutting-edge academic research in a very well balanced fashion.

Content comprises 25 papers, the first of which doubles as a comprehensive editorial introduction. The mapping of complex structures *per se* is not treated, it being sensibly assumed that the basis of all realistic modelling should be a robust interpretation of 3D seismic to the limits of resolution. Hence the focus is on the modelling of what may or must plausibly exist below this resolution, and a paper on the challenges and opportunities of landslide reservoirs uses modern analogues to address this problem. Sub-seismic fracture prediction is approached from both geomechanical stress modelling and seismic anisotropy, the latter with discussion of the potential to invert damage parameters from seismic anisotropy and including a paper of major importance on the work flow for quantification of anisotropy in terms of that induced by fracturing and that inherent to the sediment fabric. The thorny topic of fracture prediction

by the use of bed curvature receives an elegant critical testing.

Many papers tackle various aspects of fault seal evaluation, notable among which is a use of percolation theory in the analysis of connectivity in faulted turbidites and a fine case study from the West Sole gas fields. The computational problems of managing, and updating, complex volumes receive limited attention, but seven papers deal with flow simulation and production history matching. They include fascinating statistical demonstration of the correlation of far-field pressure responses to depletion/injection which suggests the stress state in some reservoirs to lie on the verge of failure – if so with important implications for directionality of flow in response to dynamically induced changes in poroperm. Also evident is renewed focus on the multi-phase flow properties of faults, a topic conceptually simple but computationally complex.

The book has a full index and makes generous use of colour illustrations. It can be strongly recommended to industry professionals for whom it is splendid value, particularly at the discounted prices. Moreover several papers including the editorial introduction, the treatment of faults in production simulation models and the modelling of fractured reservoirs will be valuable supplementary reading for course work in petroleum geology.

David James

PELLANT, C. & PELLANT, H. 2007. *Fossils. A Photographic Field Guide*. 144 pp. London, Cape Town, Sydney, Auckland: New Holland Publishers. Price £14.99 (hard covers). ISBN 9781 84537 336 8. doi:10.1017/S0016756809006153

Including over 200 photographs that represent all of the major groups of macrofossils, *Fossils: A Photographic Field Guide* is an attractive little volume. Including sections on fossil plants, corals and sponges, echinoderms, brachiopods, arthropods and graptolites (included in the same section for some reason), molluscs, vertebrates, and trace fossils, the book looks at individual genera, depicting them in crisp, attractive photographs. Introductory sections discuss the general anatomy and mode of life of the groups, and simple diagrams depict the key anatomical components. Brief descriptions accompany the photos and provide information on size, occurrence and mode of life. Some of the pieces of text accompanying the vertebrates are rather long compared to those that exist on the other fossils.

Fossils: A Photographic Field Guide cannot really pretend to be as indispensable as a field guide as it is simply not comprehensive enough, but it would at least allow a novice to narrow down the identification of any given fossil to a major group. Designed for general readers, it will appeal to anyone interested in geological history or fossil collecting and could prove to be a useful introduction for undergraduate students or for anyone looking for a basic guide to the diversity and wonder of fossilized life.

Darren Naish

SPEAK, P. 2008. *Deb. Geographer, Scientist, Antarctic Explorer. A Biography of Frank Debenham*. xiv + 128 pp. Cambridge: Polar Publishing. Price £12.99 (paperback). ISBN 9780 9548003 1 4. doi:10.1017/S0016756809006177

Frank Debenham was an Australian-born geologist and geographer, whose career ranged from participation in Scott's