



**Circular 375
March 2008**

Registered Charity No: 503617

President: John Travis

www.emgs.org.uk

INDOOR MEETINGS **SPRING 2008**

Saturday 29th March 2008 - 2.00pm - 5.00 pm

Joint meeting with the Yorkshire Geological Society at BGS, Keyworth

Saturday 19th April 2008 - 6.30 pm

Midlands Influences on William Smith

Speaker: Peter Banham

FIELD MEETINGS **SPRING/SUMMER 2008**

Sunday 18th May - The little known oilfields of the East Midlands

Leader: Paul Guion

Sunday 1st June - Charnwood Forest

Leader: John Carney (BGS)

Wednesday 11th June - Evening walk: Hoptonwood Stone

Leader: Ian Thomas (Provisional)

Sunday 13th July - Skipton Moor

Leader: Neil Aitkenhead

Wednesday 23rd July - Evening walk: Charnwood Forest

Leader: Keith Ambrose

Saturday 18th & Sunday 19th October - Weekend trip to the Gower

Leader to be announced

SPRING 2008 INDOOR MEETINGS

Saturday, 29th March 2008 - 2.00 - 5.00 pm

Joint Meeting with the Yorkshire Geological Society at BGS, Keyworth **The Erosion of Northern Britain**

NB: The BGS shop will be open from 1.00 - 2.00 pm

2.00 - 2.05 pm *Introduction and YGS business*
Speaker: **Martin Whyte (YGS President)**

2.05 - 2.15 pm *Introduction to talks.*
Development of a predictive landslide tool at Hollin, Hill, Yorkshire
Speaker: **Gareth Jenkyns (BGS)**

The diverse landscapes of Northern Britain are testament to the erosive forces that have shaped them. They range from the high peaks of the Lake District, the North York Moors and the Pennines to the rolling hills of the Yorkshire Wolds. The landscape is drained and downcut by rivers such as the Tees, the Ouse and the Nidd as they meander their way towards the coast. At the coast the landscape of Northern Britain ranges from the high Jurassic cliffs around Whitby, to the low Till cliffs of Holderness, down to the flooded valleys of the Humber and Solway Firth.

The order of the talks for the indoor meeting work their way from the high mountains, down the valley sides and out along the river plains to the coast. Subsequent to tectonic events, the Anglian and Devensian glaciations ultimately shaped the landscape of Northern Britain. They carved out the valleys and dales, and strongly influenced the present-day drainage patterns. Following the retreat of glaciers from Northern Britain, the exposure and removal of support from slopes coupled with a harsh, wet climate resulted in a period of high landslide activity. These landslides are on a scale far larger than any processes occurring today in Northern Britain. The most recent erosive threat to emerge is that of sea level rise and associated coastal erosion. No better is this demonstrated than along the Holderness coast, where coastal recession figures are amongst the highest in Europe.

2.15 - 2.55 pm
Glacial, fluvial and karstic erosion of North-Eastern England.
Speaker: **Anthony Cooper (BGS)**

The erosion of Britain has been largely controlled by a balance of sea level, uplift and climate combined with glacial, fluvial, weathering and karstic processes. The large-scale driving force has been climatic, causing sea level fluctuations of 120m from ice-ages with low sea levels to interglacial periods with high sea levels. Stripping off the mainly Devensian superficial deposits reveals bedrock elevation information that elucidates the pre-Devensian and early Devensian drainage pattern. During and subsequent to the Devensian glaciation, northern Britain was subjected to widespread glacial erosion. This is evidenced by the ice-fluted landscape visible on Digital Elevation Models, glacial striations at the base of the glacial till and the distribution of erratic material. Synchronous with the advancing glaciation, the lowering of sea level caused intense down-cutting of the pro-glacial fluvial systems. The ice advance also blocked many of the pre-glacial fluvial systems causing their diversion into marginal glacial drainage valleys and gorges (such as at Knaresborough and Boston Spa), many of which form part of the current drainage pattern. The drainage from the Devensian ice-sheet has strongly influenced the location of some rivers including the River Ouse, which runs near to where glacial drainage once flowed. Once initiated, this river course has remained in use and eroded into the soft pro-glacial lake deposits in the southern part of the Vale of York. Of small impact compared with the main erosive forces, dissolution of the limestone and gypsum lithologies has resulted in karstic lowering of the landscape. It has also formed subterranean cavities

that collapse to form surface dolines. In recent times, man's use of resources has become a major erosive force that has lowered large areas faster than natural erosion.

