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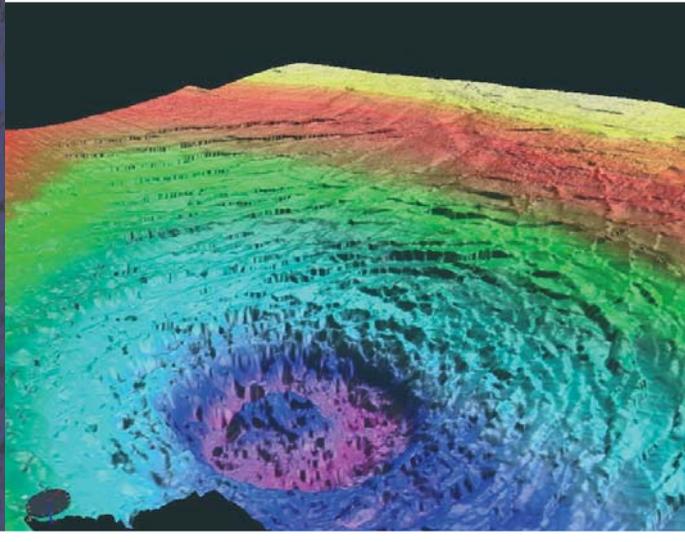
Circular 516



YORKSHIRE GEOLOGICAL SOCIETY

President: Professor Pete Rawson

GEOLOGICAL HAZARDS AND DISASTERS



*Silverpit Impact Crater
3D Seismic Image*

A JOINT MEETING WITH
EAST MIDLANDS GEOLOGICAL SOCIETY

SPEAKERS: PHIL ALLEN & NICK RILEY

14.00 to 16.30 SATURDAY 20TH MARCH 2004

SIR KINGSLEY DUNHAM MEETING, DE LA BECHE LECTURE THEATRE
BGS, KEYWORTH, NOTTINGHAM NG12 5GG

(ADMISSION BY TICKET ONLY - SEE INSIDE FOR DETAILS)

NON MEMBERS WELCOME

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YGS 2004

GEOLOGICAL HAZARDS AND DISASTERS

- 14.00 - 14.05 **Introduction and Society Announcements**
 Professor Pete Rawson UCL, London
- 14.05 - 14.55 **The Silverpit crater:
 A North Sea impact structure revealed by 3D seismic data**
 Phil Allen, Geophysicist at Production Geoscience Ltd, Banchory
- 14.55 - 15.30 **Tea and Coffee**
BGS Shop Open: 13.00pm - 14.00pm
 15.00pm - 15.30pm
 16.30pm - 17.00pm
Please Note: Flat maps cannot be purchased on the day.
 But if ordered and paid for in advance, they can be collected on the day
 of the meeting.
- 15.30 - 16.20 **CO₂ - a greenhouse gas and the hazards posed by its build up in the
 Earth's atmosphere**
 Nick Riley MBE, C. Geol., FGS, Programme Manager,
 Sustainable Energy & Geophysical Surveys, British Geological Survey
- 16.20 - 16.30 **Closing Remarks**

TICKETS FOR THE MEETING

PLEASE NOTE THIS IS A TICKET ONLY MEETING. There is a limit of 250 people for this event and as it is being advertised in the local press it is likely to be a popular meeting. Tickets are free.

To avoid disappointment contact David Evans by telephone: 0115 936 3281 or email: dje@bgs.ac.uk and reserve your tickets which can be collected at the meeting.

The Society would like to thank the Paper Co Leeds for sponsoring the paper for this publication and therefore allowing it to be produced in colour at no extra cost to the YGS.

THE SILVERPIT CRATER: A NORTH SEA IMPACT STRUCTURE REVEALED BY 3D SEISMIC DATA

Phil Allen, Geophysicist at Production Geoscience Ltd, Banchory

Geologists have only recently begun to accept the notion that meteorite impact events have played a significant part in the Earth's history. It is now widely recognised, for example, that the Chicxulub impact in Mexico may have been responsible for the cataclysmic events that caused the mass extinctions at the end of the Cretaceous period.

A high-resolution 3D seismic survey in the southern North Sea was being appraised when some very strange geometries emerged from the data, noticeably at the top Chalk and base Chalk horizons. Analogy with other impact structures strongly suggests an impact origin for this feature, which has been called Silverpit after the local fishing ground.

The Silverpit crater is 3Km in diameter and is buried by up to 1Km of Tertiary sediments which have preserved the fine detail of the structure. The bowl-shaped depression and central uplift are typical of impact structures. However, the most unusual, and puzzling, feature of Silverpit is a series of concentric fractures, which surround the crater up to a distance of 10 km from its centre. The nearest analogies to these structures are found on two of the icy moons of Jupiter. Even more surprising is that these ring-fractures appear to be extensional in the west and compressional in the east.

The discovery was announced in Nature in August 2002. The exceptional detail of the data and the unique features of Silverpit are creating interest not only amongst geologists but also planetary scientists.

CO₂ - A GREENHOUSE GAS AND THE HAZARDS POSED BY ITS BUILD UP IN THE EARTH'S ATMOSPHERE

Dr. Nick Riley MBE, C. Geol., FGS, Programme Manager, Sustainable Energy & Geophysical Surveys, British Geological Survey, Keyworth, Nottingham, NG12 5AH.

