

The ground beneath our feet: 200 years of geology in the Marches

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ROSENBAUM, M.S. (2008). The ground beneath our feet: 200 years of geology in the Marches. *Proceedings of the Shropshire Geological Society*, **13**, 1–4. One hundred and forty geology enthusiasts from across the country gathered in Ludlow on Thursday 13th September 2007 to celebrate the 200th anniversary of the world's oldest geological society, and just over 175 years since the visit by Sir Roderick Impey Murchison, who is generally acknowledged as the person who unravelled the “Transition” rocks, those beneath the Coal Measures that hitherto had defied scientific description.

The sessions began by showing how important the ground is to the economic prosperity of the region, ranging from its influence on agriculture, through provision of building stones from Whitcliffe and Bromfield, to the winning of minerals such as iron, copper and coal on Clee Hill. There is also an intrinsic interest in the evolution of life, for which Ludlovian rocks are world famous, for instance the Ludlow Bone Bed.

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BACKGROUND

Rocks represent our main source of evidence for interpreting the past, and the Marches include representatives from all twelve internationally recognised periods of geological history, from the Precambrian to the Holocene, spanning 700 million years of earth history. Included within these are four which were defined on the basis of the evidence discovered here: Cambrian, Ordovician, Silurian, Devonian, and a fifth, the Permian, was subsequently defined on the basis of techniques first worked out in the region.

Our current level of understanding of the 700 Ma evolution of the Marches is based upon detailed evidence acquired through diligent collecting and recording by generations of enquirers. Its interpretation is due to the skills that geologists are able to employ to read it. However, many questions remain unanswered, awaiting discovery of new facts and interpretation, or re-interpretation, as new ideas emerge.

IMPACT OF GEOLOGY ON SOCIETY

The impact of our understanding of the ground on the lives of those who live in the area is considerable. The industrial revolution began here, with ironstone nodules brought down from Clee Hill to be smelted at Burrington using charcoal. This was followed in Broseley and Coalbrookdale by ironstone and limestone being fired with coal

and an upsurge in industrial output along the banks of the River Severn in Ironbridge Gorge. Mineral extraction is still active, nowadays primarily for construction and roadstone; the groundwater is a major concern both to domestic consumption and agriculture; the landscape attracts tourism, arguably now the most important source of income, and its configuration determines the potential for sustainable development of the region.

PUBLIC UNDERSTANDING OF GEOLOGICAL SCIENCE

On a local level, the public understanding of geological science has been developed most notably by the work of the late John Norton, who had a remarkable gift for encouraging youngsters to take an interest in the ground around them. This has been one of the reasons that the area has been portrayed as “The Geological Capital of the UK” (quoting the Wikipedia entry for Shropshire).

Ludlow has seen large gatherings of geologists in the past. Perhaps the most recent such event was the visit by delegates attending The Murchison Symposium organised by the Palaeontological Association at Keele in 1989, whose papers were subsequently published (Bassett *et al.*, 1991). The photograph of the assembled company (Figure 1) features several speakers who also presented at the 2007 symposium!



Figure 1. Delegates attending the field excursion which followed The Murchison Symposium organised by the Palaeontological Association at Keele, assembled on Whitcliffe Common overlooking Ludlow on 4th April 1989. The photograph features several speakers who also presented at the 2007 symposium, including David Lloyd (then Mayor of Ludlow) on the extreme right. Photograph courtesy of David Lloyd.

Many have felt that the role of the region in the development of geological science should be reflected in the Bicentennial Celebrations of the Geological Society of London. A number of organisations in the Marches therefore agreed to collaborate to run a festival to celebrate the Society's 200th anniversary.

The one-day symposium in Ludlow lay at the centre of this Festival, on the theme of "The ground beneath our feet: 200 years of geology in the Marches". The invited speakers for this event have a special interest in the geology of the Marches and their contributions will provide authoritative and up-to-the minute accounts of their specific fields. These are intended to appeal to the curious public as well as the committed geologist and focused on five themes of general as well as regionally significant interest. There were five themes:

- The mark of distinction: local character shaped by landscapes and building stones
- The Marches in the past: on the edge of a lost ocean

- Geology in the community: evolving perceptions and realities
- The Ice Age: on the edge of a glacier
- The future for geology in the Marches

The papers in this volume of the Proceedings have arisen from the presentations at the one-day symposium in Ludlow, and are arranged in the order that they were presented, addressing each of these five themes; details are given in the Annex.

