

A Registered Charity
No. 220014

Circular 526



YORKSHIRE GEOLOGICAL SOCIETY

President: John Powell Ph.D.

GEOHAZARDS AND MARINE GEOLOGY



SPEAKERS: DAVE LONG, DAVE TAPPIN and BILL McGUIRE

14.00 to 16.55 SATURDAY 5th NOVEMBER 2005
LECTURE THEATRE CG85, SCIENCE LABORATORIES,
STOCKTON ROAD, DURHAM UNIVERSITY, DURHAM

GEOHAZARDS AND MARINE GEOLOGY

14.00-16.55 SATURDAY 5th NOVEMBER

Recent catastrophic events such as the Indian Ocean Asian Tsunami and the earthquake in Kashmir have highlighted the risk to mankind from the fundamental tectonic processes of the Earth's crust and from secondary geohazards, such as landslides (submarine and terrestrial) and coastal flooding. At this meeting three eminent experts in this field will describe the science behind the submarine earthquake and tsunami that affected much of the Indian Ocean last year; the risk from volcanoes, especially volcanic islands; and, closer to home, submarine slides and the risk from tsunamis in the North Sea.

14.00 -14.05 Introduction and Society announcements

John Powell (President)

14.05-14.50 The Storegga Slide Tsunami and the UK risk from submarine slides.

Dave Long (British Geological Survey, Edinburgh)

14.50-15.35 The Indian Ocean tsunami 2004 - the catastrophic event

Dave Tappin (British Geological Survey, Nottingham)

15.35-16.05 Tea and Coffee*

16.05-16.50 Playing with fire: how volcanoes kill, maim and destroy

Bill McGuire (University College, London)

16.50-16.55 Closing remarks

* There will be small, voluntary charge for refreshments at this meeting; proceeds will be donated to the UK Disasters Emergency Committee.

THE STOREGGA SLIDE TSUNAMI AND THE UK RISK FROM SUBMARINE SLIDES

Dave Long (British Geological Survey, Edinburgh)

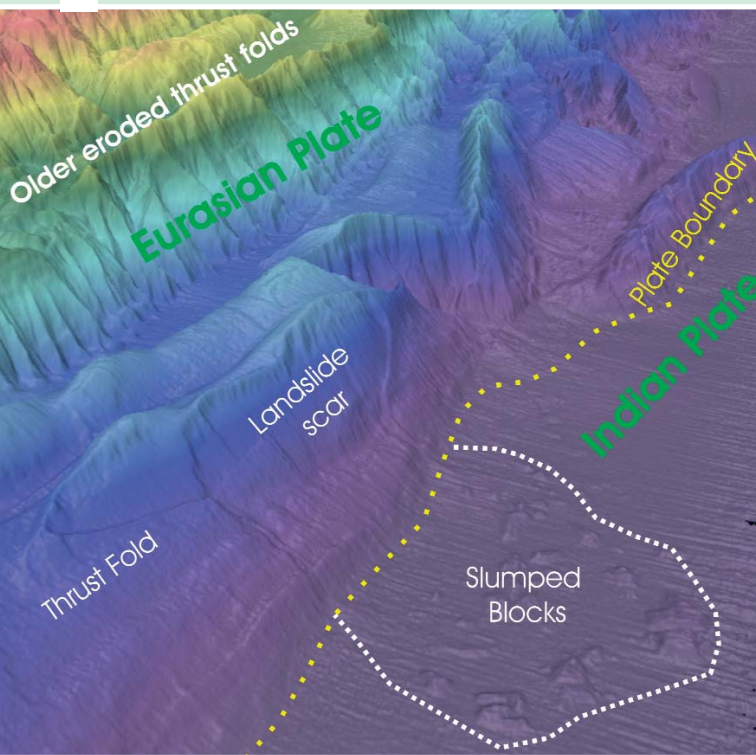
One autumn day eight thousand one hundred or so years ago a series of tsunami waves struck the northern and eastern coasts of Britain. Evidence for this event can be seen in coastal deposits around Scotland and northeast England. They include marine sediments within coastal peat and lacustrine deposits. Tracing out these sediments provides useful information on the tsunami waves, their number, strength and height. They also provide a chronostratigraphic marker for the early Holocene. The cause of this tsunami was a giant submarine landslide off the coast of mid-Norway, one of the largest identified globally, displacing approximately 3,500 km of sediment, known as the Storegga Slide. The area affected by landsliding covered an area the size of Scotland and extended from the shelf break to the deep sea floor of the Norwegian Sea. Evidence for the tsunami has been found in Norway as far north as the Arctic Circle and in the Faroes as well as in the UK. Although the physical impact of this event was extensive it may be assumed that the socio-economic aspects were minor. Today the consequences would be very different. Recent studies have produced a geological model for that part of the NW European margin indicating that submarine landsliding is an integral part of continental margin development. Similar slides have been identified around the UK margin; although smaller some have occurred more recently.

