

Bulletin

Number 89

April 2009



Diary Dates:

Thursday 7th May 2009 *Silurian soft-bodied sensations: a unique window on the evolution of life.*

Speaker: Professor David Siveter, University of Leicester.

Please note: This is a rescheduled lecture, the February lecture having been cancelled due to bad weather

Our understanding of the history of life on Earth relies heavily on the fossil record and especially on rare cases of so-called 'exceptional preservation' where soft parts of animals and entire soft bodied animals are preserved. Such exceptionally preserved fossils provide an unparalleled view of animal palaeobiology and biodiversity and are crucial to unravelling the evolution of life. The lecture will focus on illustrating recently discovered exceptionally preserved fossils from 425 million year old Silurian rocks of Herefordshire in the Welsh Borderland. This is a fossil biota of global importance, containing representatives of many major groups of animals. They are being studied by various methods, including reconstruction in 3-D using computer techniques to create 'virtual fossils'. These fossils are crucial in helping to fill a gap in our knowledge of the history of life and to resolve controversies about the relationships of animals still alive today.

This will be preceded by a sit down buffet. To book a place please complete the [attached flyer](#) and send to Carol Fereday together with the appropriate cheque by Friday 1st May 2009.

New Members

Since the last Bulletin the following new members have joined. We welcome them and look forward to seeing them at our meetings.

Les Mason, Winifred Knight, Keith Austin.

NSGGA FIELD PROGRAM FOR SPRING 2009

Each person attending field meetings does so on the understanding that they attend at their own risk. The Group has Public Liability Insurance through a GA insurance policy which also carries limited personal accident cover for members attending meetings or field trips. Non-members attending Group field trips are advised to take out their own personal accident insurance to the level they feel appropriate.

Note: a field fee of £2.00 per head is charged (for members and non members) to cover leader's expenses.

Wednesday 22nd April: Downstairs (and Upstairs) at the Potteries Museum, Hanley.

Leader: Don Steward.

Meet in the foyer at 2.00 PM. An opportunity to study some of the John Wood collection of fossils from the Carboniferous Coal Measures and the Serjeant North Midland Mineral Collection, plus local memoirs and maps. Upstairs, the building stones of the museum and its various exhibits. Suggested Car Park – Hinde Street (Park and Ride).

Limited to 10 places only; book in with the Field Sec. Gerald Ford

Friday 8th May - Sunday 10th May: The Jurassic Coast, Dorset.

Leader: Alan Holiday.

Based at The Heights, Isle of Portland Hotel, see flier with Bulletin 88.

Accommodation from our booking at the group rate is still available at The Heights.

Thursday 28th May: British Gypsum Mine at Fauld Lane, Fauld.

Leader: Noel Worley.

Meet at Fauld Mine at 9.00 AM (Mine entrance at SK182287 on Fauld Lane between Coton in the Clay and Tutbury). Following a safety induction and geological presentation, there will be an underground tour to the production area. Upon arrival back at the surface packed lunches can be taken with discussion time and the opportunity to study some further evaporite sedimentology until approx. 2.00pm. **Safety footwear required**, the mine will provide hard hat, hi-viz vest and other personal protective equipment for the underground visit.

Limited to 11 places only; book in with the Field Sec.

Saturday 27th June: Brymbo Fossil Forest, nr Wrexham (jointly with the BCGS).

Leader: Dr Jacqui Malpas.

Meet at 10.30AM at Brymbo (SJ 296535), detailed directions and map available from Field Sec. A short introduction will be followed by a visit to the heritage area with its blast furnace, forge & foundry and then onto the site for the fossils & their palaeo-environment. There will be an opportunity to view some of the fossils that have been excavated. Participants need stout boots, waterproof clothing and packed lunches. Run under the auspices of the Association of Welsh RIGS Groups (AWRG).

Afternoon, suggest the Minera Lead Mine, Visitor Centre and Country Park (about three miles away), self guided.