ACKNOWLEDGEMENTS

The year 2007 saw a number of anniversaries of significance to the geology of the Marches:

- the 200th anniversary of the Geological Society of London
- the 175th anniversary of Murchison's epic visit to the area that led to publication of *The Silurian System*.
- the 150th anniversary of the Geologists' Association

The Marches Festival of Geology was developed in celebration of these anniversaries, brought together by a number of organisations in the region, including:

- Herefordshire Heritage Service (HHS)
- Hereford & Worcester Earth Heritage Trust (EHT)

- Ludlow Museum Resource Centre (LMRC)
- Ludlow Research Group (LRG)
- Shropshire Geological Society (SGS)
- West Midlands Regional Group of the Geological Society of London (WMRG)
- Woolhope Naturalists' Field Club Geology Section (WNFC)

The papers in this volume of the Proceedings arose from the presentations at the one-day symposium on Thursday 13th September 2007 which formed the core event of the Marches Festival of Geology, and was hosted by the Shropshire Geological Society in association with the West Midlands Regional Group of the Geological Society of London.

A series of GeoTrails was also prepared, in part to support workshops and fieldtrips for the Festival, and in part as self discovery guides. These are available in digital form on-line (details below) and include:

- in front of the last glacier in South Shropshire
- the landslides of Ironbridge Gorge
- a revision to the Teme Bank Trail (the first edition is still available as a printed leaflet from the Ludlow Museum Resource Centre)
- a reprinting of the Mortimer Forest Trail, originally prepared by Jim Lawson
- the building stones of Ludlow

Details are on the Society web site:

<http://www.shropshiregeology.org.uk/SGSpublications>

REFERENCE

Bassett, M.G., Lane, P.D. & Edwards, D. (eds) (1991). The Murchison Symposium: proceedings of an international conference on The Silurian System. *Special Papers in Palaeontology*, **44**, 1–397.

ANNEX: SYMPOSIUM PROGRAMME

Thursday 13th September 2007

09.00-09.15 Registration at Ludlow Assembly Rooms. Tea/coffee available.

09.15-09.45 Welcome Address

09.45-11.00 Session 1.

11.00-11.30 tea/coffee

11.30-12.45 Session 2.

12.45-13.45 lunch

13.45-15.00 Session 3.

15.00-15.30 tea/coffee

15.30-17.00 Sessions 4 & 5.

17.00-17.15 Closing Address.

The structure allowed for two half-hour presentations in each session. The general initial intention was that this format be used to invite pairs of speakers on each of five topics, one with a national reputation and the other a local

expert, subject to availability. Each session was chaired by someone from each of the supporting organisations.

The **Opening Session/Welcome Address** was given by Dr Peter Toghil (SGS – “Marches Geology for All - an introduction to 700 million years of earth history in Shropshire and Herefordshire”)

Chair: Professor Michael Rosenbaum

Session 1 “The mark of distinction: local character shaped by landscapes and building stones”

Dr David Lloyd MBE (Chair of the Ludlow Historical Research Group – “local character shaped by landscapes”)

Andrew Jenkinson (SGS – “From the Ground, Up: vernacular building stones in a border landscape”)

Chair: Colin Richards (South Shropshire District Council)

Session 2 “The Marches in the past: on the edge of a lost ocean”

Dr Robin Cocks OBE (NHM and President of the GA – “Palaeogeography of the Lower Palaeozoic”)

Prof David Siveter (Leicester Univ – “the Herefordshire Lagerstätten”)

Chair: Chris Rayner (SGS)

Session 3 “Geology in the community: evolving perceptions and realities”

Harriett Baldwin and Philip Dunne MP (Member of Parliament for Ludlow - “Geology in the community: evolving perceptions and realities”)

Prof Hugh Torrens (Keele Univ – “Geological pioneers in the Marches: from Robert Townson (1799) to Roderick Murchison (1839)”)

Prof Rod Stevens (Gothenburg Univ, Sweden – “Challenges for the geoscientist: an international perspective”)

Chair: Dr Paul Olver (WNFC)

Session 4 “The Ice Age: on the edge of a glacier” and “The future for geology in the Marches”

Adrian Collings led a remembrance of Dr Peter Cross David Pannett (SGS – “the Ice Age legacy in North Shropshire”)

Dr Andrew Richards (EHT – “Glaciation and drainage evolution in the southern Welsh Borderland”)

Chair: Adrian Collings (WMRG)

Sessions 5 “The future for geology in the Marches”

Prof John Dewey (UC Davis, California – “Future avenues of research in the Welsh Borderland, with particular reference to plate tectonics”)

Dr David Schofield (BGS Regional Geologist – “The future for geology in the Marches: a BGS perspective”)

Chair: Professor Michael Rosenbaum

The **Closing Address** was given by Lawrence Banks CBE (Great Grandson of Richard William Banks who hosted Murchison at Hergest Croft on his epic visits to the Marches)

Chair: MSR

Posters

The strategy to further encourage local participation was to invite poster displays, which encouraged contributions by a number of individuals, community organisations and amateur geology groups, and provided a public outlet for the facilities run by the County Museum Services.

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