



**Circular 382  
August 2009**

Registered Charity No: 503617

President: Tim Colman

[www.emgs.org.uk](http://www.emgs.org.uk)

**FIELD MEETINGS**  
**AUTUMN 2009**

**Sunday, 18<sup>th</sup> October - The Geology of the Matlock Gorge Area**

Leader: Lynn Willies

**Sunday, 25<sup>th</sup> October - Afternoon visit to Chatsworth House - PLEASE NOTE CHANGE OF DATE**

Leader: Ian Thomas

**IF YOU HAVE ALREADY BOOKED FOR THIS TRIP BUT CAN NO LONGER ATTEND DUE TO THE CHANGE OF DATE, PLEASE CAN YOU LET IAN SUTTON KNOW STRAIGHT AWAY.**

**PLEASE COMPLETE THE ATTACHED BOOKING FORM FOR THE FIELD TRIPS AND RETURN TO IAN SUTTON.**

**Insurance and Safety**

Members are reminded that the Society has only public liability insurance and that personal accident insurance is a matter for individual members to arrange as they consider necessary. Up to date hard hats are obligatory for all field excursions involving quarries or cliff faces and strongly recommended for all trips. High visibility clothing is sometimes required in working quarries. High visibility tabards can be obtained from GA Enterprises, 126 Fleetside, W. Molesey, Surrey KT8 2NQ at £4.70 incl. pp. Members without suitable hard hats may be refused access to certain sites! Hard hats can be obtained from many Builders' Merchants, Wickes, B&Q Warehouse etc. for about £4.

Any non-members attending field excursions will have to pay a temporary membership fee of £2.00 and all participants are reminded that they must comply with any instructions from excursion leaders or, for example, quarry managers or their employees on Health & Safety issues.

## **INDOOR LECTURE PROGRAMME - 2009/2010**

Saturday, 17<sup>th</sup> October 2009 - 6.30 pm

**Discoveries from Dinosaur Sites on the Isle of Wight**

Speakers: David Martill & Steve Sweetman

Saturday, 14<sup>th</sup> November 2009 - 6.30 pm

**"Charles Darwin (1809 - 1882) - a Mercian 'glacial' Geologist"**

Speaker: Peter Worsley

Saturday, 12<sup>th</sup> December 2009 - 6.00 pm

**"My house fell in a hole - problems with soluble rocks"**

Speaker: Tony Cooper

(Followed by our Christmas Cheese and Wine Evening)

Saturday 23<sup>rd</sup> January 2010 - 6.30 pm

**"A Geotour of Oman - world class geology and a great tourist attraction"**

Speaker: Professor Hugh Rollinson

Saturday 13<sup>th</sup> February 2010 - 6.00 pm

**Presidential Address followed by Annual Dinner.**

Saturday 13<sup>th</sup> March 2010 - 6.00 pm

**Annual General Meeting followed by Members Evening**

Members are invited to make short presentations, of up to 20 minutes, to the Society at the Members' Evening which follows the Annual General Meeting. The instructions are as in previous years: "show us your interests and enthusiasms". This may be a study in geology whether local East Midlands or not, that spectacular geological trip you had on a recent holiday, or indeed whatever turns you on and that you think we would wish to know about! Contributions from amateurs and professionals are welcome, but we particularly would like presentations from the former. Illustrations can be by simple overhead projection, 35mm slides or Powerpoint.

If you want to contribute or just talk about the possibility, please contact Gerry Slavin on  
01629 735 644 or [gsbms@darleyd.fsnet.co.uk](mailto:gsbms@darleyd.fsnet.co.uk)

### **LECTURE VENUE**

Indoor meetings will take place in lecture theatre B3 of the Biology building at the University of Nottingham. If you require to use the lift to B3, please speak to the security attendant who will assist you. B3 is equipped with induction loop hearing assistance. If you are attending meetings or joining a coach at the University of Nottingham, enter from the South Entrance on University Boulevard. Cars

should be parked in the car park on the bend in the road just beyond the security point after Science Road. The entrance to the Biology building is at the right hand side of the rear of this car park.

## AUTUMN FIELD MEETINGS

**Sunday 18<sup>th</sup> October 2009**

### The Geology of the Matlock Gorge area

**Leader: Lynn Willies with Colin Bagshaw**

Meet at 10.30am at the Car Park (SK 297 603) on the A6 adjacent to the new Bus Station and Railway Station at Matlock (near the new Sainsbury's Store and on the new Matlock relief road - do not confuse with Matlock Bath). Local features will be considered until the arrival of the Trans Peak Bus from Derby and Nottingham (leaving Nottingham at 0910, Derby at 0945, arriving Matlock at 1037. Early arrivals by car may wish to find cheaper parking than £4.50 for the day within about a quarter mile. Late arrivals - walk to the top of High Tor (SK 297 589) to join party.

