

A Registered Charity  
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Circular 532



# YORKSHIRE GEOLOGICAL SOCIETY

President: John Powell Ph.D.

## MID JURASSIC DINOSAUR WORLD AND FIELD EXCURSION ON THE WILLIAM SMITH TRAIL & WOLDS METEORITE IMPACT SITE



*Scarborough Formation  
at Hundale Point*

SATURDAY SPEAKERS: JIM RIDING, MIKE ROMANO, JANE MEE  
& BOB SPICER

SUNDAY FIELD TRIP LEADER: PETER ROBINSON

1400 TO 1630 SATURDAY 30TH SEPTEMBER 2006  
UNIVERSITY OF HULL, SCARBOROUGH CAMPUS, SCARBOROUGH

1000 TO 1500 SUNDAY 1ST OCTOBER 2006  
WILLIAM SMITH TRAIL & WOLD METEORITE IMPACT SITE

## THE MID JURASSIC DINOSAUR WORLD

- 14.00-16.30      SATURDAY 30TH SEPTEMBER 2006  
University of Hull at Scarborough Campus, Scarborough
- 14.00-14.05      Introduction and Society Announcements  
John Powell, President
- 14.05-14.40      A Review of the Ravenscar Group (Middle Jurassic) of the Yorkshire Basin  
Jim Riding (British Geological Survey, Keyworth)
- 14.40-14.50      Middle Jurassic Dinosaurs of the Cleveland Basin - Where are the Tracks Going?  
Mike Romano and Martin Whyte (University of Sheffield)
- 14.50 to 15.25      Tea and Coffee
- 15.30-15.45      The Rotunda Museum Project update  
Jane Mee (Scarborough Museums)
- 15.45-16.20      The World of the Mid-Jurassic: Plants, Dinosaurs and Climate  
Bob Spicer (Centre for Earth, Planetary, Space and Astronomical Research  
(CEPSAR). The Open University)
- 16.20 -16.30      Closing remarks
- 1000-14.30      SUNDAY 1ST OCTOBER 2006
- 1000-14.30      Field Trip: William Smith Trail & Wolds Meteorite Impact Site



## A REVIEW OF THE RAVENSCAR GROUP (MIDDLE JURASSIC) OF THE YORKSHIRE BASIN

James B. Riding, British Geological Survey, Keyworth, Nottingham NG12 5GG.

The Ravenscar Group is a complex paralic succession of Aalenian to Bathonian age, approximately 240 m thick, which is confined to the Yorkshire Basin. It is superbly exposed in coastal outcrops from Whitby to Scarborough and is broadly coeval with other Mid Jurassic paralic successions in northern Britain, i.e. the Great Estuarine Group of Skye and the Brent Group of the Northern North Sea. The Group is underlain by the Dogger Formation, which is a relatively thin, ferruginous unit that is heterolithic, dominated by sideritic sandstone. The Ravenscar Group is subdivided into the Saltwick, Eller Beck, Cloughton, Scarborough and Scalby formations. The Eller Beck and Scarborough formations, and the Lebberton Member of the Cloughton Formation, are marine; the remaining units are all non-marine. The non-marine strata were originally interpreted as estuarine, but the present consensus is that these beds represent deltaic and alluvial plain depositional settings. The three marine intervals of the Ravenscar Group and the Dogger Formation are all overlain by sediments characteristic of small prograding deltas that eventually coalesced into extensive alluvial plains. These alluvial plains were close to sea level, hence were susceptible to marine influence. The youngest formation, the Scalby Formation, exhibits the least marine influence. During the early Callovian, the sea transgressed the Yorkshire Basin from the east, depositing the Cornbrash Formation onto an erosion surface in the Long Nab Member of the Scalby Formation. The only unit in the Ravenscar Group that yields ammonites is the Scarborough Formation; this unit ranges from the Sauzei to the Humphriesianum chronozones. The biostratigraphy, sedimentology and sequence stratigraphy of the Ravenscar Group will be discussed, and correlations with the Brent Group of the northern North Sea reviewed.