Sunday 19th July: The Geology of the Malham Tarn and Malham Cove area

Leader: Alan Diggles.

Meet at 10.00AM at Settle (OS Sheet 98 SD 818638), to examine the effect of the Palaeozoic Inlier, the North Craven Fault and Limestones around Malham. Distance on foot about 4 km, packed lunches, stout boots and wet weather gear needed. Staying on the old A65 into and through the town centre, the meeting point car park is by the side of the main road on the left just before the railway viaduct on the way out of Settle.

A minibus is planned leaving from the Earth Sciences Car Park at Keele at 7.30AM. Cost: minibus £16 plus field fee, [see flier](#) (please return with cheque by 30th May).

Saturday 26th September: Churnet Valley Geotrail (South)

Leader: Dr Richard Waller

Meet at 10.00AM at the Car Park (SK 062432) adjacent to the Ramblers Retreat for two loops of the southern section of the trail, possibly returning to the RR for lunch and then again for tea! For good exposures of the local Triassic sandstones, and the opportunity to visit Toot Hill with its spectacular views of the lower, deeply-incised section of the Churnet valley.

For bookings and further information about the 2009 season of meetings, contact the Field Secretary Gerald Ford , Tel. 01630-673409 or e-mail: g.ford@ukonline.co.uk
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Staffs RIGS Group Launches its Cannock Chase Geotrail

We met up at the car park at Stile Cop on Cannock Chase on 28th February 2009. There were about 38 people present with some 10 members of the NSGGA. Ian Stimpson started by explaining what it was hoped to achieve with today's walk and what the aims of the leaflet are. He also thanked all the people and organisations who had helped with the work. Particular mention was made of Rosie Duncan who had designed the leaflet.



Steve Potter Head of Environment and Countryside at Staffordshire County Council explained that it was unusual for the same group to receive more than one bid but that they were very happy with the results of the previous two bids and they thought that this leaflet would fill a gap in the information available about the Chase. He then cut the tape.

We then moved to a viewpoint next to the car park. From here there were good views over the Trent valley. Ian explained the route that we would be taking. The Triassic being harder, formed the high ground and the softer Carboniferous mudstones and coal the lower ground.

We crossed the road to the next location. Here we examined many of the pebbles from the Kidderminster Formation pebble beds. They ranged in size from 1 cm to about 20 cm. They were all well rounded. The size indicated that the river carrying them was of a high energy and the roundness suggested that they had travelled for a great distance giving time for the corners to be knocked off. Research has shown that they came from the Armorican mountain chain that once existed in northern France. The river that flowed north from the mountains, in a braided river system, was called Budliensis. It crossed the south coast around Budleigh Salterton and flowed north to Leek where it then filled what is now the Cheshire basin. Ian suggested that the pebbles should be marked "made in France", as that is where they came from!



We then walked further up the hill where Richard Waller told us about the geomorphology of the area. The last major ice advance, the Devensian, reached just south of Cannock in north Wolverhampton. The ice did not cover the Chase but flowed around it leaving evidence of its presence. Just to the north of where we were, was the valley between Rugeley and Hednesford. This was probably a meltwater valley with water flowing from an ice-dammed lake around Rugeley. The valley does not have any head but cuts the Chase in two. There are also valleys that show where water has flowed up hill. This can only happen beneath ice cover with water flowing below the ice.

The group moved down the slope. We were asked to note when the ground changed from dry and pebbly to wet and clayey. This was where we moved from the Triassic across an unconformity on to the Carboniferous. The Carboniferous mudstones are generally dark grey to black but close to the unconformity they were a pale yellow. This was due to reaction with the iron rich Triassic above.

As we got to the bottom of the valley we found signs of mining activity, dammed streams occasionally stained red from iron and many depressions representing former bell pits. One of our party wandered off the track and was hastily called back by Ian as the old workings can be dangerous.