THE INDIAN OCEAN TSUNAMI 2004 - THE CATASTROPHIC EVENT

Dave Tappin, British Geological Survey, Nottingham, England

On the 26th December 2004 at approximately 1 o'clock in the morning GMT, a great earthquake of magnitude 9.3 located off the northeast of Sumatra on the eastern margin of the Indian Ocean created a catastrophic teleseismic tsunami that caused the deaths of over 200,000 people living on the adjacent coasts. The earthquake rupture extended over 1200 km from the epicentre off the coast of Sumatra in the south to Burma in the north. It took place as the Indian Ocean tectonic plate in the west underthrust the Asian Plate in the east. The earthquake was the largest for 40 years and the tsunami the most destructive ever recorded, it was Biblical in proportion.

This talk provides a background to the tsunami event to place it into a geological context (illustration on following page) and addresses the tsunami source because the mechanism of earthquake rupture was unrecognised previously and reveals new insights into deep earth processes acting along subduction zones. It also reports on the results of a multibeam bathymetric survey using interactive Fledermaus imaging software. The multibeam data was acquired immediately after the tsunami using the Royal Navy's hydrographic survey vessel HMS Scott. The Scott was despatched by the UK Government to the Indian Ocean as part of its humanitarian aid to the region. The high-resolution bathymetry survey is over the southern part of the rupture zone, located within Indonesian waters and covers over 40,000 square kilometres of seabed. The area mapped is an accretionary complex formed as the two plates converged over the past 40 - 60 million years. The objective was to identify seabed movements that were the result of the earthquake and to identify submarine slope failures that may have contributed to the tsunami.



Submarine landslide on the Sumatra plate margin. The displaced blocks on the right originated from the scar on the accretionary thrust fold in the centre of the image. They have travelled up to 13 km from their source. Largest blocks are 100m high by 2 km wide. The landslide is recent, but probably not caused by the earthquake of December 26th 2004.

PLAYING WITH FIRE: HOW VOLCANOES KILL, MAIM AND DESTROY

Bill McGuire (University College, London)

Volcanoes are life givers; playing a vital role in the formation of our planet's atmosphere and sustaining the livelihoods of millions of people by supporting some of the most fertile soils on Earth. They are also, however, bringers of death and destruction that have taken over a quarter of a million lives since the end of the 17th century and more than eighty thousand in the last hundred years alone. Unlike other natural hazards, volcanoes can kill, maim and destroy in a wide range of different ways - all of them unpleasant. Among the most destructive are the so-called *pyroclastic* flows and *surges*; hurricane blasts of hot ash, burning gases and sometimes blocks as big as houses that obliterate all in their paths. These devastating flows took over 2,000 lives in 79 AD as Vesuvius erupted after a long period of repose. Yet again, just over a hundred years ago in 1902, an explosive eruption of the Mont Pelée volcano on the Caribbean island of Martinique, wiped the town of Saint Pierre from the face of the Earth, consigning all but four of its 29,000 inhabitants to oblivion.

Almost as terrifying as pyroclastic flows and surges are the flows of sticky mud known as *lahars*, produced by eruptions on to snow or ice, the breaching of crater lakes or simply by heavy rains falling onto thick accumulations of unconsolidated ash. The great eruption of Pinatubo in 1991 - the biggest of the last century - coincided with the passage of a typhoon that turned the falling ash into rivers of mud that claimed hundreds

of lives. Even more devastatingly, a relatively small eruption of Columbia's Nevado del Ruiz volcano in 1985 melted ice and snow that poured down valleys draining the volcano as a muddy flood. The inhabitants of the town of Armero and neighbouring villages had no time to escape and 23,000 were buried alive in a tomb of thick, rapidly solidifying mud.

