REVIEWS

Castleton Caves by Trevor Ford, 2008. Landmark Publishing: Ashbourne. 128 pages, 64 photos, 47 maps, 978-1-84306-406-0, £9.99.

Across all the splendid limestone landscapes of the "White Peak", there is a remarkable shortage of open or known caves. But the small area between Rushup Edge and Castleton provides the redeeming exception, as these limestone hills are riddled with long, large, deep and truly spectacular caves. And few people can know these caves better than the author of this rather fine book. Its pages contain descriptions of all the caves, along with a plethora of maps and surveys, significant sections on the geology and geomorphology, and a 32-page section of very fine colour photographs mainly by Paul Deakin.

The book is aimed at both the active caver and also the interested surface dweller who may venture into the show caves and want to know more about what really exists inside Castleton's limestone hills. With such a double target, the book could fall between the two stools, but it successfully avoids doing that because it is packed with so much interesting material. So that's good. But the reader does have to work at his study. With too little correlation between the text and the numerous maps, with many localities referred to in the text but not appearing on maps, and with a lack of sub-headings, the reader may find it hard to follow his thread. Perhaps the author knew the caves too well to really look after the slightly lost reader. Problems arise because many of the maps are historical items, which pre-date further explorations and are therefore incomplete. Careful captions could have avoided this issue and made more of the historical story. Peak Cavern starts on page 15, but the first complete map is on page 28.

Despite these problems, the book is welcome. The large chunk of it describing the Peak and Speedwell caves is enthralling reading. Few can unfold the story better than Trevor; he was after all at the sharp end of some of the explorations in Speedwell (many years ago now), and he has the mining knowledge to link it all to the miners who were into so many of the passages before the cavers. Then his chapter (with welcome sub-headings) on the evolution of the caves, before and through the Pleistocene, will give any geologist or geomorphologist food for thought.

For the non-caving member of the Society and for many others, this book will bring to attention a whole new world of geology and geomorphology that exists, has evolved and is studied within the ground. At the symbolic penny less than £10, the book is very good value. It has to be a winner for anyone who enjoys the natural world of the Peak District.

Tony Waltham

Lithostratigraphical framework for Carboniferous successions of Great Britain (Onshore) by C N Waters, M A E Browne, M T Dean and J H Powell, 2007. British Geological Survey Research Report RR/07/01. 60 pages, 9 large figures, 14 tables, 9780-85272-603-7, from http://www.bgs.ac.uk/downloads/home.html as a free download.

The British Carboniferous has long been of great economic importance and intense academic research interest, and this important work of reference is a timely summary of how the rock sequences are subdivided and related to each other. Correlation of the various lithological units across multiple sedimentary basins and contrasting palaeo-environments has been the major task over a number of years of a number of Stratigraphic Framework Committees at BGS, and this is their Report.

After briefly describing the tectonic setting, palaeogeography and principle lithofacies of the rock succession, the text sets out the way by which it is divided into Groups, Formations and Members. There then follows the main meat of the Report, which is a description of all twenty six Groups that have been accepted as meaningful and useful subdivisions by the Committee. Reference to the appendices shows that these Groups are made up of no less than 187 Formations, many of which are also briefly described in the running text. No doubt there will be a few geologists who will be upset when they discover that the name of their favourite Group or Formation has been rejected in favour of another name, but this process of rationalisation is a necessary aid to clarity in the reviewer's opinion.

As is usually the case, a disadvantage of the 'report', as opposed the 'book', form is that there is no index – something that would have been very useful in a work of reference such as this. To some extent, this is made up for by providing separate chapters for each of five regions and then providing a separate description for each and every Group within those regions. Helpful text figures show stratigraphic columns for various parts of each region together with the main lithofacies (in colour) and chronostratigraphy. Thus, for example, it can be seen in Figure 6 that the Urswick Limestone Formation is part of the Great Scar Limestone Group of Asbian age in the Visean and is of platform/ramp carbonate facies.