Departure from Matlock Bus Station car park at about 1725, but there should be opportunity for Trans Peak bus users to catch the 1625/1725 departure at the Cable Car bus stop.

Cost: there will be a **£6.00 fee** to cover use of the cable car and entry to the Masson Cavern. If you wish to accompany the leader away from the show-mine route (desirable) you will need to sign an indemnity.

Pre-Reading: T.D. Ford (2001) The Geology of the Matlock Mines, *Mining History* 14:6, and Special Publication EMGS. Map - 1:25000 White Peak OS Outdoor Leisure.

Have with you: Helmets and high-vis jackets and a torch (not required everywhere) and lunch in a small rucksack. Boots or very stout walking shoes, weatherproof clothing capable of brushing against muddy rock. Lunch and drinks may also be obtained at the Masson Cavern Entrance. The party may need to split for the underground section.

### Itinerary:

**Matlock Car Park:** Matlock syncline, crossing of Seven Rakes Vein, Matlock Limestones.

Proceed via **Matlock Park** (floodplain alluvials) to Church Cliffs, Chert, reefs and Ladygate vein.

Continue up **path to High Tor** - moderately steep slope - Views with volcanics and reefs in upper and lower part. Seven Rakes and Ringing Rake veins, course of river and geological.

**High Tor** with near aerial views of geology, landslips, spectacular open rakes, reef or bioherm and unclinal shift to produce valley.

Proceed down to **Cable Car** and up over river Gorge to Heights of Abraham.

**Masson Cavern:** within Great or Bacon Rake, a wrench fault of small displacement which cuts earlier huge system of (eventually) mineralised pipes (Rutland and Masson Caverns) respectively.)

**Black Ox Mine** - within the cavern but off the tourist route. Worked last in the 1950s - shaft up, volcanics, mineralisation (some rarer minerals), galena dissemination in micro-joints in dolomitised limestone, "oak-tree" feature.

**The large cavern,** dolomitisation, paragenetic sequence, large crystals of calcite, way out.

Across **Masson Hill** (easy but hillside footpath walk for half mile each way) via Upper Lava outcrop and major landslip with views of High Tor limestone and Riber gritstone escarpments.

Open Pit working at top of Masson anticline exposes worked-out (c.1980) mineralised pipe between the Upper and Lower Matlock Lavas, with control apparent from wayboards and master joints.

**Return to Cable Car and Matlock Bath.** Choice of use of bus to return home or walk for just over a mile alongside the River Derwent observing features back to Matlock.

**Sunday, 25<sup>th</sup> October 2009**

**Afternoon visit to Chatsworth House**

**Leader: Ian Thomas.**

**This is a repeat of a recent very successful visit to Chatsworth. Please note numbers are restricted and an entrance fee will be charged for entry to Chatsworth House.**

**Meet at 1.45 pm** at the main entrance to the house (North Gate). The visit will be in two parts, one to view the excellent mineral collection of the Devonshire family, and the second to have a tour of the house where there is considerable geological interest in the building and furnishings – see the recent Mercian Geologist article and offprint.

**PLEASE NOTE: If you have already booked for this trip but can no longer attend due to the change of date, please can you let Ian Sutton know straight away on 0115 923 2360 or 07795 211761.**

**INDOOR LECTURES**

**Saturday, 17<sup>th</sup> October 2009 - 6.30 pm**

**Discoveries from Dinosaur Sites on the Isle of Wight**

**Exceptional New Vertebrate Discoveries from Dinosaur Sites on the Isle of Wight**

**Dr Steven C Sweetman**

More dinosaur species have been found on the Isle of Wight than anywhere else in Europe and their history of discovery spans some 180 years. Although most are represented by fragmentary remains rather than skeletons many are very well preserved. In contrast, until recently remains of small animals that must surely have lived with the dinosaurs were virtually unknown and the very small number that had been found were poorly preserved. Did this poor preservation and the apparent paucity of small vertebrate remains accurately reflect fossil abundance and preservation in the island's dinosaur-bearing rocks? If not, what was to be found and what would these fossils tell us about the world in which the dinosaurs lived? These were the questions at the heart of an ongoing research project commenced in 2002 the results of which have been spectacular. Using both arduous and painstaking techniques a remarkable microvertebrate assemblage has been recovered. This has permitted a much better understanding of the ecosystem in which the Isle of Wight dinosaurs lived. It has also shed light on a possibly unique taphonomic pathway leading to the preservation of the majority of the island's Early Cretaceous dinosaur and other vertebrate remains.

