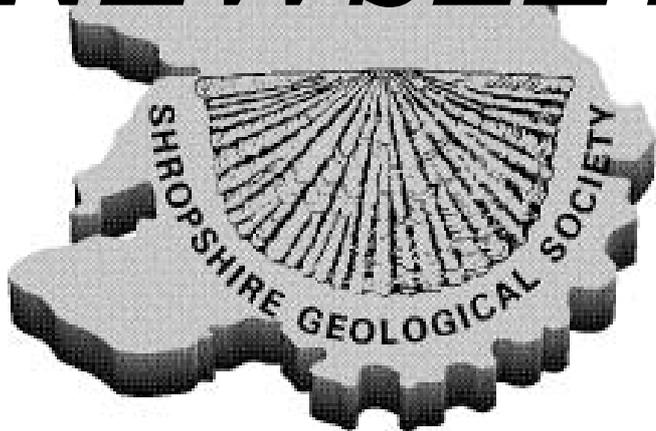


NEWSLETTER

July 2002



The most amazing rocks

Marble, Quartzite, or Ice may be thought of as simple rocks, but what are the most complex? Surely they are multi-component, highly-fossiliferous Limestones. Among such rocks what would be the most extraordinary? Not the obvious shell or coral debris with mixed cements and a few microfossils, even less so such size-sorted types as oolite or chalk. The most challenging limestones are probably the Mudbank deposits: these have a full gamut of macrofossils such as echinoderms, bryozoa, and their shelly companions, as well as a range of early mud and silt-sized grains, a wide variety of microfossils as infauna and pelagic debris, and a complex series of cavity and inter-granular spar and cement fills.

Of all mudbank deposits the most elaborate and widely-developed are the Waulsortian mounds of the early Carboniferous. These "Reefs", named from a Belgian locality, are known worldwide, but best of all in Ireland, where they occur in two dozen counties (only c.six in G.B.). Within a few million years, commencing in Cork and lingering into Leitrim, a patchy complex of banks and sheets spread 300km wide and up to 1km thick. This huge drape of profuse mud, probably generated by alkaline chemotrophic bacteria, almost a single infection, grew in open ocean slopes from 200m down in the dark, but sometimes reaching up to photosynthetic shallows. The mounds could grow with steep sides, up to 40°, and had complex sheets of spar with cavities, "Stromatactis" and accompanying bryozoan fronds. Copious crinoids, brachiopods and other common creatures such as gastropods, trilobites and nautiloids digested the mud and each other. A few corals, molluscs, sponges and fish can be found. Among the microscopic creatures forams and conodonts are usual among various peculiar "bugs".

In the many sparry cavities there are generations of fine internal sediments, calcite and dolomite silts and a series of cements with different traces of Mg and Fe. In these spaces

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Obituary: John Norton 1924 to 2002

John Norton who died on 17th June 2002 was a great naturalist and curator interested in everything within the natural world. He was an honorary, and founder member of The Shropshire Geological Society. I first met John in the early 1950s when my mother used to take me on fossil hunting outings to Shropshire. When I came to Shropshire to live in 1971 John was already established as the highly respected curator of Ludlow Museum. Although John was charged with looking after everything in the museum, which he did with great efficiency, geology was his real love. When he took over the museum in 1959 the collections had been decimated following closure of the museum in the late 1940s. John set about retrieving many of the lost specimens and building up a huge collection of local material which would become a classic reference collection for the type area of the Ludlow Series. Geologists came from all over Britain and the world to study this type material.

John was a great ambassador for Shropshire geology, and, although changes in the late 1970s by Shropshire County Council meant that he could not spend as much time as he wanted on his beloved fossils, he still tirelessly worked and campaigned for better geological displays and storage for the reference collection. Many of us know the story that John had the best collection of shirt boxes in Britain in which were stored, perfectly safely and beautifully labelled in his own handwriting, all the museum's fossils. Since John's retirement in 1989 the collections have been housed in better containers and thanks to local pressure the new geology gallery below the Assembly Rooms was named the John Norton Geology Gallery when it opened in 1995.