This document is never going to be bedtime reading, but it is a very important piece of work that must be referred to by anyone working in or just interested in the Carboniferous rocks of our home area; and providing it as a free download is a refreshing approach by BGS towards the dissemination of valuable information.

Neil Aitkenhead

Granite and Grit: a Walker`s Guide to the Geology of British Mountains by Ronald Turnbull, 2009. Francis Lincoln: London. 208 pages, 250 figures, 978-0-7112-2914-3, £20.

Brenda and I have a fatal disease - we just cannot walk past a bookshop. Our latest acquisition is *Granite and Grit*, which despite its name has a splendid photograph of a limestone pavement at Scales Moor below Ingleborough on the jacket.

Ronald Turnbull is a geographer, climber and hill walker. He has written an account of the geology that underlies British mountains, mainly those over 600 m. It has been written as an introduction to geology for those with some knowledge of the subject, but who have been stimulated by days on the hills and wish to know more about the rocks.

A brief introduction to the tectonics of Britain through the ages, and the role of glaciation in shaping mountain landscapes, is followed by accounts of each mountain group roughly in a north-south sequence. Mr Turnbull`s style is clear and simple, but not simplistic. Basic geological concepts are explained with lucid diagrams that will greatly help beginners. Descriptions of the mountains are supported by the many colour photographs, and these are the great attraction of the book. Most are excellent and evocative of days out on the hills (but why did he use such a cramped picture of Buchaille Etive Mor instead of the classic view from Kingshouse?). However, with this attraction there has to be a "health warning" for the beginner, because the author is not a professional geologist and there are some gaffes in the text. To name but three: he places the Millstone Grit above the Coal Measures (p21); he cites the origin of the Great Whin Sill as "the area about Arthurs Seat" (p142) and he asserts that quartz veining in rocks is due to molten quartz boiling out of magma, as "often as not from subjacent granite" (p54).

Running through the book is a light vein of the history of British geology. James Hutton is found in connection with Siccar Point, Salisbury Crags and Glen Tilt, within an account of the vigorous Plutonists v Neptunists debate. The Southern Uplands are illustrated by Charles Lapworth's work on graptolites at Dobb`s Linn. Adam Sedgwick appears several times (although once as Alan), as does Charles Darwin, while Roderick Impey Murchison is dismissed as "not very likeable".

At first reading I sat entranced by the photographs, retracing my steps over favourite hills - Langdale, Glencoe, Torridon and on and on - but with new nuggets of geology thrown in on almost every page. And there is stimulation for the future: why have I not yet visited the Rhinogs? Why didn`t I follow the Rosset Ghyll fault in its entirety? This is a book to enjoy on cold winter evenings with a glass of Laphroaig beside a warm fire. It will entertain and inform, but read the text critically. And at £20 it is a bargain for the photos alone.

Gerard Slavin

Minerals of Britain and Ireland by A.G. Tindle, 2008. Terra Publishing: Harpenden. 624 pages, 978-1-903544-22-8, £95.

This is a beautifully produced alphabetical listing of all the 2200 reported mineral species, varieties and synonyms in the British Isles, including discredited and fraudulent records. It has over 500 stunning photographs, mostly in colour, that complement the excellent text, which is fully referenced with over 1500 entries. Each mineral is described, with the type locality if it is in the British Isles and biographical details of any British or Irish citizen after whom any mineral is named. The locations, generally mines, of the localities from which each mineral has been described are listed by country, county and region in alphabetical order. Details, including grid references or maps, of the localities are not given. There is also an overview of the mineralisation of the British Isles with a set of generalised colour maps showing the more important localities. Numerous minerals are found in Derbyshire, but other parts of the East Midlands also feature.

Nothing like this has been produced for 150 years, and it amply justifies the widespread anticipation of amateur and professional mineralogists and collectors, some of whom have been in correspondence with Andy Tindle for some years to provide information. It has been 14 years in the making and has been lovingly and carefully put together. Errors are very few despite the comprehensive coverage of this very detailed subject.