Like earthquakes, volcanic eruptions are also capable of producing the gigantic sea waves known as tsunamis. The huge blast that tore apart the island of Thera (Santorini) around 1600 years BC, generated great waves that crashed onto the northern shore of Crete, perhaps severely impacting on the Minoan coastal centres. More recently, in 1883, the explosion and collapse of Krakatoa produced a series of waves up to 15m high that battered the shores of Java and Sumatra, taking around 36,000 lives.

Volcanic eruptions have many other unpleasant side effects. Lava flows can bulldoze down any building, while ash can collapse the roofs of homes, cause health problems, damage crops, poison livestock and make travel almost impossible. Volcanic gases can send the unaware into a deep sleep from which they will never awake, while wholesale in the stratosphere they can affect the climate and cool the entire planet. The greatest eruptions of all are capable of plunging the planet into Ice Age conditions and even triggering mass extinctions.

Around 50 or so volcanoes are active every year. Although over 600 have erupted in historical times, there are probably around 3,000 capable of exploding into life now or in the future, some on a cataclysmic scale. So where on the planet should we look for the next volcanic disaster? The island of Dominica in the Caribbean has recently been showing signs of renewed activity, while on mainland US, Mount Rainier in Washington State and Mammoth Mountain in California both have volcanologists worried. Other names to keep an eye out for are Ta'al in the Philippines and of course Vesuvius. Here, a future eruption will require the evacuation of at least 600,000 people in order to avoid a repeat of the 79AD disaster. The biggest threat comes, however, from the Cumbre Vieja volcano on the Canary Island of La Palma. The western flank of this volcano - a mass of rock the size of the Isle of Man - is unstable and poised to collapse into the North Atlantic. When it does so, the Caribbean and the entire eastern seaboard of the US will be devastated by a series of tsunamis tens of metres high. Without pre-evacuation, death tolls of tens of millions can be expected, along with a collapse of the global economy as many of the great US cities are brought to their knees.



*Tavurvur erupting at Rabaul Caldera in 1998.
Copyright Bill McGuire.*

A WORD FROM THE PRESIDENT

A Local Geodiversity Action Plan (LGAP) is to be initiated for North East Yorkshire. The LGAP is intended to create a framework through which the geological assets of the region can be conserved and be made accessible. The lead partner for the project is the North East Yorkshire Geology Trust, with financial support provided by English Nature and Scarborough Borough Council; these organisations, together with the North York Moors National Park Authority and the Yorkshire Geological Society (JHP), comprise the Steering Committee. A consultant co-ordinator will be appointed in November, charged with carrying out the review and plan, liaising with stakeholders, and providing a draft report by March 2006. I will supply more information on the North East Yorkshire Geodiversity Action Plan together with the contact details of the consultant in a later circular, so that YGS members may, if they wish, become involved.

The Hull Meeting on 8th and 9th October was a resounding success, treated as we were to interesting presentations and, of course, the delicious cakes and refreshments provided by the Hull Geological Society. The theme: 'Open Questions in East Yorkshire Geology: 100 years after Lamplugh' was suggested by Mike Horne (Secretary of Hull Geological Society). An excellent range of talks from Professors Rawson, Mortimore and Catt, and Mike Horne, reflected on the achievements of that eminent Yorkshire geologist and former Assistant Director of the Geological Survey, on subjects as diverse as the Speeton Clay, the Chalk and the Quaternary of eastern England. After more than a century of further research in these fields the speakers highlighted both the scientific advances, and the many gaps in our knowledge that will stimulate geological research by both professional and amateur geologists in the future, for instance: ammonite biodiversity, provincialism and Milankovitch cyclicity; the nature of the southern and northern Chalk provinces; and evidence for Anglian (OIS 12) glacial deposits in Yorkshire. Members were able to follow in the footsteps of Lamplugh on Sunday, led by Mike Horne, to sites at Speeton and Danes' Dyke.

Our meeting at Durham on the 5th November is set to be a fascinating insight into tsunamis, submarine landslides and volcanic geohazards. I look forward to seeing you there.