Moving up the other side of the valley towards Castle Ring the path again became drier. This showed that we had again passed onto the more porous Triassic. At the side of the path we examined a metre high exposure. This was sandstone with angular fragments of an orange sandstone. This was a breccia and represents an alluvial fan deposit of the Hopwas Formation. It is not mapped on the geological survey map. Above this we moved back into the Kidderminster Formation.

We walked on to the top of the hill to the public house where there was a good spread waiting for us. After enjoying the lunch and the rest we walked out around Castle Ring to get a good view of the valley below.

We could see the line of the Eastern Boundary Fault, which was down thrown to the east but here was marked by high ground of the Triassic. Our route followed the line of the fault which we crossed a number of times as we worked our way down hill. Again the path indicated the Formation that we were on. It was soggy when we were on the Carboniferous mudstones, pebbly on the Kidderminster Formation and sandy when we moved up the sequence on to the Bromsgrove Formation.

The two main coals that outcropped in this area were the Castle Ring to the top and Old Park seam below. Other seams are only seen in the pits below ground. As we got to the bottom of the valley we could see that the stream here was stained a bright orange brown with iron coming out of the mine workings. As we passed over some landscaped tips it was possible to find traces of coal in the waste.

We were able to see the down-thrown Bromsgrove Sandstone against the Kidderminster Formation at the side of the road. The Bromsgrove Sandstone is formed as a meandering river deposit and contrasts markedly with the Kidderminster Formation as it has few pebbles. Nearby in a quarry the less pebbly part of the Kidderminster Formation had been taken out for building stone.



As we climbed back onto the Kidderminster formation and on up towards the car park we passed the remains of Hill colliery, which had, like a number of others, been sunk through the Triassic to get at the coal beneath the Chase.

It was then a fairly short walk back to the car park and the end of a good day's geology that launched the new Cannock Chase Geotrail.

A pamphlet will soon be available on line at www.esci.keele.ac.uk/srigrs where details can be found of the other two trails Hamps and Manifold Geotrail and Churnet Valley Geotrail

David Osborn

The Darwin bi-centenary

"Extract from the Maer Village Darwin bi-centenary programme."

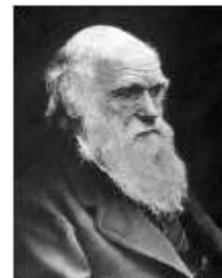
Saturday May 9th 10am – 4pm Sketching and painting in Darwin's Maer with Charles Eldridge. £35.

Walks with Darwin - Walks of 1-2 hours starting from Maer village hall.
Tickets £2 50

- 15th March – Darwin and Geology
- 19th April – Darwin and Maer's Social History
- 17th May – Darwin and Botany
- 14th June – Darwin and Natural History

Victorian Fair Saturday 13th June

The Darwin Lecture Series 10 30 am at Maer Village Hall
Tuesday 15th, 22nd and 29th September by Dr Jane Gledhill, Alan Self
Dr D Amigoni and others.



"Shark Bay to Wave Rock, Landforms of Western Australia"

Elizabeth Hallam gave her Chairman's Address following the AGM on 5th March 2009. Her talk was based on a holiday to Western Australia in 2006 and was illustrated with some fascinating slides.

She first described the overall geology of Western Australia to set the scene and then described the living stromatolites in Hamlin Pool at the South Eastern end of Shark Bay which differ depending on water depth (intertidal and subtidal). Near cousins of stromatolites are the thrombolites found in Clifton Lake, a brackish water lake 100 km south of Perth. Analysis of growth lines in living stromatolites has shown that fossil stromatolites can be used to establish palaeo-latitudes and the number of palaeo-days per year. In the same way as fossil corals are used. They require sunlight to photosynthesise so only grow in daylight and follow the path of the sun. In the Northern Territory sectioned Pre Cambrian fossils 850Ma years old record about 435 days in the year giving a day length of about 20.1 hours.

