

## BOOK REVIEWS

CLARKSON, E. & UPTON, B. 2006. *Edinburgh Rock. The Geology of Lothian*. xvi + 239 pp. Edinburgh: Dunedin Academic Press. Price £17.95 (hard covers). ISBN 1 903765 39 0.  
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The late 18th century ‘Edinburgh Enlightenment’ was a remarkable period of intellectual development in many fields of science, but it was the progress in geological understanding, initiated by James Hutton and colleagues, that justifies the city’s claim to be the birthplace of the modern discipline. It is tempting to think that the particular interest in geology was fostered by the setting in which enlightenment occurred, the stone-built, older parts of Edinburgh nestling beneath a spectacular, rugged backdrop.

In *Edinburgh Rock* due homage is paid to the city’s geological heritage, but the authors extend their brief across its Lothian hinterland to present a broader picture. Thus the archetypal Edinburgh rocks – the volcanic masses of Castle Rock and Arthur’s Seat, the latter spectacularly cross-cut by the Salisbury Crags sill – are integrated with other well-known localities such as Hutton’s Unconformity on the East Lothian coast and the renowned fossil localities of West Lothian. In the process the reader is taken through 450 million years of Earth history, from the Ordovician strata of the Southern Uplands to the glacial deposits of the Quaternary ice age.

Euan Clarkson and Brian Upton are well placed to tell the story. Both are eminent Edinburgh academics but with a long history of support for local amateur societies and initiatives for the popularization of geology. If any proof were needed of their long association with the city it comes late on in the book, when building stone is under discussion in Chapter 18. The huge, stone-built landmark at the eastern end of Princes Street, Edinburgh’s major thoroughfare, is described as the North British Hotel. The reader would now search in vain for such a place since it was re-branded as the Balmoral Hotel in about 1990. Only we mature citizens have fond memories of the old NB.

Throughout the book the chapters are short, well ordered, and liberally illustrated in colour. The first two chapters set the scene whilst the third introduces something of the palaeontology. Thereafter the reader is led through the Lower Palaeozoic complexities of the Southern Uplands and the Pentland Hills (the account of the latter, in Chapter 5, is particularly good) and on into the Devonian: the Old Red Sandstone and the earliest part of Edinburgh’s volcanic past. There is no over-simplification and the necessary introduction of structural, petrological and palaeontological background is skillfully handled so that the narrative flow is not interrupted. A rare scientific lapse appears early on, towards the end of Chapter 2, where deformation in the Southern Uplands is related to late Silurian continental collision between Avalonia and Laurentia. This may be a readily appreciated and dramatic concept, but in this instance the association is unfortunately wrong.

Most of Edinburgh’s geology is Carboniferous, and the middle section of the book deals with it in eight chapters, some with whimsical headings – ‘A sub-tropical Edinburgh of lagoons and volcanoes’, ‘Edinburgh’s Carboniferous lake district’. Any account of Carboniferous geology is at risk of

collapsing under the burden of nomenclature but the authors maintain their adroit balance of fact and interpretation and the momentum of the story is maintained. Nevertheless, the complexity of the Carboniferous rocks highlights the difficulty of providing enough geographical information to make sense of the geological distribution, without baffling the reader lacking local knowledge. In this respect some of the figures could have been more informative. An example would be Figure 10.1 that illustrates the Arthur’s Seat volcanic complex. This is really the heart of the matter, but the figure is rather small, lacks quite a few place names mentioned in the text and could well have covered a slightly larger area. The serious reader will simply have to equip themselves with appropriate maps. Carboniferous highlights for me were the beautifully illustrated accounts of the remarkable ‘conodont-animal’ and associated fauna from Granton, and the amphibian fossils (*Westlothiana lizziae* and friends) from East Kirkton. The fascinating historical asides interwoven with the narrative were another source of great enjoyment.

Chapter 16 covers ‘The missing years’, the 300 million or so from the early Permian to the late Pleistocene for which there is no local record. However, the authors do not have to cast too far to find relevant evidence and an entertaining, if necessarily speculative, account results. Quite apart from completing the story it allows links with continuing plate movements and such well-known phenomena as mass extinctions – asteroid impacts, demise of the dinosaurs – and leads up to the final phase of Edinburgh’s geological history, the Quaternary glaciation. Here, in Chapter 17, are described the processes and deposits that have largely shaped the modern landscape. There is perforce a welter of geographical information and as a result this is one of the hardest sections to navigate. There are few sketch maps to assist and one of these, Figure 17.1, proves a little bewildering in that it confuses depth of bedrock (i.e. relative to sea level) with depth to bedrock, which is not quite the same thing. There also seems to be a little more repetition and internal contradiction in this chapter than is seen elsewhere – was Corstorphine Loch *finally* drained in 1766, 1837, or ‘within recent times’? All three alternatives are offered on pages 218–219.

In truth, quibbles about the draining of a loch are only likely to arise from pedantic reviewers. For such a person there is a fair number of opportunities, with a scattering of ‘typos’, a couple of scrambled lines and one or two misdirected figure references. A personal *bête noir* appears regularly with the seemingly random alternation of Southern Upland Fault (correct) and Southern Uplands Fault (wrong). Such trivia will not bother most readers, nor should it, for this is an excellent book; it is authoritative yet entertaining and a thoroughly good read. Those familiar with Edinburgh will see the city and its environs in a new light and, perhaps for the first time, appreciate some of the connections between different aspects of our geology. Those unfamiliar with Edinburgh should not assume from the title that this is just another parochial guidebook. Rather, the authors have taken their description of Edinburgh Rock as a starting point and created a text that is somehow more than the sum of the parts. Just one word of caution: if you don’t know Fairmilehead from Burdiehouse then bring your own map.

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