I know that John dearly wanted to live to see the Library and Resource Centre open in Ludlow where all his beloved collections would at last be properly housed. He asked his doctor to make sure he lived until that day but it was not to be.

Never the less, John Norton will be remembered as one of the great curators of geology, who set the highest standards, and who did so much for Shropshire geology. A local man, much loved by his community as testified by a packed Bromfield church at his funeral, he will be sorely missed, but Shropshire and our Society are better for his life.

Peter Toghill

Continued from previous page

there is often a little pyrobitumen and metal sulphides (Fe,Zn,Pb). When logging drill cores I am often astounded by the beauty and fascination of this rock, so full of colours and striking fossils and crystals.

Alongside "Reef" areas lie cherty rocks with an inscrutable silicon biology – a whole new quandary! In the landscape the hills and knolls of white "Reef" form scenically and botanically valuable areas. Ireland is one of the world's major zinc provinces, and most of its mines and bigger prospects are found in the "Reef", often when next to tracts where dolomite has replaced all the limestones for miles.

Petrologists, Micropalaeontologists and statistical Palaeo-ecologists will always have plenty to investigate. These rocks in Ireland are usually very well lithified, so that all details remain whether in outcrop, hand-specimen or lens. They can be annoying to the mapper as they often show little sign of original beds, and small outcrops may be difficult to distinguish from later, less complex but similar mudmounds, though these almost never achieved true Waulsortian style again!

Waulsortian does occur in Shropshire, hidden beneath the old limestone mines of Lilleshall: our own buried treasure!

David Smith

Book Reviews

The Geology of South Shropshire The Geologists' Association Guide No. 27

Although described as a third edition, this 116 page book with colour photographs owes next to nothing to the slim guide of 1968 by W.T. Dean, which was my introduction to Shropshire's field geology when I arrived here 30 years ago. That 2nd edition was on the table for revision by Geological Working Party of the Shropshire Conservation Trust in the 1970s; but who expects things geological to move quickly?

Certainly the new guide is all the better for the considerable amount of work that has been done in the area over the past 30 years. It can incorporate the findings from much better BGS mapping; from a raft of research papers on issues such as dating the Precambrian, reclassification of the Ludlow series, and new theories on mineralisation of West Shropshire; and from development of concepts like plate tectonics. It also draws on the increased geological fieldwork generated by the Society's involvement in RIGS surveying over the last few years, with which two of the authors, Martin Allbutt and Christine Rayner, have been intimately involved. The other two names on the cover are also Society members: John Moseley and our chairman Peter Toghill.