*The type section of the Scarborough Formation at Hundale Point, Hundale near Cloughton. The massive sandstones at the top of the succession are the Moor Grit Member of the Scalby Formation*

## MIDDLE JURASSIC DINOSAURS OF THE CLEVELAND BASIN - WHERE ARE THE TRACKS GOING?

Mike Romano and Martin Whyte (University of Sheffield)

It is now over 20 years since we started working on dinosaur tracks from the Middle Jurassic of the Cleveland Basin, Yorkshire, and three years after our review paper in the *Proceedings*. This presentation looks at how far we have come, by selecting a number of case studies. Fundamental to any palaeontological research is a firm foundation

in taxonomy – in this case **ichnotaxonomy**.

The speakers' view on the procedure of naming fossil tracks will be discussed, and an example from the literature will be given of ill-practice. Essential to an ichnotaxonomic framework is a full understanding of **preservation**; only then is it possible to determine whether track dimensions are truly representative of foot size before any conclusions may be drawn regarding animal size, speed of locomotion or trackway gauge.

Next we shall briefly investigate the identification of dinosaur **communities**; surely the ultimate aim of any palaeontologist or (in this case) ichnologist, yet an approach that is not without its problems when dealing solely with tracks. A penultimate case study into **behaviour** will demonstrate how locomotion may be affected by differences in substrate. Finally, a brief look into the future, to see what directions dinosaur track research in Yorkshire is likely to go.



*Footprint.*

## THE WORLD OF THE MID-JURASSIC: PLANTS, DINOSAURS AND CLIMATE

Bob Spicer (Centre for Earth, Planetary, Space and Astronomical Research (CEPSAR). The Open University)

The rocks and fossils of Yorkshire have provided the most detailed and comprehensive insight that we have into the Mid-Jurassic world. Abundant interleaved marine and terrestrial sediments provide rich sources of data for reconstructing both the land and sea environments at a time when Yorkshire was at a latitude of around 30°N. The richness of the fossil floras and the quality of their description influenced Jurassic palaeobotany worldwide to such an extent that all floras of that age were described in terms of the plants found at places such as Hasty bank, Cloughton Wyke and Cayton Bay, and the concept arose that all Jurassic vegetation was globally uniform. This concept has since proved to be something of an exaggeration and Jurassic floras worldwide are now being used to build up a complex picture of landscapes and climates with relevance to our future under a global warming situation free of polar ice, high atmospheric carbon dioxide concentrations and low latitude deserts not unlike that of 150 million years ago. Using fossil data, statistics, computer graphics and models the Yorkshire Jurassic environments are pieced together and explored in a global context.

## THE WILLIAM SMITH TRAIL ACROSS SCARBOROUGH AND VISIT TO THE MONUMENT OF THE WOLDS METEORITE IMPACT SITE.

**Leader:** Peter Robinson

**Meet:** 10.00 on Sunday 1st October 2006

**Place:** Rotunda Museum, Scarborough (2 hour disc parking available on the Esplanade, or undercover fee parking on nearby Spa Bridge underground car park, opposite Rotunda) for the William Smith trail, followed by a visit to the meteorite site at Wold Newton Cottage.

Members and their Guests to meet at the Rotunda Museum, Scarborough for a 10 am start. This field trip has been organised for the beginner to informed amateur in mind.

### **Programme:**

- 10.00 Meet Rotunda Museum to start William Smith trail to Castle Headland
- 12.00 Transfer by car from the Rotunda to Wold Newton Cottage (GR SE 041 724) map provided.
- 12.45 Wold Newton Cottage for picnic lunch in the grounds
- 13.30 Visit the site of the Wold Meteorite impact and monument
- 14.30 Depart for home

**Detail:** The William Smith trail is a comfortable walk through the town of Scarborough taking in several sites of significance to the life and work of William Smith. These include the site of the Long Room where Smith gave his lectures, the area of Bar Street where he lived, Chapman's Yard and Waterhouse Lane where he provided water from Springhill Close, through the Old Town to the Castle Hill exposures where he measured the Castle Hill fault using the Cornbrash and along Marine Drive to view examples of the fossil fauna of the Hambleton Oolite.

The Wolds Meteorite, weighing in at 56lb and measuring up to 30 inches in length, fell to Earth at this site near Wold Newton on 13th December 1795. It heralded a change in thought at the time that nothing could penetrate the Earth's atmosphere from outer space. A monument was erected a few years later by Edward Topham, in memory of the impact.