2.55 - 3.45pm BREAK

3.45 - 4.15 pm

Landslide distribution and systems on the York 1:50 000 Geological Sheet

Speaker: Claire Foster (BGS)

Recent remapping of the BGS 1:50 000 Geological map of York highlighted that landslides were more extensive across the region than were previously known. The scale and variety of landslides warranted a special *landslide survey* alongside the 'conventional' geological mapping. This study formed part of the ongoing British Geological Survey work into mapping, investigating and recording landslides and landslide systems across the country. The systematic survey of landslides will lead to a better understanding of landslide occurrence, processes and hazards across Great Britain as well as contribute to our understanding of landscape evolution.

Using techniques including Socetset analysis of aerial photographs, analysis of NextMap and field survey, it was possible to identify and describe over 70 new landslides as well as three distinct landslide systems. The study also meant the discovery of large scale landslide features on the Chalk. These are on a scale, previously underscribed away from the coast in Britain and represent the influence of Quaternary processes on the landscape of Northern England.

4.15 - 4.45 pm

Recession of the Holderness coast, East Yorkshire

Speaker: Joseph Quinn (University of Leeds)

The Holderness coastline is located within the East Riding of Yorkshire, where the cliffs are predominantly composed of glacial clay. This stretch of coastline has historically received considerable attention in the published literature due to its high rate of recession, which is known to be amongst the most rapid in Europe. Since the late Nineteenth Century, many attempts have been made to determine accurately the rate and mechanisms of this recession; however, this has resulted in the existence of numerous conflicting accounts. Therefore, a comparison of previous recession rate assessments is presented together with an overview of current research in this region. This discussion continues with an assessment of the manner in which this coastline retreats and the type of landsliding that occurs.

Results of cliff recession monitoring, using Global Positioning Systems (GPS), terrestrial laser scanning, digital photography and Geographical Information Systems (GIS) are displayed, which reveal a predominance of essentially translational landslides in the areas studied. It is shown how the results of these sophisticated monitoring methods can be combined with numerical modelling to gain a greater understanding of the processes involved in coastal recession. Finally, the results of this surveying are compared with published case studies of other coastal areas consisting of glacial or overconsolidated clay cliffs in order to assess similarities.

4.45 - 5.00 pm *Closing Remarks*

Saturday 19th April 2008 - 6.30 pm

Midlands Influences on William Smith

Speaker: Peter Banham MBE (Honorary Research Fellow, Royal Holloway University of London)

The young William Smith (1769-1839) was mightily impressed by the Notts-Derby coalfield; its massive coals, its advanced technology and, equally, its sophisticated financial arrangements. In 1794, Smith had particularly close contact with the budding joint businesses of the Cromford Canal and Butterley

Ironworks (to be) near Ripley which were managed and part-owned (even) by top engineer William Jessop of Newark and his dynamic young assistant Benjamin Outram of Alfreton. Shortly after, Smith also visited young engineer Richard Weldon's recently completed half-scale model of a canal lift or caisson lock at Oakengates on the Shropshire Canal. The events that followed back in the Somerset coalfield suggest that these Midlands experiences impelled Smith too far ahead of the game as it was being played there.

And then, in 1807, Smith's own long-term patron, Sir Joseph Banks FRS, handed a contract for geological mapping in Lincolnshire and Derbyshire to the mathematician John Farey, Smith's first and best pupil and 'Boswell'. Smith's outrage no doubt impelled him to moonlight even harder on his famous geological map of England and Wales and part of Scotland which he published in 1815.

LECTURE VENUES

The meeting on 19th April 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.

The meeting on 29th March will take place at the British Geological Survey, Keyworth, Nottingham.

SUMMER 2008 FIELD MEETINGS

Sunday 18th May 2008 - 9.30 am - 5.30 pm

The Little known oilfields of the East Midlands

Leader: Paul Guion

Meet 9.30 am at the Eric Byne Car Park, next to the Robin Hood pub on the A619 Baslow – Chesterfield Road (**Grid Ref SK 281 722**). Please note that the nearest public toilets are in Baslow about 3 km to the west down the A619.