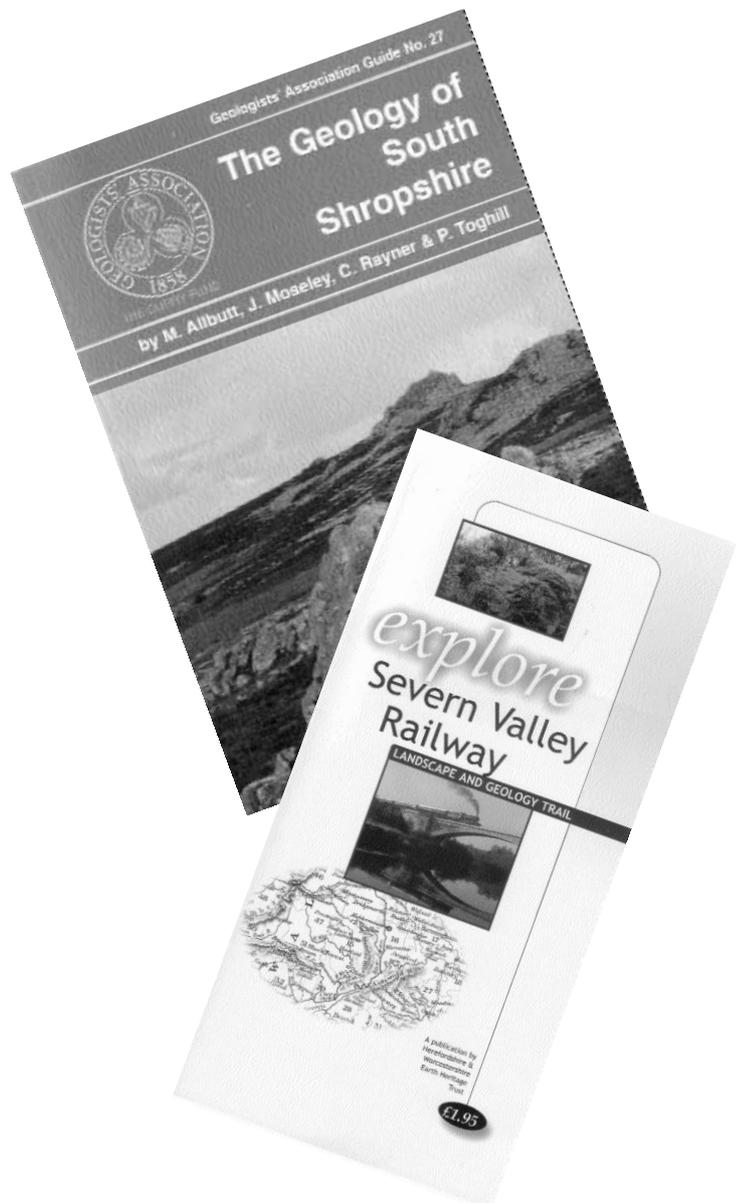
Despite the coverage of introductory and contextual material this remains emphatically a field guide, and a guide, it has to be said, for the keener geologist. You will find ample guidance to both the logistics and geology of your trip. Safe parking is the starting point and routes keep to public rights of way with just a very few exceptions where permissive access must be sought. The combination of sketch maps and

written directions should keep anyone on the "straight and narrow". When it comes to checking on what you are looking at, the descriptions of significant outcrops are detailed but often very technical. Both a glossary and more "field sketch" type illustrations would have helped the less confident to appreciate what is to be seen.

That this guide covers only two thirds as many sites in two-and-half times as many pages is a clear indication of the amount of work that has gone into this new edition. At first glance there appear to be some glaring omissions, but as the introduction states there are now separate guides to sites such as the Onny Valley, Ercall, Wenlock Edge and Teme Bank. Even so the selection of ten very different itineraries in the relatively small area of South Shropshire emphasises the enormous scope of our county's geodiversity.

This is obviously an essential tool for all SGS members, who can purchase it at the GA members' discount (through affiliation of the Society to the GA) for £11.00. Others pay £15.00. It is available from The Geologists' Association, Burlington House, Piccadilly, London W1V 9AG or order through me at Scenesetters, Ash-Leys, Bucknell, SY7 0AL (Tel: 01547 530660) and I will secure the discount for you.

Andrew Jenkinson



Next-door's Geology Guides:

Our neighbours, Hereford and Worcester Earth Heritage Trust are continuing to produce their series of 'Landscape and Geology Trails' and 'Building Stones Trails'.

Uniform with 'Wigmore Glacial Lake' published last year there are now four more titles. Symonds Yat and The Severn Valley Railway guides are in the Landscape Trail series. They give a clear and colourful account of the visible geology in language accessible at all levels, and are illustrated with many photos and diagrams. Palaeoenvironments are explained with the help of modern day examples and all concepts are clearly explained.

The Society gave some help with the Severn Valley guide in recognition of the fact that half of it is on "our patch"!

In the "Building Stones" series is a geological guide to Goodrich Castle and to the Worcester Cathedral. All the guides are produced as folded leaflets on thick, waterproof paper which makes them ideal for field use.

These trails can be obtained from various outlets in the vicinity of the respective areas at a price of £1.95 each, or from Scenesters (see South Shropshire Geology Guide above).

Field Trip Reviews:

Field Trip to South Wales 14-16 June 2002

We travelled variously on a dull drizzly Friday afternoon to an estimable private hotel on the Swansea seafront. Things then brightened up. Geraint Owen, our host from Swansea University and South Wales G.A. Group whom we joined for the field excursions, gave us a fine detailed slide-show introduction.