**Safety:** Stout footwear, waterproofs and warm clothing are recommended. There are no steep gradients and a maximum of 2 km of walking throughout the day.

It is recommended to bring a packed lunch for a picnic at Wold Newton Cottage.

Contact Peter Robinson 01723 864511.

## A WORD FROM THE PRESIDENT

Throughout the summer Council have been working hard on a number of fronts. As I write, two important publications are rolling off the press. The first is a the colourful YGS Poster and Flyer aimed at getting people involved in the geology of the region and, of course, recruiting new members to the Society. It doubles as poster and a folded flyer, so please collect some copies at one of our meetings for display at your colleges, local museums, libraries, work place and schools - the poster/flyer is also available from Circular Editor, Keith Park at the address on the back page. *We need your help in recruiting new members, so please help in distributing the flyers as widely as possible.* The second publication is the long awaited field guide: *'Yorkshire Rocks and Landscapes – Third Edition'*, which has been out of print for many years. Following on from the launch, in 2004, of the second edition of the sister field guide: 'Northumbrian Rocks and Landscapes', we expect the Yorkshire field guide to be a big seller as it must rank as the prime field guide aimed at beginners and experts, alike, on the fascinating geology of our region. The latest edition has been revised, with thanks to the contributing authors and Colin Scrutton, my co-editor. Copies are available directly from me at the BGS and at our meetings (see enclosed leaflet for details). Again, please help us by spreading the word!

Council is also busy planning the programme for 2007, which is being organised closely with the Geological Society of London to coincide with their bicentenary celebrations. The YGS will be organising our meetings around the theme of geological heroes associated with northern England and the exciting developments in our science stemming from their important advances.

The summer break from indoor meetings was more than made up for by our excellent field meetings – with, as I write, Peter Rawson's Speeton Clay excursion still to come on 10th September. The Society was involved with Yorkshire Geology Month (YGM) in May, which was deemed a great success; Trevor Morse contributed to YGM by leading an excursion to the varied lithologies and palaeoenvironments of the Dufton Pike area. There were many events in the region - I was able to attend an interesting urban geological excursion to Sheffield Cemetery led by Peter Kennett who described both the geology of the building stones and tombs, and the architectural/social history of the site that includes monuments to many of the great Victorian entrepreneurs of the city. On a fine sunny day in June, with excellent views across the Pennines, Colin Waters, Ian Chisholm and Tony Benfield led a fascinating day on the sedimentology of the Millstone Grit, including the Huddersfield White Rock. Their recent studies have highlighted major fluvial channelling and pro-delta turbidite successions in the Glossop area, soon to be published in the *Proceedings*. The coastal field excursion to Flamborough Head, led by Mike Horne, provided an opportunity to visit the famous Sewerby buried cliff, critical to our understanding of the Quaternary history of northern England.

Finally, I look forward to seeing you at the Scarborough meeting on 30th September where the topics will include the floras, palaeoenvironments and faunas of the Jurassic dinosaur world.

John Powell

## MUSEUMS IN THE YGS REGION

There are a large number of museums in the YGS Region, many of which curate nationally and regionally important geological collections (see for example the section on museums in the Society's publication *Yorkshire Rocks and Landscape*). However, the management and funding of museums is complex and has undergone important changes in recent time. Furthermore, some of the largest and, geologically, more important museums have undergone, or are in the process of, change in their fabric and exhibition space and in staff resources.

It is a continuing source of concern to the Council of the Society that funding for some important museum functions has been reduced, potentially affecting the curation of geological collections, and related staffing, public access and research facilities. It is also evident that it is not all bad news, and funding has been sourced for some exciting new developments, for example the restoration of the Rotunda Museum at Scarborough. If our region is to continue to enjoy the benefits of current museum resources it is clearly important that the general public, with our members to the fore, should feel confident to access these resources and to make full use of the facilities on offer.

In response to this, Council proposes to initiate contacts with local museums, by nominating members who will liaise with the appropriate section of each museum and produce a brief report on the current status of geological collections and related facilities, to be published as a regular series of articles in the *Circular*. If you feel you can contribute to this initiative through liaison with your local museum, please contact the President as the point for coordination.

We start the series of articles in this *Circular* with the following report on Leeds Museum prepared by Teresa Graham.