John Powell

CALENDARS 2006 AND OTHER ITEMS

With this month's circular you should have received the YGS gift flyer, which features ongoing items such as t-shirts and our ever popular field guide to Northumbria. Also advertised on the flyer are items of limited availability like the YGS Calendar and Carboniferous Conference Publication.

Can I remind you that the YGS calendar was a "sell-out" last year and once they are gone, they are gone, so place your orders now! Likewise with the Conference Publication, Doug Holliday only has limited stocks, so see him before he sells out. Doug can be contacted on dwho@bgs.ac.uk or in writing to BGS, Keyworth, Nottingham NG12 5GG.

NOTES ON A FOSSIL FOUND IN THE RARICOSTAUM ZONE OF THE LOWER LIAS OF RAVENSCAR

By Stuart Swann North East Yorkshire Geology Trust

Following on from last month's well received article on the North Yorkshire floods written by our President, John Powell, we have another short piece from Stuart Swann. If you have a short newsy article that you fancy sharing with the YGS membership, please forward it to k-park@bigfoot.com. We are always on the lookout for interesting articles for this section.

Figure 1: This photograph shows the fossil owned by a Mrs Duck of Whitby who brought it to a fossil road show I was taking part in at the Whitby Museum. Although it struck a vague chord at the time I wasn't able to help but said I would get back to her if ever I found out what it was.

Figure 2: This illustration shows one of my own specimens, that I found some 20 years ago and eventually relegated to the cellar as no one could identify it. After seeing Mrs Duck's specimen I then started using it in teaching and fossil road shows as an illustration of how many things were still to be discovered; by me anyway.

Figure 3: Derek Gobbet a member of the NEYGT and the YGS, like myself remembered seeing something like my specimens and eventually produced this pair of pictures from an article by a German author called Ernst Lörcher of Stuttgart.

Will Watts and myself recently found that we both had similar specimens. We actively sought more and both Will and I have added one more to the collection. There are five specimens that are easily accessible now and the one owned by Mrs Duck, which is the subject of ongoing enquiries.

Lörcher identifies this as a member of the Medusae possibly *Trachymedusina* from the Dogger. I am assuming that Lörcher means the Dogger at the top of the Upper Lias. He describes the rock as a grey, fine grained, hard Sandkalk which I think means calcareous sandstone. This paper was written in 1930 so it would be interesting to see if any work has been done on this area since then.

I am sure it has, but with limited resources (mostly time) I have not been able to find much out. And the standard textbooks simply outline the order Scyphozoa and say that there are so few examples that they won't bother going any further. Any information would be gratefully received at twoswanns@yahoo.co.uk.

Figure 1



Figure 2



Figure 3



Fig. 1.



Fig. 2.

ANNUAL DINNER

Following last month's piece, here is the update for the Annual Dinner which will be held on Saturday 3rd December 2005 at 6.00 pm for 6.30 pm after the AGM. As usual it will be at the King's Manor, York University. The Cost of the tickets will be £27.00 (please note the increase is not a "get rich quick Scheme" by the YGS Council, but is King's Manor's minimum charge). If you have special dietary requirements (vegetarian etc.) please let Stuart know at the time of booking.

Please make cheques payable to Stuart Ogilvy (not the YGS) c/o Yorkshire Museum, Museum Gardens, Museum Street, York, YO1 7FR.

The closing date for bookings is the 18th November 2005.

MENU

Timbale of Melon and Berries with a Toasted Coconut Dressing

*Braised Shoulder of Lamb Rolled with Herbs with Dauphinoise Potato and Puy Lentils
Served with fresh seasonal vegetables*

Poached Pear with Ginger Sabayon and Caramel Sauce

Coffee and Continental Chocolates

MEMBERSHIP FEEDBACK AND INVOLVEMENT IN COUNCIL

There have been several positive responses to the look and feel of the circular, these range from "well done" and "excellent", to comments on how relevant the article was on the North Yorkshire floods (if you have short article please let the Circular Editor have it). It has also been commented on that the short biographies of Council Members are helpful, as members know who are making the decisions on the direction the YGS is taking.

Obviously to balance these comments there are one or two voices asking for a return to a black and white circular. What do you think? If you have any comments on the circular or any other subject for that matter, please let a Council member or one of the contacts on the back of the circular know. With the AGM coming up, if you fancy standing for the Council, one of the committees or a working group please let the General Secretary know as soon as possible (details on the reverse of the circular). It's your society and we need your comments and help.