On Saturday we drove to Rhossili to see the fine cliff and hill scenery, from shattered, tectonised, Old Red Sandstone [said to be Upper: but is it Lower beneath a slide in the similarly disrupted Lower Limestone Shales?], up to the Middle Visean limestones. A copious field guide handout was provided, which will be useful to all who missed the trip. Borrow it from the Society library. After lunch we travelled east along South Gower. Drizzle didn't spoil many intriguing Carboniferous outcrops with many limestone varieties, soil and clastic channels and many tectonic and mineral events.

Sunday was brighter, and we arrived in the Vale of Glamorgan coast to see the complex basal Jurassic limestones, at their unconformity with more units of the Carboniferous, with channels of Triassic conglomerate, sandstone and shale intervening. Fine views to the Exmoor coast gave more opportunities for landscape theories, and we again studied recent deposits draping the glacial cliff lines. Galena and carbonate veins were common. A high degree of tectonic disruption locally affects the Lias shaly limestones, where Carboniferous Limestone is thrust over the Jurassic: the Carboniferous Limestone itself already folded and recrystallised, with perhaps even a local deep mud-bank facies exhumed in the inversion.

The day and excursion ended with more Trias-on-Carboniferous unconformity, this time with several dinosaur footprints in situ and some good iron oxide veining. Altogether a great trip.

David C Smith

Field Meeting at Wood Lane Quarry, Ellesmere. 18th May 2002

A visit to a gravel pit which is also a rubbish dump may not sound very inviting, especially to the average 'hard rock' geologist. However, the reality is far from dull.

For the citizen with a concern for the environment, the management of the landfill site, which includes 60% of Shropshire's recycling capacity, was full of interest and a model to admire.

For members of a society which benefits from money generated by 'landfill' and similar taxes, it was important to see how the system works on the ground. One end result at Woodland has been the creation of a wetland nature reserve and financial support for the Wildlife Trust.

For the conventional 'hard rock' geologist interested in petrology the ice had delivered here a vast range of erratics from North Wales, Scotland and the Lake District. Of special interest were the 'beer-sized' boulders accidentally harvested and delivered to the sugar factory, which had been dumped here for disposal - much more useful specimens than the half ton boulders!

For those with interest in the glacial geology the working faces provided clear exposures of fluvio-glacial sands and gravels which build up this landscape of chaotic mounds and hollow formed where ice from the Irish sea meet ice from Wales. Recognition of erratics characteristic of each ice sheet was therefore significant.

The group that day was unfortunately small and we could very well run this visit again some time in order to allow more members to attend and enjoy the varied aspects of the site including the warm welcome hospitality and guidance from Peter Mold of Tudor Griffith.

David Pannett.

Letters to the Editor

Fullerene debate continues

Dear Andrew

I refer to the article by David Pannett in the May newsletter regarding fullerenes and their possible association with impact sites, after an article by Luann Becher in Scientific American, March 2002.

Members may like to know that the controversy still rages.

The suggestion that fullerenes were evidence of impact events was earlier made by Heymann *et al.* in 1994. However this was disputed in a paper by Roger Taylor *et al.* in Fullerene Science & Technology in 2000, where it is stated that fullerenes were not present in deposits as claimed, and it was extremely unlikely that fullerenes would have survived for any length of time after impact.

The alternative theory for the extinction at the K/T boundary, i.e. the huge Deccan Traps volcanism in India, has been advanced by Prof. Dewey McLean, from the mid 1970's when Alvarez *et al.* were putting forward their impact theory.

While the collision theory has become more accepted it is instructive to consider the alternative, and readers wishing to follow this should look on the internet under Dewey McLean. One site is http://filebox.vt.edu/artsci/geology/mclean/Dinosaur_Volcano_Extinction/ where they will find an insight into the politics of the debate.