### LEEDS MUSEUM: A GEOLOGICAL COLLECTION ON THE MOVE

The Leeds Museum closed on its old site in 1999 and is in the process of relocation. The museum holds an extensive collection of some 25,000 geological specimens including metals in their natural state, many minerals and fossils, and representatives of most rocks types from around the world, as well as plenty of important Yorkshire specimens, for instance ventifacts.

Unfortunately, Leeds Museum is currently without a geological curator following the retirement of Jim Nunney, and the collection is being looked after by biologist Clare Stringer. Jim was a mineralogist and consequently the mineral collection is extremely well recorded and documented. The palaeontological specimens are less

well documented, and this is an area where Leeds Museum would welcome any help. If any of our members with a palaeontological persuasion and are looking for a project, Clare would be delighted to hear from you.

As with many of the Leeds Museum collections the entire geological collection is currently in storage at the Leeds Museum Sovereign Street store. However, this doesn't make the collection unavailable. Clare stressed that anyone wishing to view any part of the collection is very welcome - it is there to be used. For instance, the specimens in the collection are an ideal reference for anyone wanting to identify their finds.



The new Leeds Museum is due to open in 2008 on Millennium Square in the centre of the city where the best geological specimens will be exhibited. Those specimens not on show will be held at the Discovery Centre, due to open in 2007 at Clarence Dock close to the Royal Armouries. The purpose-built Discovery Centre will be a centre for learning and discovery, working with schools, universities, researchers and anyone with an interest in geology and natural history. Work has already started on packing up the collection ready for its move in next year, but by March it will be fully accessible in its new home.



Anyone interested in viewing the collection should contact Clare Stringer on 0113 214 6526 or by e-mail at [Clare.Stringer@leeds.gov.uk](mailto:Clare.Stringer@leeds.gov.uk)

Teresa Graham

## 200TH ANNIVERSARY OF THE GEOLOGICAL SOCIETY OF LONDON - 2007

### WHAT HAVE BEEN THE MAJOR CONTRIBUTIONS OF THE YORKSHIRE GEOLOGY SOCIETY'S REGION TO INTERNATIONAL AND NATIONAL ADVANCES IN GEOLOGY?

Patrick J Boylan, Web Editor, YGS, and Committee Member, HOGG (History of Geology Group)

Next year, 2007, will see a great many national and local celebrations to mark the 200th anniversary of the Geological Society of London, the world's first national geological society. So this is perhaps a good time to review the history and progress of geology over these two centuries, and in our case to consider the wider contribution of Yorkshire and the wider Yorkshire Geological Society region to the development of geology.

So far as I am aware there has only ever been one published attempt to grade British geological advances in terms of their longer-term national and international significance. This was in the book *The History of British Geology: A Bibliographical Study* by John Challinor published in 1971 (Newton Abbot: David & Charles). Though long out of print this hardback was printed and sold in large numbers at the time, and is widely available through the second-hand trade. At the end of August 2006 the Web index to the current stock of thousands of booksellers around the world [www.abebooks.co.uk](http://www.abebooks.co.uk) listed no less than 42 copies at prices ranging from £4.75 (to an astonishing £73.08!).

Though originally from Staffordshire, Challinor (1895–1990) spent most of his career in the Geology Department at Aberystwyth. Over a period of 40 years or more he reviewed and evaluated very many thousands of geological books and papers relating to Britain published between 1538 and 1969, and in his 1971 book he identified just 659 of these as especially important and influential at the national and international level. Of John Challinor's key British research publications, just 36 relate directly to the geology of Yorkshire and the nearby parts of northern England that have traditionally fallen within the working "territory" of the Yorkshire Geological Society over the years, and these are listed below.

It would be good to have a "virtual" debate on possible gaps in Challinor's original list, and also to propose the additions that should be made using the same criteria to represent contributions relating to our region made to international and national geology over the 36 years since Challinor's cut-off date of 1969.

I will be very happy to post contributions and discussion on the Society's website [www.yorksgeolsoc.org.uk](http://www.yorksgeolsoc.org.uk) and no doubt Keith Park, our Circular Editor, will be happy to include a selection of the suggestions in the Circular in due course.

Please send your comments and suggestions to me either by e-mail at: [web@yorksgeolsoc.org.uk](mailto:web@yorksgeolsoc.org.uk) or by post to Patrick Boylan, 2a Compass Road, Leicester LE5 2HF.