**The Pterosaurs of the Isle of Wight**

**Dr David M Martill**

Until recently, the Isle of Wight Cretaceous was known mainly for its abundant and diverse dinosaur assemblages in the Wessex and Vectis formations. Renewed interest in the islands vertebrate fossils, and a keen brigade of collectors have revealed a much more diverse assemblage of vertebrates, among which are clues to a greater diversity of pterosaurs. The first pterosaur remains to be found on the island were scrappy fragments of wing bones, one of which received the name *Ornithocheirus nobilis*. In reality, the specimen is unidentifiable. During the early part of the 20<sup>th</sup> century a few examples of a broad beaked pterosaur were discovered in the Vectis Formation, of an animal now known as *Istiodactylus*

*latidens*, on account of its flat triangular teeth. A recent discovery in the Wessex Formation of Yaverland revealed a new ornithocheirid while processing for microvertebrates has revealed possible ctenochasmatids. A chance discovery of a distinctive azhdarchoid humerus brings to four the number of different pterosaur species on the Isle of Wight.

**Saturday, 14<sup>th</sup> November 2009 - 6.30 pm**

**"Charles Darwin (1809 - 1882) - a Mercian 'glacial' Geologist"**

Charles Darwin was born at 'The Mount' in Shrewsbury, Shropshire on 12<sup>th</sup> February 1809. His illustrious grandfather – Erasmus Darwin (1731-1802) - was born in Elton Hall, Elton, Nottinghamshire and the family line can be traced back to William Darwin (deceased before 1542) of Marton, Lincolnshire. Hence the family were of true Mercian stock.

Darwin's opportunity of sailing in the Beagle was the result of the suicide of Lieutenant Pringle Stokes in 1828 during the first South American surveying voyage of the Beagle (1826-1830). Robert Fitz-Roy (1805-1865) replaced Stokes as commander and in an attempt to control theft by the native Fuegians he took hostages. In order to return the hostages to their native home after two years of 'Christian education' in Britain, Fitz-Roy gained Admiralty approval for a second surveying voyage by the Beagle (1832-1836) and authorization to take a self funded naturalist.

After attending Shrewsbury School, Darwin spent 2 years at Edinburgh University where he gained his first formal geological education by attending a natural history course given by the Wernerian Robert Jameson (1774-1854). He then read for an ordinary BA degree at Cambridge (not theology as is often incorrectly asserted) and during that time became acquainted with Adam Sedgwick, the Professor of Geology. During the summer prior to embarkation on the Beagle, Darwin had some bedrock field mapping training with Sedgwick in North Wales. Fitz-Roy had ensured that a copy of the first part of Charles Lyell's Principles of Geology was in the Beagle library and during the voyage the 2 later published parts were acquired in Montevideo and Valparaiso. Lyell's writings greatly influenced Darwin's approach to field geology.

Darwin became aware of anomalous clasts (erratics) before he left school e.g. the Bellstone in Shrewsbury. In Tierra del Fuego, along the northern shore of the Beagle Channel he observed 'immense glaciers' which calved into the sea creating icebergs. He started to appreciate the differences in landform and sedimentological responses to fluvial and glacial processes. However, it was only after return to Britain that he had the chance to read the then contemporary literature on the developing 'Glacial Theory'. He was clearly impressed by the paper by Jens Esmark (1763-1838) when he came to write his 'Journal and remarks'.

In 1838 he undertook a new field study of the Glen Roy shorelines and argued for a marine origin. In this he was undoubtedly influenced by the Neotectonic marine terraces that he had examined at Coquimbo in central Chile. Later he considered his Glen Roy interpretation as 'his greatest blunder'. In the Pacific he encountered coral atolls and developed his subsidence hypothesis which has withstood the test of time. The heated debate over the postulated glaciation of Britain in 1840 at the Geological Society led him to undertake what was to be his last geological fieldwork in North Wales in 1842. He became one of the first British geologists to embrace the land ice hypothesis although his support for the then conventional wisdom of the 'Great Submergence' accounting for iceberg transport of erratic blocks outside mountainous terrain was retained until the 1860's.

**Saturday, 12<sup>th</sup> December 2009 - 6.00 pm**

**"My house fell in a hole - problems with soluble rocks"**

*(Followed by our Christmas Cheese and Wine Evening)*

(The inspiration both for Alice in Wonderland and Witches in Cheshire?)

Alice fell down- down- down- deep into the earth, following the white rabbit. Curiouser and curiouser she thought, in this underground wonderland the walls are made of sparkly gypsum -  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  (with apologies to Lewis Carroll). Yes, there is a strong connection between gypsum, subsidence, and the life and inspiration of Lewis Carroll. The "Bottomless" pits, collapsing ground and steaming springs that inspired the writer are all linked to evolving gypsum karst and collapsing caves. Gypsum is rapidly soluble and caves formed in it enlarge at an alarming rate causing active subsidence. This gives a planning and engineering headache for the town of Ripon in North Yorkshire, where collapses occur on a regular basis. It also affects developments on the Permian rocks between Doncaster and Darlington and gives rise to numerous sulphate-rich springs.