Regards

Tony Browne

Help please - accessible sites

The editor was recently e-mailed by John Clark of the University of Leeds regarding wheelchair access to geological sites. He is hoping to produce a series of field guides to wheelchair-accessible sites of national or regional geological importance. In response to the editors request of a definition of accessible John Clark wrote:



"..as a generalisation we can describe a rock outcrop as being wheelchair-accessible if even in wet weather a wheelchair-user can be pushed by a moderately fit able-bodied assistant from a nearby car park close enough to appreciate the intended geological significance of the location. This raises the question of scale, in that one needs to get right up to a rock face to study, for example, fossils, minerals or rock textures, while some geological structures and rock relationships are more easily interpreted from a distance. Given the vagaries involved in defining sites as wheelchair-accessible (e.g. how close is a 'nearby' car park and how fit is a 'moderately fit' able-bodied person?), I'd be interested to investigate 'possibles' as well as 'definites'."

So if any of you know of any good sites that would fit the above criteria please let Andrew Jenkinson know so he can compile a list to be sent back to John Clark.

Interesting Extras

What the local papers say:

We read recently that the Bishop of Lichfield, Keith Sutton, made a speech in the House of Lords appealing to the government to help more to prevent flooding in our region. His diocese has some first hand experience of the problems: Shrewsbury Abbey suffered badly but has bounced back with new defences of its own ready for next time; Meanwhile they discovered that the modern vicarage had been purchased without noticing that it had been built on a floodplain, even though it is such a clear landscape feature at that point!

Once upon a time religious leaders may have interpreted natural disasters as divine punishment for a sinful population. More recently Insurance companies also referred to a divine contribution, but now the same cause might be re-classified as 'Government neglect'. Perhaps with this in mind, we also read that our local MP's are coming together to lobby the government in a similar way.

David Pannett

Scientific American July 2002

15 Answers to creationist nonsense - John Rennie

The creation/evolution debate in the U.S.A., reported in our last newsletter, rumbles on. Creationists are 'adapting' (evolving) their tactics to gain influence by promoting the concept of 'intelligent design'. The magazine recognises that to defend evolution in its pages would be 'preaching to the converted'. Nevertheless, it provides a useful summary of arguments which its readers could use when engaged in this battle to defend science.

David Pannett

Exhibitionist needed

Well, not exactly - but the increasing number of occasions on which the Society is asked to provide some sort of display is making considerable inroads on the spare time of your Committee. If anyone would be willing to take on the co-ordinating role of "Exhibition Manager" this would be much appreciated. As at present, it would be expected that a number of other members could be called upon to volunteer to staff exhibitions, but really one person should be nominated to liaise with outside bodies, maintain the display material and generally organise the logistics of our public appearances.

So don't be shy. If you would be willing to do this task please contact the secretary or other committee member. Those whose sole means of transport is a bicycle or a Mini are excused.

Dates for your diaries

FIELD EVENTS IN 2002:

Sunday 21st July - Clent Hills and St George's Land, West Midlands. Joint meeting with North Staffordshire GA. Leader: Graham Worton (Keeper of Geology at Dudley Museum). **From Carboniferous to Glacial Deposits** is the next installment of Graham's geological story of the West Midlands. It is hoped that we can arrange a pub lunch on this occasion for those who are interested. Meet 10.15 at summit of Barrow Hill Pensnett, Dudley (SO917817).

Sunday 11th August - Exploring Caer Caradoc and Hope Bowdler Hills - Some Precambrian conundrums led by Martin Allbutt. Meeting point is the lay-by on the east side of the A49 at SO466954, below the woodland of Houghs Coppice to the east, 1 mile north of the traffic lights at Church Stretton and about 2 miles south of Leebootwood. Time of meeting is 9.45 a.m., Sunday 11th August. **Please note this is a change of rendez-vous from that previously given.**

In the early 1990's John Pauley proposed a new understanding of the relationship between the Uriconian Volcanic and Longmyndian Sedimentary suites of the Precambrian in Shropshire. Using the data from recent and on-going detailed surveys of the Stretton Hills, particularly Caer Caradoc, Ragleth and Hope Bowdler, this field trip will examine and attempt to assess the field evidence for Pauley's radical vision. En route it will encounter lavas and intrusions, sediments and tuffs, faults and thrusts, dips and strikes, unconformities and viewpoints, even some fossils.