#### JOHN CHALLINOR'S LISTINGS

- Abbreviations:** *Mem. Geol. Surv.:* Memoirs of the Geological Survey  
*Proc. Geol. Assoc.:* Proceedings of the Geologists' Association  
*Proc. Yorks. Geol. Soc.:* Proceedings of the Yorkshire Geological Society  
 QJGS: Quarterly Journal of the Geological Society  
*Trans. Geol. Soc.:* Transactions of the Geological Society  
 \*\* Author known to be Yorkshire born, a long-term resident in the region, or a former YGS Honorary Officer

- William Buckland, 1817. Description of an insulated group of rocks of slate and greenstone on the east side of Appleby [the first description of the Cross Fell Inlier], (*Trans. Geol. Soc.* Vol. 4, pp. 105 - 116)
- William Smith\*\*, 1819-24. *A New Geological Atlas of England and Wales* [of county maps, but including four sheets for Yorkshire], (London).
- William Buckland, 1823. *Reliquiae Diluvianae* [with report on Kirkdale Cave as its centrepiece] (London: John Murray)
- John Phillips\*\*, 1829. *Illustrations of the Geology of Yorkshire Vol.1: The Yorkshire Coast* (York: Wilson).
- William Smith\*\*, 1832. *Stratification in Hackness Hills scale 6 inches to one mile* [Map] (London)
- Adam Sedgwick\*\*, 1835. Introduction to the general structure of the Cumbrian Mountains (*Trans.Geol.Soc.* 2nd Series vol. 4(2): 383-407)
- John Phillips\*\*, 1836. *Illustrations of the Geology of Yorkshire Vol.2: the Mountain Limestone District* (London: John Murray)
- Adam Sedgwick\*\*, 1842 - 1853. *Letters on the geology of the Lake District* (in J.Hudson's Complete Guide to the Lakes, (various editions 1842 to 1853) (Kendal: Hudson)
- Adam Sedgwick\*\*, 1845 - 1848). [Series of four papers on the geology of the Lake District] (*QJGS* vol. 1: pp. 442 - 450; vol. 2: pp. 106 - 131; vol. 3: pp. 133 - 164, & vol. 4: pp. 216 - 225)
- Henry C. Sorby\*\*, 1851. On the microscopical structure of the Calcareous Grit of the Yorkshire coast. (*QJGS* vol. 7: 1 - 6)
- Henry C. Sorby\*\*, 1858. On the microscopic structure of crystals, indicating the origin of minerals and rocks. (*QJGS* vol. 14: pp. 453 - 500)
- JC Ward, 1875-1876. The granitic, granitoid, and associated metamorphic rocks of the Lake-district (*QJGS* vol. 31: pp. 568 - 602; vol. 32: pp. 1 - 34)
- JF Blake & R Tate, 1876. *The Yorkshire Lias* (London: Van Voorst)
- JC Ward, 1876. *The geology of the northern part of the English Lake District* (*Mem. Geol. Surv.*)
- AH Green, 1878. *The geology of the Yorkshire coalfield* (*Mem. Geol. Surv.*)
- George W Lamplugh\*\*, 1889. On the subdivisions of the Speeton Clay (*QJGS* vol. 45, pp. 575-618)
- Alfred Harker\*\* & J Marr, 1891-93. The Shap Granite and the associated igneous and metamorphic rocks (*QJGS* vol. 47: 359-371; vol. 49: 60 - 179)
- George W Lamplugh\*\*, 1891. On the Drifts of Flamborough Head [including the Sewerby Buried Cliff] (*QJGS* vol. 47: pp. 359-371)
- Alfred Harker\*\*, 1894-95. Carrock Fell: a study in the variation of igneous rock-masses (*QJGS* vol. 50: 311-337; vol. 51: 125-148)
- George W Lamplugh\*\*, 1896. On the Speeton series in Yorkshire and Lincolnshire (*QJGS* vol. 52: 179-220)
- T McK Hughes, 1901-8. Ingleborough (*Proc. Yorks. Geol. Soc.* vol. 14: 125-150 & 323-343; vol. 15: 351-371; vol. 16: 45-74, 177-196 & 253-320)
- Percy F Kendall\*\*, 1902. A system of glacier lakes in the Cleveland Hills (*QJGS* vol. 58: 471-569)
- AH Rastall, 1910. The Skiddaw granite and its metamorphism (*QJGS* vol. 66: 116-141)
- CT Trenchmann\*\*, 1915. The Scandinavian Drift of the Durham coast (*QJGS* vol. 71: 53-82)
- JE Marr, 1916. *The Geology of the Lake District* (Cambridge: University Press)
- A Gilligan\*\*, 1920. The petrography of the Millstone Grit of Yorkshire (*QJGS* vol. 75: 251-294)
- WS Bisat\*\*, 1924. The Carboniferous goniatites of the north of England and their zones (*Proc. Yorks. Geol. Soc.* vol. 20: 40-124)
- RGS Hudson\*\*, 1924. On the rhythmic succession of the Yoredale series in Wensleydale (*Proc. Yorks. Geol. Soc.* vol. 20: 125-135)
- Percy F Kendall\*\* & H Wroot\*\*, 1924. *The Geology of Yorkshire* (2 vols.) (Leeds: privately published)
- CT Trenchmann\*\* 1925. The Permian formation in Durham (*Proc. Geol. Assoc.* vol. 36: 135-145)
- W Gibson, 1926. The concealed coalfield of Yorkshire and Nottinghamshire (*Mem. Geol. Surv.*)
- Frederick J Shotton, 1935. The stratigraphy and tectonics of the Cross Fell Inlier (*QJGS* vol. 91: 639-704)

