REVIEWS

Lead Mining in Derbyshire: History, Development and Drainage: 1 Castleton to the River Wye, by J.H. Rieuwerts. Landmark: Ashbourne. ISBN 978-1-84306-343-8. £25.

An inevitable part of any mining is the inflow of water, and the lead miners of Derbyshire were no exception to this problem; their many drainage levels are known as soughs. In 1987, Jim Rieuwerts published privately a limited-edition compilation bringing together 30 years of research into widely distributed archives. It covered the 200 soughs then known and is difficult to obtain today. A further 30 years of research, particularly in the National Archives (Public Record Office) at Kew has uncovered so much more material, and the number of soughs has been doubled. So Dr Rieuwerts has found it necessary to expand his previous work into a three-volume set, of which the present book is the first instalment. It covers the northern part of the orefield, from Castleton to the River Wye, including the Bradwell, Hucklow, Eyam and Stoney Middleton areas. Odin Mine at Castleton had at least four soughs at different times.

Apart from soughs, Dr Rieuwerts has taken the opportunity to describe the industry as a whole, with accounts of who worked which mines and when, and how much ore was produced, where figures survive. Much of the history and development herein discussed relates to the 17th and 18th centuries and demonstrates that the miners knew about the geological relationships of the Carboniferous Limestone and overlying shales long before geology as a science was born. They also knew that the interleaved lavas (toadstones) rarely yielded lead ore and, up to a point, they could forecast where lavas might be met. However, their knowledge had its limitations and this book shows that they ran into problems with Cressbrookdale Lava: it extended much further north and east and was thicker than they expected. They also ran into what appear to be volcanic vents where the toadstone could not be bottomed. Hence a few of their soughs in the Stoney Middleton area were abandoned or diverted when they met toadstone. The traditional categorisation of the mineral deposits into rakes, scrins, flats and pipes is followed, although, as Dr Rieuwarts notes, the "pipes" in this part of Derbyshire are not so much mineralised caves as fissures filled with collapsed overburden containing loose lumps of ore. He also includes comments on the "plumbs" and "hadings" of Longstone Edge where the fissure veins are in vertical or in steeply dipping limestone beds on the south side of the Longstone Edge monocline.

I was sorry to see the unique mining enterprise of the Speedwell Mine at Castleton given rather brief treatment; true, it was not a sough, but it was a unique part of mining history. I have not seen most of the archives, so I cannot criticize much of the detail. However, a few improvements could have been made.

I found it difficult to work out some of the Mining Liberty boundaries; they could have been shown on a separate map or added to the existing maps. The important Stoney Middleton area and Moorwood Sough is split between several maps; an extra map would have helped.

The book is illustrated with sections of the Old Series 25 inches to one mile Ordnance Survey maps with mining details superimposed. There is an excellent set of photographs by Paul Deakin, mostly in colour. The book has a comprehensive index, bibliography and list of archives consulted. I did not notice many spelling or type-setting mistakes, but "Astleton" in the contents list stands out. Also the BSA (British Speleological Association) documents are currently in the Derbyshire Record Office, not Lichfield as stated in the appendix. I understand that the electronic transfer of the book from publisher's office to the printer precluded a proof copy being checked for errors. This book should be on the shelves of anyone interested in the lead mining industry in the Peak District. I look forward to seeing Volume 2 (central Peak District) and volume 3 (southern sector) in the next year or so.

Trevor Ford

The Yorkshire Dales: Landscape and Geology, by Tony Waltham, 2007. Crowood Press: Marlborough. 224 pages, 226 colour photos, 48 diagrams and tables, 978-1-86126-972-0, £16.99.