The itinerary plans to cover Caer Caradoc and Hope Bowdler hills so is fairly strenuous - about 8 miles and 1500 feet of ascent. Stout foot-wear and windproofs are advisable. A packed lunch is suggested although, depending on timing, a lunch-time break in Church Stretton may be possible.

Sets of field notes will be available for those who let me know beforehand that they wish to take part; phone 01694 722620

August 23rd-26th Earth Alert 2002 – Scarborough. The major Geologists' Association event including the annual GA Reunion.

If you are attending this meeting and would be willing to undertake short spells of "staffing" the Society's display stand, please contact Andrew Jenkinson on 01547 530660. The display will not require constant attention and staffing will not interfere with other aspects of the programme.

One seat will also be available with Andrew for transport to and from Scarborough.

See over for Events Elsewhere

Winter Lecture Programme 2002/03

All meetings start at 7.30pm in Shirehall, Shrewsbury. Further details will be provided in future editions of the newsletter. We start the season with an interesting local topic by one of our own members, Ivor Brown. Note the dates now.

9th October: Metal Mining in West Shropshire by Ivor Brown

13th November: Geology and Flood Defences in Shrewsbury: Problems and Solutions by David Pannett and Stewart Sutton.

4th December: Annual General Meeting

15th January: Title to be announced by Gordon Hillier

12th February: Revised Interpretations of the fossils and sediments of the Grinshill Sandstones and Flagstones, middle Triassic, North Shropshire by David Thompson.

12th March: Geology of Bottled Water by Professor John Mather.

MEMBERS' EVENINGS will again be arranged in response to requests from members. Let the Committee know what you would like. Full details will then be in the next newsletter.

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INTERNET

The Society Web Site is at www.shropshiregeology.org.uk
Check here for latest developments.

The *NEWSLETTER* of the Shropshire Geological Society is published six times a year. Please send in **feature items for Septmeber 2002 by August 15th** to Andrew Jenkinson at Ash-Leys, Bucknell, SY7 0AL, e-mail as above. The views expressed in the *Newsletter* are not necessarily those of the Society or its Committee.

Events Elsewhere

More details on venues and itineraries of the field meetings below can be obtained from Gordon Hillier on (01691) 682484

Geologists' Association, London

For most field meetings, registration with GA Field Meetings Sec. is required.

20th July (Sat): 'Fossils of the Weald', R Agar & Prof. E Jarzembowski.

3rd August (Sat): 'In the Footsteps of Dinosaurs in Oxfordshire', Philip Powell.

Sept 7th (Sat): 'Chislehurst Caves & Crystal Palace Park', Austin Lockwood.

Sept 21st – 22nd weekend visit: 'Introduction to the Petroleum Geology of Dorset', Geoff Swann.

Black Country Geological Society

21st July (Sun) joint with SGS (see this newsletter) and NSGGA: 'Geology of the Black Country - Part 2' Graham Worton.

Sept 21st - 22nd weekend: 'Dudley Rock & Fossil Fair'.

Sept 30th (Mon): LECTURE 'Shoreline Movement and Shoreline Management in the Wash, East Anglia', David Brew.

Manchester Geological Association

July 14th (Sun): 'Trafford Centre Building Stones and Astley Green', Dr F Broadhurst.

Sept 21st (Sat): 'Llanwrst', a visit to the Gwydyr Forest Miners Trail, Bill Hotchkiss.

North Wales Geological Association

Sept 14th (Sat): 'The North Wales Coast', Rob Crossley.

Sept 15th (Sun) OUGS: 'Moel Siabob', Hadyr Roberts.

North Staffs Group of the GA

July 21st (Sun) joint with BCGS and SGS: see this newsletter.

Aug 11th (Sun): 'Castleton area in the Peak District, Derbyshire', Chris King.

Sept 14th – 15th weekend visit: 'Isle of Wight' joint with the Essex Group of the GA.

Liverpool Geological Society

Sept 21st (Sat): Trip to 'North Pennines'