Kingsley Dunham\*\* & CJ Stubblefield, 1945. The stratigraphy, structure and mineralization of the Greenhow mining area, Yorkshire (*QJGS* vol. 100: 209-268)

RGS Hudson\*\* & G Cotton, 1945. The Lower Carboniferous in a boring at Alport, Derbyshire (*PYGS*, vol. 25: 254-330)

Dorothy H Rayner\*\*, 1953. The Lower Carboniferous rocks in the north of England: a review.

(*PYGS* vol. 28: 231-315) [This is cited by Challinor in his commentary on the history of Lower Cretaceous studies, but is missing in the chronological listing]

Dorothy H Rayner\*\*, 1967. *The stratigraphy of the British Isles* (Cambridge: University Press).

## FORTHCOMING YGS EVENTS

28th October 2006	Palaeontology: A tribute to Professor John Neale	Hull (joint meeting with Hull GS)
25th November 2006	AGM, Presidential Address & Annual Dinner	York

## REVIEWERS NEEDED

We are currently looking for members of the Society to review publications that are sent to us from time to time. If you are interested in reviewing one of these publications we have for review *The Palaeogene Volcanic Districts of Scotland: 4th Ed. Published by BGS, 214pp, 180 x 225mm. Price £18 from BGS.* The review will be published in the YGS circular. Reviewers are entitled to keep the publication once the review has been completed. If you are interested please contact Keith Park, contact details on reverse of this circular.

## REPORT OF FIELD MEETING - SEWERBY CHALK AND BURIED CLIFF LED BY MIKE HORNE - SATURDAY 29TH JULY 2006

Nine members and guests attended the field meeting.

At the bottom of Sewerby Steps the leader explained some of the problems with Chalk biostratigraphy. In the past the base of the *binodosus* Zone had been placed just above or near the top of the cliff at Sewerby. Recently specimens of the zonal ammonite *Discoscaphites binodosus* had been found on the wave-cut platform near the Steps implying that the base of the zone is at least 10 metres lower than previously recognised.

As the group walked towards the Buried Cliff a variety of erratics were seen, including a large boulder of Shap Granite. There was a discussion on the amount of recycling of the erratics that has taken place over successive glaciations. Specimens of Chalk sponges and *Echinocorys* were seen and collected from the loose blocks.

The exposure of the Buried Cliff deposits has been poor in recent years due to slumping of and down-wash from the overlying till, although somebody had recently dug out an exposure of the base of the raised beach and a section through the overlying sands. The leader told the party about on-going research by members of the Hull Geological Society to investigate the Quaternary deposits at Flamborough.

Although the group had only walked a short distance there was ample geology to maintain interest for two hours.

Martin Whyte proposed a vote of thanks to the leader on behalf of the Society.

## CORRESPONDING SOCIETIES

Contact society representatives for the latest information.