This is a highly readable, wonderfully illustrated and unconventional book. It is divided into three parts, respectively headed *Starting with the Rocks*, *Creating the Landscape*, and *Imprint of Man*, each part having four or five separate chapters. Unusually, the photographs, diagrams and also many pages are not numbered, which could make it slightly difficult for the reader to connect bits of text to the relevant illustration or to use the index effectively. In addition, nearly a third of the book consists of short essays, mainly of two pages each. Mostly, these develop and provide further interesting detail to particular themes; a few describe the work of certain people and a few others describe walks to particularly famous localities. These essays interrupt the running text and perhaps would have been better placed at the end of chapters.

The book is far from being only a review and compendium of other people's work. It clearly includes many hitherto unpublished observations based on the author's own research and experiences, both at the surface and underground over a long period of time; in particular, his long experience of caving with its close association with karst developed especially in the extensive outcrop of the Great Scar Limestone that dominates much of the landscape. In the chapters entitled *Limestone Country* and *Underground* at the heart of the book, the author's knowledge, experience and brilliant photographic skills come to the fore and will lead many to go and see for themselves. A few may even venture underground and "achieve that special thrill of treading where no man has trodden before, right in the heart of a National Park visited by thousands". For those who don't or daren't, the author's photographs of some of the most sensational and beautiful caves make a fine substitute, especially when combined with convincing explanations of how and when they were formed. The extensive and highly photogenic limestone pavements, the most accessible and visible feature of the Dales karst, are also explained

Finding particular scenes in today's world that are closely analogous to those in ancient times is very difficult and two of those chosen in this book, on pages 24 and 69 respectively, entitled "The Askrigg Block 340 million years ago ...." and "The Yorkshire Dales during one of the Ice Age glacial advances ....", don't work for this reviewer. The latter scene would be fine as an analogue for a rugged mountainous area like the Lake District, for example, but not for an area with generally lower more rounded hills like the Yorkshire Dales.

The effects of the last Ice Age on the landforms of the Dales is well described in considerable detail in the chapter entitled *Carving the Dales*. The fact is emphasized that these landforms were shaped by an ice sheet "that surrounded and covered the Dales". In this reviewer's opinion, most previous authors (including himself) have overemphasized the effects of valley glaciation. Indeed, it is debatable whether there even was a significant length of time when valley glaciation was predominant as opposed to ice streams within the general ice cover eroding pre-existing valleys. Perhaps henceforward, instead of referring to for example "the Wharfedale Glacier", we should refer to "the Wharfedale Ice Stream". An important point is also made in the book regarding bedrock influence on valley profiles: thus "the finest of the Yorkshire Dales", i.e those with the best U-shape such as Chapel-le-Dale and Wharfedale, are flanked by the Great Scar Limestone whereas in the Yoredales country "Wensleydale, though fashioned by a more powerful glacier, has had its slopes degraded to more gentle profiles".

The broad scope of the book is shown by the titles of some of the later chapters: *Soils and Plants*, *Mining Wealth*, *Farming the Rock Landscape* and *Landscape to Enjoy*. It is likely to have a far wider appeal than a book only dealing with the geology and is therefore better suited to the general reader. There are a few minor inconsistencies and errors, perhaps the result of insufficient scientific rigour in the editing. Nonetheless, the book is strongly recommended not only to the occasional or regular visitor to the Dales, but also to people who live and work there. Priced at only £16.99, it deserves, and should receive, a wide and enthusiastic readership.

Neil Aitkenhead

Minerals of Northern England, by R. F. Symes and B. Young. 2008. National Museums of Scotlnd: Edinburgh, ISBN 978-1-905267-01-9, 208 pages, 188 photos, £30.

This is a truly glorious record of the splendid minerals that have been found in the north of England, in both the Lake District and the Pennines (as far south as the Craven faults). The pages open with a concise but very readable introduction to the geology and mineralisation. The veins and flats with their copper-lead-zinc ores, alongside the fluorite and barite, are clearly described, as are the unusual nodules of the Seathwaite graphite. Debate over the origins of the hematite sops is reported but not resolved, though the authors do favour derivation from the Permo-Triassic cover where it lies directly on the limestone, with subsequent deposition in karstic cavities.