In Cheshire and Worcestershire, salt springs from natural Halite dissolution are also linked to subsidence and building damage. Place names give clues as to where this is occurring. Roman sites were called Salinae and Medieval places with names endings of wich and wych are indicative of salt springs, many of which are recorded as salt houses in the Domesday Book. More recent brine extraction has left a legacy of linear subsidence lakes or "flashes" running in the directions of the salt works. Modern mapping and the use of Geographic Information Systems (GIS) are helping in the understanding of the distribution and mechanisms of collapse that affect the soluble rocks in the UK.

**Subscriptions**

Subscriptions were due on 1<sup>st</sup> February 2009. If you haven't paid yet, please send your subscription in to the Treasurer as soon as possible. The rates remain the same as last year. Members who do not pay by Standing Order could please consider doing this as it eases the administrative load. Please also consider paying your subscription by way of a Gift Aid declaration. It costs you nothing but benefits the Society considerably and helps to keep our subscription rates down. A blank Gift Aid form and Standing Order Authority are available by request from the Secretary or Treasurer.

Subscription rates are:        £12.00 ordinary  
    £15.00 joint membership  
    £ 5.00 student membership

**Information for Other Societies**

We hold information of lectures and field meetings for other local societies such as the NSSGA, Black Country Geological Society and Leicester Lit & Phil Society. If you would like details of any of these, please contact the Secretary.

**Society Publications**

- (1) **Leicester Building Stones Guide;**
  - (2) **East Midlands Field Guide;**
  - (3) **Sandstone Caves of Nottingham** (new full colour edition) .
- Copies available by contacting the Secretary or at Indoor Meetings.

We are still looking for volunteers please in the Leicester area to help in distributing the Leicester Building Stones Guide. If you can help, please contact the Secretary (details below).

### **EMGS Website**

A plea for past EMGS Field Trip Photographs please for a gallery on the website. Pictures can be e-mailed to [website@emgs.org.uk](mailto:website@emgs.org.uk) or sent to the Secretary.

### **New Members**

Ms Moya Woolley, Thurnby, Leics.  
Mr & Mrs R Johnson, Kedleston, Derby.  
Mr Max Webb, Stonesby, Leicester.  
Dr Michael Taylor, Radcliffe on Trent, Nottingham.

### **Marketing the Society's Publications**

We are still in need of a volunteer to promote the marketing of the Society's publications such as the East Midlands Field Guide, Leicester Building Stones Guide and the Sandstone Caves of Nottingham books. If you have any expertise in this field, or even if you haven't but would like to volunteer to help, please contact the secretary or any other member of Council.

### **The National Stone Centre**

Are looking for volunteers for guiding and other activities on the site at Wirksworth. If you can help, please contact Ian Thomas on 01629 824833 or [ian@nationalstonecentre.org.uk](mailto:ian@nationalstonecentre.org.uk)

### **e-mail addresses**

To minimise postal costs and photocopying charges which amount to approximately £4.00 each year for every member who still receives their Circular by post, we would very much like to send you your Circular by e-mail. If you have not already done so, please send your e-mail address to the Circular Editor, [sue.miles@freethcartwright.co.uk](mailto:sue.miles@freethcartwright.co.uk).

**Please can you also confirm your name and address when sending your e-mail** so we can correlate these details with our membership listing.

**The next Circular will be published in September/October 2009.**

**The next Council Meeting will be held on 9<sup>th</sup> September 2009.**

**Secretary:** Mrs Janet Slatter, 100 Main Street, Long Whatton, Loughborough, Leicestershire LE12 5DG  
e-mail: [janet.slatter@btinternet.com](mailto:janet.slatter@btinternet.com) . tel. no. 01509 843297.

**Treasurer:** Mr Colin Bagshaw, 150 Scalpcliffe Road, Burton-on-Trent, Staffordshire DE15 9AD, e-mail: [Colin.bagshaw@yahoo.co.uk](mailto:Colin.bagshaw@yahoo.co.uk) tel. no. 01283 564520

# EAST MIDLANDS GEOLOGICAL SOCIETY

## BOOKING FORM - FIELD EXCURSIONS 2009

Please book me/us for the following excursions:

Sunday, 18<sup>th</sup> October - The geology of the Matlock Gorge Area

Sunday, 25<sup>th</sup> October - Afternoon visit to Chatsworth House

*(Please delete those you will NOT be attending)*

Name(s): .....

Address: .....

.....

Tel: .....

e-mail address: .....

I/we do/do not have a car available.  
I/we would be prepared to offer transport.

Please send completed booking forms to the Field Secretary,  
Ian Sutton, at 30 Alford Road, West Bridgford, Nottingham NG2 6GJ  
Tel. No: 0115 923 2360 e-mail – [ian.sutton@idsgeo.demon.co.uk](mailto:ian.sutton@idsgeo.demon.co.uk)

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