In the morning, we will visit one or two outcrops of the Crawshaw Sandstone, which is the lowest sandstone of the Westphalian Coal Measures and is the principal East Midlands hydrocarbon reservoir. This includes Birchen Edge, which is about a 1 km ascending walk from the car park on a rough track. Depositional features of this sandstone will be examined, and its origin and suitability as a hydrocarbon reservoir will be discussed.

After visiting outcrops of the Crawshaw Sandstone in Derbyshire, we will drive to Whisby, near Lincoln, where we will find a hostelry for lunch (or consume packed lunches). It is proposed to split the party into two, to visit a working oil rig, engaged in exploration in the area. At around 3.30 we will visit the Dukes Wood Oil Museum and Nature Reserve, near Eakring, Notts <http://www.dukeswoodoilmuseum.co.uk/>

This is on the site of the former Eakring - Dukes Wood oilfield, which made a significant contribution to Britain's energy supplies during the Second World War.

NB The party will need to be restricted to 24 participants in total, allotted on a first-come-first-served basis. Boots and hard hats are obligatory. Given that there are likely to be restrictions on parking, and quite a lot of driving is involved, car sharing is encouraged. The oil rig visit cannot be guaranteed because of operational considerations.

Sunday 1st June 2008 - 10.00 am - 4.30 pm

The Precambrian volcanoes of Charnwood Forest

Leader: John Carney (BGS)

Meeting place: Mt St Bernard Abbey - enter the Car Park by the entrance leading south off Oaks Road (grid reference: SK459164).

Please bring a packed lunch with you.

About 560 million years ago, the English Midlands resembled the modern-day Caribbean island arc, with lines of highly explosive volcanoes surrounded by the sea. On this excursion to the western part of Charnwood Forest we will visit some of the more spectacular products of this activity - the 'Bomb Rocks' of Charnwood Lodge - and will see how these rocks pass upwards into fine-grained sedimentary strata as volcanism waned. The 'high point' is in the afternoon, with a walk up to the top of Bardon Hill where volcanic breccias related to one of the eruptive sites can be examined. The summit ridge overlooks the immense Bardon Hill Quarry, with excellent views of the Triassic unconformity.

Information about the subsequent Field Trips will be included in the next Circular, by which time the provisional dates will also be confirmed.

EMGS Council

At the AGM on 8th March 2008 the following were elected to serve:

President - John Travis;

Vice-President - Ian Thomas;

Secretary - Janet Slatter;

Treasurer - to be announced;

Editor - Tony Waltham.

Council for 2008 - Colin Bagshaw, David Bate, Tim Colman, Peter Gutteridge, Richard Hamblin, Sue Miles, Judy Rigby, Duncan Short, Gerry Slavin, John Wolff,.

Society Publications

(1) **Leicester Building Stones Guide** (new);

(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 looking for volunteers please in the Leicester area to help in distributing the 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 or sent to the Secretary.

Subscriptions

Subscriptions were due on 1st February 2008. 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

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.

New Members

Mr Harry & Mrs Margaret Shingleton, Wessington, Derbyshire
Ms Elizabeth Mochor, Annesley, Nottingham
Mrs Margaret White, Littleover, Derby.
Mr Tom Collins, Shard End, Birmingham
Mr John Williams, West Bridgford, Nottingham

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

e-mail addresses

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.

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 May.

The next Council Meeting will be held on 6th May 2008.

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

Treasurer:

EAST MIDLANDS GEOLOGICAL SOCIETY

BOOKING FORM - FIELD EXCURSIONS 2008

Please book me/us for the following excursions:

Sunday 18th May - The little known oilfields of the East Midlands

Sunday 1st June - Charnwood Forest

Wednesday 11th June - Evening walk: Hoptonwood Stone

Sunday 13th July - Skipton Moor

Wednesday 23rd July - Evening walk: Charnwood Forest

Saturday 18th & Sunday 19th October - Weekend trip to the Gower

*(Please delete the trips 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.

I/We would like to purchase High Visibility Tabards at a price of £3.00 each – PLEASE ENCLOSE A CHEQUE for the appropriate amount made payable to “East Midlands Geological Society”

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
