



Journal of Sedimentary Research

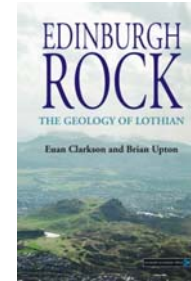
An International Journal of SEPM

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Review accepted 8 August 2006

Edinburgh Rock—The Geology of Lothian, by Euan Clarkson & Brian Upton, 2006. Dunedin Academic Press, Hudson House, 8 Albany Street, Edinburgh, EH1 3QB Great Britain. Hardback, 239 pages. Price GBP 16.95; USD 35.00; EUR 27.00. ISBN 1 903765 39 0.



Deep time; think of those really amazing, fundamental changes to the world of geological ideas: continental drift, the theory of evolution, uniformitarianism. The greatest, and most fundamental change was the concept of “deep time,” an Edinburgh idea, a contribution from James Hutton: geological processes are to be measured in millions, rather than a mere few thousand years. Deep time—a resonant term, echoing out of the world of Edinburgh geology for two hundred years.

The compass of this book is the area south of the Firth of Forth, defined by the Bathgate Hills in the west, by the northernmost part of the Southern Uplands to the south, and to the east by Siccar Point, south of Dunbar. If geologists were given to going on pilgrimages, surely Siccar Point would be the place to go, the place where Deep Time was revealed.

This is a beautiful book; the publishers are to be congratulated, good quality paper, superb print quality, excellent illustrations; the colour and design of the maps is brilliant; Polskabook did a fine job of printing and binding. You hold this book and feel a sense of bibliographical well-being. But who is it for? Someone who knows something of geology and is going to Edinburgh; someone who lives in Edinburgh and would like a clear and insightful view of the local geology; someone who reads the articles in *American Scientist* with interest and understanding; a student of geology in Scotland or northern England; anybody anywhere who wishes to feel a contact with a golden age of geology and have a vision of Agassiz throwing his hat in the air, or Hutton opening the door to time.

And, still on the topic of time, Arthur Holmes was Professor of Geology at the University of Edinburgh from 1943 to 1956, during which time he published the “Principles of Physical Geology.” Holmes pioneered the idea of absolute dating of rocks. Hutton gave us a glimpse of vast, but relative time, but Holmes pointed the way to a measure of real elapsed time - the millions of years could be enumerated.

The rock succession exposed in the Edinburgh region belongs to the Ordovician, Silurian, Devonian and Carboniferous systems, having a time span from about 460 to 300 million years ago. On top of these are the Pleistocene glacial sediments. There is a gap in the record, and a chapter is included to discuss the “missing years.” As the Carboniferous ended, an episode of folding produced the synclines and anticlines of the Midland Valley, accompanied by the last major movements along the Southern Uplands Fault. At this point the rock record is lost. There are, in the Edinburgh district, no strata above the Late Carboniferous, until the deposits of the Pleistocene are reached.

When Louis Agassiz came to Scotland in 1840, Charles Maclaren showed him grooves and scratches on a rock face close to the Braid Burn on the southern outskirts of Edinburgh. Agassiz (they say) threw his hat in the air exclaiming “This is the work of ice!” This appears to have been the first such recognition in Scotland and a plaque now marks the spot. Edinburgh played its part

in the development of Pleistocene geology. In the Pleistocene chapter, the authors acknowledge their debt to Brian Sissons, who was Professor of Geography at Edinburgh University. He was certainly the doyen of Pleistocene students of the Edinburgh area. He had some interest in drumlins, and indeed one of his Ph.D. students, John Menzies, went on to be a great authority on drumlins. Charlesworth, in his great Quaternary compendium, mentions drumlins in the Midland Valley. The Midland Valley is much discussed in this book, but there appears to be no mention of drumlins. Drumlins are such a fascinating aspect of Pleistocene geology that it is surprising that there is no mention of them.

This reveals another small problem; there is no index. Well, there is an index, in fact two, but they are of places and people. There is no subject index, no index of phenomena, no way to look up “drumlins” or the “Old Red Sandstone.” This suggests that the book is a guide book rather than a text book, which is obviously how the authors and publishers see it. But it does have pedagogical value—which would be much enhanced by a subject index.

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