The main section of text describes the various mining areas, with an emphasis on the known or collectable minerals, and this does provide a very comprehensive and readable overview of both the mining history and what remains to be seen today, though it is not intended as a guide book. There is then a fascinating section on the great mineral collectors, and a bibliography of nearly 400 items (which are not cited as text references). The whole text is superbly illustrated, but then there is also a gallery of 92 photographs, mostly half-page or larger, of the most beautiful specimens of all the mineral species that we are familiar with in far more modest form. There are thirteen lovely images of coloured varieties of fluorite, and another of a superb nail head calcite that really explains the origin of that term.

This is a superb book. It would be difficult to find two more authoritative authors, and they have produced a volume that is a delight to both view and read, and all at an excellent price. There will be few geologists from anywhere north of Potters Bar who will not want their own copy.

Tony Waltham

Geology of Gravestones in Welford Road Cemetery, Leicester, by Helen Boynton, 2007. 24 pages, 40 photos; £7-50 (from 7 The Fairway, Oadby, Leicester LE2 2HH).

This booklet takes the non-geological reader through the great variety of different rock types that have been used for gravestones in this cemetery, which is something of a landmark in Leicester. Charnwood rocks do of course feature strongly, but there are also granites from elsewhere, the usual limestones, and even Italian marbles. The geology is well explained and is very well illustrated (all in colour), so the pages are a delight to turn, though the book's specialist nature and its short print-run do mean that it is rather more expensive than could have been hoped for.

Tony Waltham

The Last Two Glaciations of East Lincolnshire, by Allan Straw, 2008. Louth Naturalist's Antiquarian and Literary Society, and Lincolnshire Naturalist's Union, 46 pages. ISBN 978-0-9539533-6-3, £6.50.

To give an impression of this sequel to Allan Straw's earlier publication on Welton-le-Wold, which was reviewed in *Mercian Geologist* 16(3), 222-3, I will quote from a covering letter from the author - 'My swansong, another sweeping up and stirring the pot job'. Straw is the undoubted doyen of Lincolnshire glaciations and an opponent of orthodoxy.

In this new work, the focus is on the 'Newer Drift' which is assumed to be solely the products of Devensian Glaciation. For more than 60 years now, the author has argued for the recognition of two separate glacial advance phases from offshore into east Lincolnshire, with the first being slightly more extensive than the latter. Importantly, these are considered to be separated by an erosional interval that significantly reduced the 'freshness' of the glacial landforms produced in the first phase. These two-phase relationships have proved anomalous when extrapolated into the other parts of Britain, and particularly so just across the Humber in Holderness. Accordingly they have tended to be overlooked, yet they still demand an explanation. This is the task which Straw sets himself.

Missing is any mention of Rowl Twidale's (1957) study of the north Lincolnshire 'glacial overflow channels', which adopted the classic Kendelian ice-dammed lake model or the biostratigraphical work by Pat Suggate and Richard West (1959). However, the 'knock-on' effects arising from ice blockage of the Humber in creating large glacial lakes is given full consideration, as is the impact on the Trent drainage system. Personally, I remain unconvinced that the earlier advance phase is Devensian, and the evidence presented on dating the Trent terraces could equally be taken to support an immediate pre-Last Interglacial age i.e. MOI Stage 6.

The text is written for a general reader and a glossary of the more technical words is provided. It demands a knowledge of the geography of the eastern parts of the county, but there are numerous national grid references to locate sites. Your reviewer has the advantage of being born and bred a Grimbarian, and being initiated to camping as a young scout in one of the meltwater channels discussed. There are 12 plates (10 in colour) and two A5 sized colour maps showing the glacial limits, pattern of meltwater channels and outwash zones.

We applaud Allan Straw's initiative of presenting his mature views on the latest glaciations of east Lincolnshire. To have a reflective statement on a life long research programme is invaluable. Many future historians of earth science will be indebted.

Peter Worsley