Shell Beach at Hamlin Pool is some 60 km long and up to 10m deep, it is made up entirely of tiny white bivalve shells. Inland the shells are compacted and the resultant stone is quarried for building stone; it has thermal and sound insulation properties.

At Cervantes in the Nambung National Park loose sand has been blown away to reveal a strange phenomenon known as "The Pinnacles". These pillars are composed of fine grained calcareous sand cemented with secondary calcite. Many of them have a hard rounded calcrete cap. Elizabeth described, with the aid of diagrams, how these were formed.



The most spectacular of the slides was Wave Rock. It is not a rock as such but an overhanging natural wall more than 110 m long and 14 m high on the northern side of a large granite hill known as Hyden Rock.

Excellent descriptions of how the feature was created can be found on www.waverock.com.au/rock.htm and www.hyden.asn.au/geo_explan.htm.

Mike Fereday

Ecton Hill Field Study Association (EHFSA) Resumes Courses

NSGGA has renewed its subscription to the EHFSA and Carol and I attended the AGM on Saturday 21st March 2009 together with Ian Stimpson and Alastair and Zoë Fleming.

Bob Thompson, EHSFA Chairman gave his report which detailed the events that had taken place during the first full season since the re-opening of the EHSFA. Below is an extract from Bob Thompson's report:

"During the last year we have run one day courses for 14 schools and these have been almost equally divided between chemistry and geology. We ask schools to complete an evaluation of the day and the feedback we received was overwhelmingly positive. We have also organised visits for non school groups including the Staffordshire Branch of the Royal Society of Chemistry, Keele University geology undergraduates and several adult geology groups. We have encouraged these visits mainly on the grounds that it will raise awareness of the Centre and our activities, and incidentally may generate small sums that we can use to finance our school courses.

The committee believe that we are in a position to increase the school uptake of our courses. The main concern we have about increasing the number of school visits is tutor availability. We currently have some 17 tutors but only a minority are available on weekdays on a regular basis (5 chemists and 3 geologists). We are therefore actively trying to recruit more tutors and would welcome any suggestions.

Finally, in addition to the developments already mentioned, during the coming year we are hoping to hold a joint meeting with Keele for school science mentors, and there is a possibility that PGCE students will undertake fieldwork at Ecton with primary school pupils as part of a pilot scheme that is currently running in Crewe schools.
R S T 27th February 2009"

The website is now fully operational with video clips of a typical 6th Form Chemistry day and many other interesting features. It is well worth visiting www.ectonhillfsa.org.uk Visits to Ecton Hill are available to non-school groups, anyone wishing to visit should make a booking via the website.

Alastair Fleming proposed that David Thompson should be given Honorary Life Membership of the Association in recognition of the work that he has done since the formation of EHFSA. This was unanimously accepted.

Bill Whitehead, the group archivist, gave a talk about his activities during the past year, one notable event was the 220th anniversary of the commissioning of the Boulton and Watt winding engine in November 1889.

Members in the News

Ian Stimpson

Ian has been editing the NSGGA website since issue no 48 (January 1999). Many thanks Ian for this work, taken for granted by everyone who just expects the website to be there.

OTHER SOCIETIES NEWS

Friday 22nd – Sunday 24th May 2009 Lyme Regis Fossil Festival On The Theme 'Evolution Rocks'

The Festival is being organised as part of the Darwin 200 festivities. See <http://www.risingseas.co.uk/> or contact Dr Claire Old (e mail: claireold@googlemail.com).

East Midlands Geological Society Diary Dates 2009

Indoor meetings take place in lecture theatre B3 of the Biology building at the University of Nottingham.