This is a large (624 pages) and heavy (clay-rich pages to take the high quality images) specialist publication, but the sumptuous appearance of the book, along with the superb illustrations, should widen its appeal to the more general reader. An extended sample, with example pages and illustrations is on the publisher's website at http://www.terrajr.demon.co.uk/mbisampler.pdf .

Tim Colman

A Geological Excursion Guide to Rum by C.H. Emeleus and V.R. Troll, 2008. Edinburgh Geological Society. 150 pages, 77 figures, 978-1-905267-22-4, £12.99 (at www.nms.ac.uk/books).

This guide enhances and replaces the Nature Conservancy's field guide on the "Tertiary Igneous Rocks of Rhum" and the booklet "Geological Walks on the Isle of Rum". The first authors on those publications are now the joint authors of this new guide, for their research has focussed on Rum for many years. Dr Emeleus is the author of the BGS Memoir on Rum and the Regional Geology on Palaeogene igneous Scotland.

An introduction of 23 pages summarises the geology of Rum, with the classic references and others as recent as 2007, so the visitor can do the homework beforehand. It then describes nine excursions with geological features at 107 locations, with numerous, quality colour photographs, many annotated. Each excursion is shown on a small solid geology map. The first five excursions include Kinloch, the Northern Marginal Zone, the Eastern Layered Intrusion, the Central Layered Intrusion and the Harris Bay area as well as the Canna Lava Formation (as in "Geological Walks on the Isle of Rum"). The others cover Minishal in northwest Rum, with the Southern Mountain Group and Glen Dibidil. Emphasis is on Palaeocene igneous rocks, so Mesozoic, Torridonian and Lewisian rocks are only mentioned where relevant to the igneous rocks.

The guide is also truly practical, with good advice on getting to Rum and staying in the Castle, a tent or a bothy. All routes are described with distances, times and potential hazards; alternative routes find easier ground or avoid streams in spate. The guide is beautifully produced on glossy paper with a waterproof semi-rigid cover, and fits easily into a pocket. I used this guide for a week in June 2009; it is robust and survived heavy rain and rough handling in the field.

The book is a credit to the authors and to the publishers, Edinburgh Geological Society in conjunction with the National Museums of Scotland. For a visit to Rum it is indispensible, and is remarkably well priced.

Gerard Slavin

The Earth After Us by Jan Zalasiewicz, 2008. Oxford University Press. 978-0-19-921497-6, 251 pages, £14.99.

Food for thought: 100 million years in the future, Earth is visited by aliens with investigative geological skills and knowledge - what residual evidence will they find of the brief geological period when *Homo sapiens* was present and the even briefer period when his industrial and agricultural revolutions made widespread changes? Dr Zalasiewicz, a palaeontologist and stratigrapher at Leicester University, poses the question. He then takes us through the findings he expects the aliens to make, as they communicate in animated whispering within a ravine in the great North Continent, after discovering evidence of our unusual anthropogenic stratum sandwiched between sandstones and shales.

Nothing will remain of our urban infrastructure on the surface, but coastal regions with subsiding basins will have the best potential for fossilisation, and the structural complexes of foundations, tunnels and conduits with their bricks, concrete, wires and plastics will all be available for preservation. Here is a sample: "One may predict a range of fossilised plastic bottles along the Urban Strata, varying in colour from pale yellow to brown to black, depending how deeply they were buried. Other plastics might, under heat and pressure, breakdown completely into their component molecules.....to become a minute fraction of newly forming oil and gas reserves." Alien palynologists will have a field day noting the changes that followed the development of agriculture, especially where selective strains were bred and exported around a world with a paucity of native pollens, a process that the author terms the "McDonaldisation" of life. Of ourselves there will be little direct fossil evidence. The possibilities of a human Lagerstatten are few, but you never know!

This is a thought-provoking book that covers a lot of ground in a popular science format that is easily accessible without being simplistic. I enjoyed it.

Gerard Slavin