### CRAVEN & PENDLE GEOLOGICAL SOCIETY

Contact: Paul Kabrna e-mail: paul\_kabrna@hotmail.com or www.cpgs.org.uk/  
(usual meeting place for indoor lectures: Barden High School, Burnley)

Field Meeting: Early Carboniferous geology of the Pendle Hill area. Saturday, 23rd September 2006

Leaders: Paul Kabrna (CPGS) and Hed Hickling (CPGS).

This is a joint meeting with the Oldham Geological Society

### CUMBERLAND GEOLOGICAL SOCIETY

Contact: Nigel Courtman, tel. 01229 861 478 or www.cumberland-geol-soc.org.uk

"The mighty H<sub>2</sub>O: how the Earth moves for water" Wednesday, 15th November 2006

Speaker: Dr Chris Arkwright (OU + Manchester University)

Friends Meeting House, Keswick

Members Evening Wednesday, 6th December 2006

Friends Meeting House, Keswick

### EAST MIDLANDS GEOLOGICAL SOCIETY

Janet Slatter, tel. 01509-843.297; e-mail: sec@emgs.org.uk or www.emgs.org.uk

(usual meeting place for indoor lectures: Lecture Theatre B3, Biological Sciences Building, University of Nottingham)

Ice Age rivers and archaeology: Saturday 21st October 2006

The National Ice Age Network in the East Midlands

Speaker: Dr Mark Stephens (Project Officer for the National Ice Age Network, University of Leicester)

Start: 6.30pm

Student tours to The USA: Saturday 11th November 2006

the geology of the Sacramento and Guadalupe Mountains, Texas and New Mexico

Speaker: Dr Tony Dickson (University of Cambridge)

Start: 6.30pm

The artful jobber: Saturday 9th December 2006

Henry de la Beche and the early years of the Geological Survey

Speaker: Dave Bate (British Geological Survey)

Start: 6.30pm

**HULL GEOLOGICAL SOCIETY**

Mike Horne. Tel: 01482 346 784 or e-mail: m.j.horne@hull.ac.uk or [www.go.to/hullgeolsoc](http://www.go.to/hullgeolsoc)  
 (Usual meeting place for indoor lectures: Department of Geography, University of Hull, at 7.30 pm.  
 N.B. for security reasons the door is locked at 7.40pm)

**Flamborough research group - fieldwork** Sunday 8th October 2006  
 Telephone 01482 346784 for further information.

**Geo-Archaeology of Wold Churches** Thursday, 14th October 2006  
 Speaker: Richard Myerscouch

**LEEDS GEOLOGICAL ASSOCIATION**

Anthea Brigstocke (General Secretary). Tel: 01904 626 013: E-mail: [abrigstocke@hotmail.com](mailto:abrigstocke@hotmail.com) or  
[www.leedsgeolassoc.freeserve.co.uk](http://www.leedsgeolassoc.freeserve.co.uk) (usual meeting place for indoor lectures: Mathematics & Earth Sciences,  
 University of Leeds)

**Residential Field Meeting in the Isle of Man** Friday, 6th - Sunday, 9th  
 October 2006

**The life cycle of an oil company in Eastern England** Thursday 12th October 2006  
 Speaker: Dr Tony Hodge, Roc Oil, Lincoln

**LEICESTER LITERARY & PHILOSOPHICAL SOCIETY**

Chairman: Mark Evans; Tel. 0116 225 4904, e-mail: [Mark.Evans@leicester.gov.uk](mailto:Mark.Evans@leicester.gov.uk), [www.charnia.org.uk/](http://www.charnia.org.uk/)  
 (usual meeting place for indoor lectures: Department of Geology, University of Leicester)

**Visit to Museum of Natural History, Oxford** Saturday October 21st 2006  
 Leader: Derek Siveter (Oxford University).  
 An opportunity to see many of the scientific collections of the university.