Saturday 18th April 2009 6.30pm Speaker: Neil Ellis The Geological Conservation Review: its rationale, methods, and the future

Secretary: Mrs Janet Slatter, 100 Main Street, Long Whatton, Loughborough, Leicestershire LE12 5DG
e-mail: j.slatter@zoom.co.uk tel. no. 01509 843297

Black Country Geological Society Diary Dates 2009

Lecture meetings are held at Dudley Museum, St James's Road, Dudley. Phone (01384 815575) 7.30 for 8 o' clock start unless stated otherwise.

Saturday 25th April 2009 (Field meeting)

Abberley Hills and Shavers End Quarry. Possibly led by Peter Oliver of the Hereford and Worcestershire Earth Heritage Trust. Details to be confirmed.

Monday 27th April 2009 (Indoor meeting)

The Galapagos Islands. Speaker: Andy Harrison BCGS

Andy, our field meetings secretary, will talk to us about his recent trip to the Galapagos Islands (Galapagos is Spanish for tortoise), which are so important in Darwin's development of his Evolution by Natural Selection. His meticulous mind was able to discern the sometimes subtle variations between birds and other animals, depending on whichever island they lived. The fructification in his mind of the data he gathered over many years, when he returned to England, eventually led to his theory - despite his reluctance to publish, largely on religious grounds.

▶ Whilst reading the NSGGA's Bulletin (sent to me in my new rôle as editor), I was amused to find some quotations from a Keele University web site listing geology student 'howlers'.

www.esci.keele.ac.uk/resources/howlers.htm

The one that really caught my eye was the 'supper continent of Pangaea'. Maybe not such a howler after all, I thought, as I reflected on all the excellent suppers we've enjoyed in our favourite local balti restaurant (below) which happens to be owned and run by our next door neighbours! ■

Julie Schroeder



Advance Notice: Dudley Rock and Fossil Fair will be held on September 19/20th 2009

For further details contact BCGS Hon. Secretary: Sarah Worton, 158 Oakham Road, Oldbury B69 1QQ
Tel 01384 235946 or email: sarah.worton@atkinglobal.com

Manchester GA Diary Dates 2009

Saturday 2nd May 2009

Venue: Apedale Heritage Centre, Newcastle-under-Lyme Leader: Jane Michael

Time: 10.30am - 4pm

Sunday 7th June 2009

Venue: Sandstones of Overton Hill, Frodsham Leader: Duncan Woodcock

Time: 10.30am - 2pm

Field trips: Contact Marjorie Mosley gmrigs@hotmail.com

Liverpool Geological Society Diary Dates 2009

Meetings are held at Liverpool John Moores University, Byrom Street, Liverpool

Thursday 5th April 2009

Field Meeting to Cheddleton and The Churnet Valley Railway, N Staffordshire with Joe Crossley.

Thursday 21st May 2009 Visit to British Gypsum Mine near Penrith

Saturday 13th June 2009 Field Meeting to Calton Hill and Ashford with Fred Broadhurst

For the latter two meetings contact Tom Metcalfe on 0151 286 9975.

t.metcalfe@blueyonder.co.uk

Hon. Secretary: Joe Crossley email Address: lgsjoecrossley@hotmail.com

NSGGA - Next Committee Meeting

- **Thursday 21st May 2009, at 7.00pm** in the School of Earth Sciences and Geography, Keele University

Staffordshire RIGS Group

For details about the Group and meetings, contact:

SRIGS Secretary: Sue Lawley

c/o Staffordshire Wildlife Trust, The Wolseley Centre, Wolseley Bridge, Stafford ST17 0WT

☎ 01889 880100 email: slawley@staffswt.cix.co.uk

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Vice-chairman: Elizabeth Hallam

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Executive Committee (honorary):

Dr. Colin Exley; Terry Jones; David Thompson; Ted Watkin.

Honorary Life Member: Ann Myatt

Executive Committee (elected):

Dr Lloyd Boardman; Dr Peter Floyd; David Osborn; Janet Osborn; Brenda Kay; Gerald Ford.

Executive Committee (co-opted):

Don Steward, John Reynolds