

## *Geological History of Britain and Ireland*

*edited by* N. Woodcock and R. Strachan, 2000; Blackwell Science Ltd., Commerce Place, 350 Main Street, Malden, MA 02148-5018; 423 pages, softbound; £ 29.50, \$39.95; ISBN 0-632-03656-7.

Britain could fairly be called the type area of world geology. Consider the evidence. Of the 11 periods of Phanerozoic time, six take their names from places or territories; four of the six are in Britain (and one of the others was named by a Briton). Two periods are named for characteristic rocks; both characteristics are particularly well developed in the rock record of Britain. The remaining three periods are also represented in British stratigraphy, as is most of the Precambrian. This stratigraphic richness is complemented by 150 years of detailed research and mapping, which mean that many lithostratigraphic boundaries can be fixed to within a few metres geographically and known in time to the biozone level. Most accessible units have been logged and depositional environments interpreted (many more than once); the petrography of most major units has been studied, described and published. Britain and Ireland lie at the crossroads of two of the most important Phanerozoic orogenic belts, on the outer fringes of a third, and between one of the most economically important failed rifts in the world and the biggest oceanic rift in the world. The structural evolution of these islands has been mapped in astounding detail, from D1 sheath folds in the Scourian to gentle flexures affecting the Santonian. There are abundant radiometric dates spanning the Archaean to the Holocene. Much of the offshore has been surveyed, with seabed maps published and an unparalleled set of public domain core and log data. Geomorphological and soil mapping covers most of the land areas. Above all, some of the defining moments of world science have taken place on the rocks of Britain, with Hutton's recognition of the post-Caledonian unconformity perhaps marking the start of the modern age.

Given this background, a number of questions arise. Has anything new come out of the geology of Britain and Ireland in the twenty years since Roger Anderton and his co-authors published their masterly *Dynamic stratigraphy of the British Isles*? Do we need a new text book on this topic? Is this it? Yes. Yes. Yes.

The bias in research funding towards process-based studies and the increased pressure on teaching time in undergraduate courses means that the description and interpretation of regional geology and the coherent presentation of geological history are dying arts. The publishers have been fortunate in securing the services of two of the best remaining practitioners of this art to edit this book. Both Nigel Woodcock and Rob Strachan have impressive publication records on the structure and tectonics of the Caledonides of the British Isles. This commonality of interest gives the book a Palaeozoic bias, since they are much more than editors (one or both is author or co-author on 14 of the 21 chapters in the book). This is not necessarily a bad thing, and will remind a generation of students, raised on the sequence stratigraphy of the last 100 Ma, of the pleasures of the trilobite-haunted seas of the Ordovician. My old professor, the late, great T.N. George, thought that the study of Early Palaeozoic stratigraphy was one of the pinnacles of western thought; excessive interest in the Mesozoic, if not exactly on a par with child molesting, was certainly a cause for concern.

The book is organised into six parts. The introduction sets out why we study historical geology and reviews the techniques for deducing sequences of events; there is then a chapter outlining the geological framework of Britain and Ireland. The next three parts describe respectively: the geological history of the northern margin of Iapetus, the southern margin of Iapetus, and the orogenic and post-orogenic effects that stitched the two halves of the British Isles together. This section of the book could stand alone as one of the best reviews of the British Caledonides that is currently available; if the rest of stratigraphic column were given the same level of detail, the book would probably run to an extra hundred pages.

Part five deals with events up to and including the Variscan orogeny. In the sixth and final part of the book we are given the history of Britain and Ireland while in the middle of the Pangaea and the precursors to opening of the North Atlantic. The section on the Tertiary is written by Roger Anderton, who was the senior author of Dynamic stratigraphy of the British Isles, precursor to this book. This chapter is excellent, but if Anderton had been given as much space as the Palaeozoic sections, he could have told us much more about the events that shaped the modern world. The last chapter deals with the Quaternary; I agree that this needs a chapter to itself, as it is the period of geological

time which has moulded the landscape of Britain. However, it sits uneasily in a section entitled "Post-Variscan intraplate setting".

The book is very well written, with an even style, despite the large number of contributors. The diagrams are all clear and well drawn, and have a very consistent style, which suggests a single drafter. This gives the whole book a pleasant coherence. One small complaint: it would have been very nice to have had more photographs, but these are restricted to the introductory page of each part.

The best aspect of the book is the way the authors have managed to convey the excitement of the ongoing research on the geology of Britain and Ireland, despite the wealth of previous research that I alluded to earlier. For instance, they sketch out the bones of the Southern uplands controversy in three deft pages, giving the reader pointers to the vital facts in the debate. They are even-handed without sitting on the fence, making it clear where their own sympathies lie, while not closing the door on further arguments.

This is an excellent book, with few vices and many virtues. It could form the basis of an excellent course in historical geology, and is outstanding value for impoverished undergraduates. If you are un-impoverished, buy it anyway and see what I meant about Britain and Ireland as a candidate type area for world geology.

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