BOOK REVIEW

Please note, reviews of books and publications reflect the view of the individual reviewer and in no way necessarily reflect the views of Council or the Society as a whole.

JOHN PHILLIPS AND THE BUSINESS OF VICTORIAN SCIENCE.

Jack Morrell

Ashgate, Aldershot, 2005. 458 pp. ISBN 1 84014 239 1. Price £57.50 (hardback).

John Phillip's life began and ended tragically; born in Wiltshire, he was orphaned at 7 and died after falling down a flight of stairs at All Souls College, Oxford, in April 1874 at the age of 73. In between, as Jack Morrell shows so clearly, Phillips had a remarkably varied and successful career which was continuously stimulated by his need to earn a living in the days when many of his scientific contemporaries were gentlemen of independent means. It culminated in him becoming Professor of Geology at Oxford when he had never had a university education. But he did, of course, have a much more appropriate and practical education through being brought up by, and eventually working with, his uncle, William Smith.

Phillips' contact with Yorkshire commenced in 1820, when he and Smith began working in the north of England. By 1824 Phillips was carrying out freelance work for the Yorkshire Philosophical Society and he was appointed keeper of their museum from 1 January 1826. So began a long association with York, a city that Phillips clearly loved for he retained a house there until 1870 and willed that his funeral should be held there: he is buried in York Cemetery.

Phillips' influence on our science was widely appreciated by both his contemporaries and his successors and has been the subject of numerous articles, but Jack Morrell's major contribution is the first book-length account of Phillips' life and times. In it the author 'tries to clarify his roles in Victorian culture'. He succeeds admirably. The volume commences with a useful introduction which provides a brief account of the main phases and events of Phillips' life, followed by a summary of its historiography which goes back to the 1850s. The remaining chapters are arranged more or less chronologically, but focus on particular themes that reflect various phases in Phillips' career. The first half of the book will be of particular interest to YGS readers as so much of Phillips' earlier career was based in York, even when he was venturing elsewhere for work. The first two chapters have an added interest in that so many aspects of William Smith's life are also touched upon, particularly when Smith's and Phillips' careers were closely interwoven in the 1820s.

The volume is not the 'light read' based on minimal sources of the type so popular with some modern biographers, but a thoroughly researched, meticulously referenced and scholarly account based on a considerable range of primary sources. The text is detailed but fluently written, while there are some fascinating contemporary monochrome illustrations, not least of some of the machines that Phillips designed and his photograph of the moon, taken in 1853. I thoroughly enjoyed reading it.

Pete Rawson

University College London

YGS PROCEEDINGS

WE HAVE FOR SALE

YGS PROCEEDINGS CUMULATIVE INDEX
VOLUMES 38 - 50 INCLUSIVE. ISSUED TO MEMBERS MAY 1997.

£3 including postage and packaging.

Cheques made payable to 'Yorkshire Geological Society'. Through the General Secretary, address at the back of Circular.

FORTHCOMING YGS EVENTS

As there some slight changes to the usual programme, we would like to remind members of these changes. As usual these dates will be confirmed as the programme moves forward.

January Meeting (21.01.2006)	Leeds
February Meeting (18.02.2006)	Sheffield
March Meeting (18.03.2006)	BGS, Keyworth
September (was October) (30.09.2006)	Scarborough
October (was November) (28.10.2006)	Hull
November (was December) (25.11.2006)	York (AGM & Annual Dinner).

SCIENCE WEEK - 10TH to 19TH MARCH 2006

Peter Kennett informs us that National Science Week looms again from the 10th to 19th March 2006.

The organisers are based at Sheffield Hallam University and are looking for titles and presenters and wondered if YGS members would be interested in getting involved? If so please contact Pat Brunskill at Sheffield Hallam University, p.brunskill@shu.ac.uk

Past events have included investigating churchyards and working with fossils, for which the Palaeontological Association offer funding.

One point worth mentioning. As Science Week involves working with children leaders of events will have to be CRB cleared, an often lengthy process, so start now if you are interested.

CORRESPONDING SOCIETIES

Contact society representatives for the latest information.