**MANCHESTER GEOLOGICAL ASSOCIATION**

Jane Michael. Tel: 0161 366 0595, e-mail: [jane.michael1@tesco.net](mailto:jane.michael1@tesco.net) or [www.mangeolassoc.org.uk](http://www.mangeolassoc.org.uk)  
 (usual meeting place for indoor lectures: Williamson Building, Department of Geology, University of  
 Manchester)

**Ediacaran Fossils of Australia and Newfoundland:  
 the first animals or a failed experiment?** Wednesday, 11th October 2006  
 Speaker: John Nudds

**Metamorphism and Metamorphic rocks** Saturday 11th November 2006  
 Speakers: Giles Droop, Kate Brodie, Prof J Wheeler, Bob Cliff

**Introduction to Terms and Concepts**  
 Dr. Giles Droop, University of Manchester Deformation-Metamorphism Relationships,  
 Dr. Kate Brodie, University of Manchester Subduction-Zone Metamorphism or Metamorphism in  
 the Alps,  
 Professor John Wheeler, University of Liverpool Dating Metamorphism, Dr. Bob Cliff, University of Leeds

**NORTH EASTERN GEOLOGICAL SOCIETY**

Frank Trowbridge. Tel: 01642 582 786, e-mail: frank.trowbridge@care4free.net or  
www.northeast-geolsoc.50megs.com

**Excursion: Beadnell****Saturday 30th September 2006**

Leader: Ken Patterson. Meet 10.00 hrs at the public car park in Beadnell.

This coastal trip will enable us to see the Yordale Sequence, Middle Carboniferous limestones and more. Be prepared to have your thinking cap on. Walking boots, waterproofs and a packed lunch required. As this section is tide dependent we will probably have a late lunch.

**Iron in clay minerals: a curse or a cure?****Friday, 17th November 2006**

Dr. Claire Fialips, University of Newcastle

**NORTH STAFFORDSHIRE GROUP OF THE GEOLOGISTS' ASSOCIATION**

Eileen Fraser Tel: 01260 271505 email: fraser@fraserco.co.uk or www.esci.keele.ac.uk/nsgga/  
(usual meeting place for indoor meetings: School of Earth Sciences and Geography, University of Keele)

**National Stone Centre, Wirksworth****Sunday 1st October 2006**

Leader: Dr Fred Broadhurst.

Start: 10.30am at the National Stone Centre, Grid ref: SK287552.

Walk distance about 9 miles in total, mostly on the High Peak Trail. Geology, features of the Lower Carboniferous Limestone, including reefs, fossils, sedimentology, dolomitization and the cover of the Upper Carboniferous Ashover Grit. Returning to the Stone Centre at lunchtime (refreshments available) but suggest bring your own sandwiches! After lunch, Middleton Top car park (charge made).

**WESTMORLAND GEOLOGICAL SOCIETY**

E-mail: mail@westmorlandgeolsoc.org.uk , westmorlandgeolsoc.org.uk/  
(usual meeting place for indoor lectures: Shakespeare Centre, Kendal)

**Marble Quarries at Sizergh.****Sunday, 17th September 2006**

Leader: Dick White. 10.30am.

Meet: Sedgwick caravan site (SD 508 878). Easy walking along river bank. After lunch: Visit to Sizergh Castle to see some of the marble in use. £5.80 entrance fee, National Trust Members free.

**Rocks and minerals of Cumbria****Wednesday 18th October 2006**

Speaker: Ian Tyler, Proprietor & Curator of Keswick Mining Museum

## SUBMISSION OF PAPERS

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Manuscripts for publication in the Proceedings should be submitted to *'The Editors, Proceedings of the Yorkshire Geological Society, Geological Society Publishing House, Unit 7, Brassmill Lane Enterprise Centre, Brassmill Lane, BATH, BA1 3JN'*. Typescripts should be prepared using the updated instructions for authors given on the inside back cover of the latest issue (Volume 56 Part 1, May 2006).

Publication of manuscripts may be expected in the next, or next but one part, following acceptance. The proceedings will be abstracted and/or indexed in, *GeoArchive, GeoRef, Geobase, Geological Abstracts and Mineralogical Abstracts, Research Alert and Science Citation Index Expanded (SCIE)*.

## COPY FOR CIRCULAR

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Copy deadline for Circular 533 is the 2nd October 2006.

Copy deadline for Circular 534 is the 1st November 2006.

## NEXT YGS MEETINGS

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The next meetings are Indoor Meetings

28th October 2006 - Palaeontology: A Tribute to Professor John Neale - Hull  
(joint meeting with Hull GS)

25th November 2006 - AGM, Presidential Address & Annual Dinner - York

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