CRAVEN & PENDLE GEOLOGICAL SOCIETY

Yvonne James. Tel: 01282 813 772 or www.cpgs.org.uk

Fire and ice: A geological and social perspective on volcanic activity in Alaska

Friday, 18th November

Speaker: Diana Roman Ph.D., University of Leeds (formerly of the University of Oregon, USA)

Carboniferous Crinoids of Clitheroe

Friday, 16th December

Speaker: Paul Kabrna, C.Geol.

CUMBERLAND GEOLOGICAL SOCIETY

Nigel Courtman. Tel: 01229 861 478 or www.cumberland-geol-soc.org.uk

Stalagmites and climate change

Wednesday, 9th November

Speaker: Dr Andy Baker, University of Birmingham

Westlakes Institute, Whitehaven

Members Evening

Wednesday, 7th December

Details to be announced in December newsletter.

Friends Meeting House, Keswick.

EAST MIDLANDS GEOLOGICAL SOCIETY

Janet Slatter e-mail: sec@emgs.org.uk or www.emgs.org.uk.

Gas hydrates - a geological killer in our midst?

Saturday, 19th November

Speaker: Dr John Rees, British Geological Survey. Start: 6.30pm.

Anhydrite to Zinc - a pictorial survey of working mines in the British Isles

Saturday, 10th December

Speaker: Paul Deakin. Start: 6.00pm.

HUDDERSFIELD GEOLOGY GROUP

Julie Earnshaw (Secretary). Telephone: 01484 311 662 or e-mail: earniehome@ntlworld.com

Kilimanjaro and the East African Rift Valley:

Wednesday, 7th November

About an expedition to Kilimanjaro in August 2005

Speaker: Bob Appleyard. Bob will be talking about the broader setting of

Kilimanjaro in the East African Rift Valley and the causes of rifting and volcanism in the area.

Annual General Meeting

Wednesday, 5th December

Greenhead College followed by a meal at the Croppers Arms, Marsh.

HULL GEOLOGICAL SOCIETY

Mike Horne. Tel: 01482 346 784 (after 7.30 pm)
or e-mail: m.j.horne@hull.ac.uk or www.go.to/hullgeolsoc

Volcanoes of Sicily and the Aeolian Islands Thursday, 17th November
Speaker: Terry Rockett. Evening lecture.

Quaternary Wetlands: the muddy time machine Thursday, 15th December
Speaker: Dr Jane Bunting, University of Hull. Evening lecture.

LEEDS GEOLOGICAL ASSOCIATION

Anthea Brigstocke (General Secretary). Tel: 01904 626 013.
E-mail: abrigstocke@hotmail.com or www.leedsgeolassoc.freeserve.co.uk

The Silverpit Impact Crater: a Geological Controversy Revisited Thursday, 10th November
Speaker: Kevin Smith, BGS Keyworth

AGM and Conversazione Thursday, 1st December
Short talks by members.

LEICESTER LITERARY & PHILOSOPHICAL SOCIETY

Chairman: Andrew Swift. Tel: 0116 252 3646 or e-mail: as48@le.ac.uk

Recent Discoveries from Chengjiang and South Africa Wednesday, 2nd November
Speaker: Professor Dick Aldridge, University of Leicester.

Snowball Earth Wednesday, 16th November
Speaker: Dr. Conall Mac Niocaill, University of Oxford.

MANCHESTER GEOLOGICAL ASSOCIATION

Jane Michael. Tel: 0161 366 0595, e-mail: jammyjane@aol.com or www.mangeolassoc.org.uk

Evolution of the Cheshire Basin Saturday, 12th November
The Tectonic Setting: Dr Dave Evans, British Geological Survey
Sherwood Sandstones: Dr Geoff Warrington, British Geological Survey
Mercia Mudstone: Dr Albert Wilson, British Geological Survey
Diagenesis and Later Mineralisation: Dr Geoff Warrington, British Geological Survey

Lead Mining in the Peak: Preserving the Heritage Saturday, 10th December
Fred Broadhurst, University of Manchester.
Mr. Paul Chandler, PDMHS.
Professor John Barnatt, Peak District Park Planning Authority.

NORTH EASTERN GEOLOGICAL SOCIETY

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

Origin of the submarine Ontong Java Plateau, the world's largest province Friday, 18th November
Speaker: Prof. Godfrey Fitton, University of Edinburgh

Mountain Ranges of Iran Friday, 9th December
Speaker: Dr. Mark Allen, University of Durham.
Followed by cheese and wine buffet.

WESTMORLAND GEOLOGICAL SOCIETY

Mrs P. M. Wilson. Tel: 01539 533 198 or www.wgso.fsnet.co.uk

Iceland - evolution of sub-glacial volcanoes Wednesday, November 16th
Speaker: Dr Dave McGarvie, Open University

Members Evening and Jacob's Join Wednesday, 21st December
An opportunity for members to share current projects, display samples,
air their queries or give a short presentation.

OTHER SOCIETIES OF INTEREST**EAST MIDLANDS REGIONAL GROUP OF THE GEOLOGICAL SOCIETY**

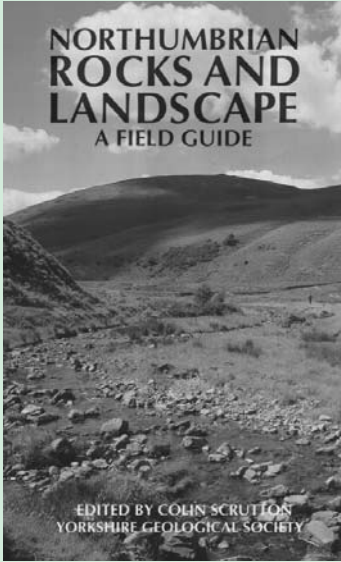
Ed Hough e-mail: eh@bgs.ac.uk

SORBY NATURAL HISTORY SOCIETY

Ken J Dorning. www.shu.ac.uk/city/community/sorby/secgeo.shtml

YORKSHIRE REGIONAL GROUP OF THE GEOLOGICAL SOCIETY

Isla Smail. Tel: 0113 242 8498, e-mail: isla.smail@arup.com



Northumbrian Rocks and Landscape: A Field Guide

Price £9.99 + £2.00 P&P. No postage and packaging if collected at the next YGS indoor meeting.

POSTAL ORDER FORM

Please supply.....copy(ies) of the YGS Field Guide
Northumbrian Rocks and Landscape

I enclose a cheque for £.....inc P&P

Name:

Address:

.....

Tel No:

Order forms and cheques to Dr J H Powell, BGS, Keyworth, Nottingham NG12 5GG. **Please make cheques payable to Yorkshire Geological Society.**



ORDER THE 'NEW' COOL YGS T-SHIRT

See examples at next meeting.

Bring your cheque for £12.00 + £2.50 P&P to the next meeting to order. Save £2.50 and collect at the next meeting.

ORDER FORM

Please supply.....YGS t-shirts in white

Size: S M L XL

Design: YGS logo small / YGS logo large (as above) / Map

I enclose a cheque for £.....inc P&P / I will collect at next meeting.
Delete as applicable.

Name:

Address:
.....

Tel No:

Or, put your order form and cheque in the post to Dr J Powell, BGS, Keyworth, Nottingham NG12 5GG. **Please make cheques payable to YGS.**

SUBMISSION OF PAPERS

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 55 Part 3, May 2005).

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

The next indoor meeting will be held on 3rd December 2005. AGM and Presidential Address. Jurassic of the Cleveland Basin: a review.

Copy deadline for Circular 527 is the 1st November 2005.

Copy deadline for Circular 528 is the 5th December 2005.

GENERAL SECRETARY

Trevor Morse, Ph.D. 19 Thorngate, Barnard Castle, DL12 8QB

Tel: 01833 638893 e-mail: tjm4@tutor.open.ac.uk

MEMBERSHIP SECRETARY

Ms Chris Jennings-Poole B.Sc., 6 Wolsey Drive, Norton, Stockton on Tees, TS20 1SY.

e-mail: chrispoole@hotmail.co.uk

CIRCULAR EDITOR

Keith Park, B.Sc. (Hons), 24 Ings Lane, Guiseley, West Yorkshire LS20 8DA

Telephone: (Work) 0113 278 4286 (Home) 01943 878787

e-mail: (Home) k-park@bigfoot.com (Work) keith@tcpleeds.com