Tel. +44 (0)115 9363312. Fax + 44 (0)115 9363437. Mobile + 44 (0)780 3602487

Underground storage of CO₂, captured from stationary point industrial sources, could achieve major reductions in greenhouse gas emissions to atmosphere. In order to assess the risks and hazards that might be associated with this technology, significant effort is being made internationally through various research projects, ranging from laboratory to field scale experiments and observations. Drawing on examples from around the world, this talk will highlight the main issues, describe the RD&D being undertaken to address them, and suggest what more needs to be done.

PRESIDENT'S WORD

Four excellently-illustrated postgraduate talks were given at our Durham meeting on 21 February, which was very well attended: for the first time the new attendance book was produced and circulated for signature during the talks. The procedure worked well and will be continued at future meetings.

The Council Meeting earlier the same day was concerned mainly with the Forward Plan, so we again split into two working groups, one looking at membership aspects and the other at our range of publications, particularly in relation to communication with members. 'Publications' embraces the Proceedings, the Circular, the Web Site and miscellaneous publications such as our field guides. Some interesting ideas came forward; in particular it is clear that we can expand the size, and therefore the scope, of our Circular while still fitting in the current postal band. So we would be glad to receive ideas from our members – what sort of things would YOU like to read in it? For example, we could include field meeting reports, information about activities of local RIGS groups, records of interesting new geological finds/exposures, and accounts of interesting geological sites, including SSSIs and RIGS. But, of course, we can only enlarge the Circular if we have copy to go in it, so we would also be interested to hear from anyone who would be interested in contributing to our Circular, either on a regular or on a 'one-off' basis. Your ideas and your offers of help should be sent to Keith Park, our Circular Editor.

A few months ago we announced the appointment, following a request for help in our Circular, of a replacement for our long-serving Membership Secretary, Sheila Rogers, who had decided to stand down with effect from the end of February. We are very grateful to Sheila for looking after our membership issues so effectively for so long, and for ensuring that this year's subscriptions are sorted out. We now welcome Chris Jennings-Poole in Sheila's place; her contact details are given at the end of this Circular. Members may like to note that as there is an honorarium for this post, the Membership Secretary is not eligible to be a member of Council but may attend Council meetings.

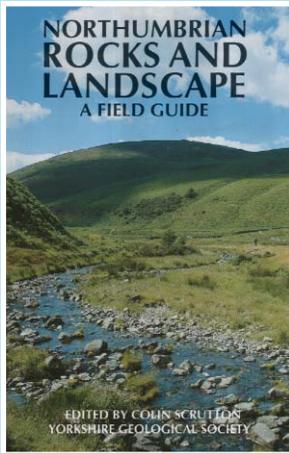
HELP NEEDED!

Two of our longest serving Council Officers are standing down and we are looking for volunteers from our membership to replace them. Firstly we seek a General Treasurer to replace Mike Allderidge, who has served since 1991. The Treasurer is responsible for managing the overall finances of the Society but not for the collection of non-automated subscriptions, which is looked after by our Membership Secretary. The new Treasurer would take over during the summer, during the 'quiet period'.

Secondly we require a new Programme Secretary to replace Dr Paul Wignall, who officially retired at the end of last year but has seen us through the main arrangements for this year. The Secretary is supported by a Programme Committee: the new Secretary would be eased into place as soon as possible.

Do please consider helping your Society: it depends very much on voluntary help. If you think you could do so or would like to know more then please contact our General Secretary, Dr Trevor Morse (contact details at the end of this circular).

NORTHUMBRIAN ROCKS AND LANDSCAPE



The popular YGS Field Guide, which sold out soon after publication, is now available again as a Second Edition with minor changes.

The success of the Northumbrian Rocks and Landscape, published in 1995, prompted Council to publish a Second Edition with minor corrections. The Society wished to mark the occasion by dedicating the book to the memory of Professor Sir Kingsley Dunham FRS (1910-2001) and his son Professor Ansel Dunham (1938-1998), both past Presidents of the YGS, who contributed so much to the Society and to the geology of northern Britain. The printing was supported by generous donations and sponsorship from Helen Dunham, English Nature, Northumberland County Council and Professor John W. Neale. We are also grateful to the original publisher Ellenbank Press for transferring the publishing copyright to YGS, which will ensure that all revenues from sales of

this edition return to the Society. The original print films were still held by St Edmundsbury Press who have made fine job of the re-printing.

The Second Edition includes a new Preface from Professor Peter Rawson dedicated to Sir Kingsley and Ansel Dunham, minor changes to the text (mostly location details including updated telephone numbers of relevant authorities) and revisions to the Museums section, comprising details of collections and contact information including web sites, and a revised map.

Northumberland and County Durham contain within their boundaries some of the most interesting geology and scenery in England, including the Northumberland National Park, a spectacular coastline and the North Pennines Area of Outstanding Natural Beauty, recently designated as the first European Geopark in Great Britain. This book is a stimulating field guide to seventeen locations selected to give comprehensive coverage of the geology, minerals, rocks, fossils and landforms of the area. Excursions vary from easy half-day walks to longer outings. Some are in moorland areas such as the Roman Wall country; others on the coastline, famous for its beauty and history. Two excursions lie north of the border (ancient Northumbria) including the historically important Sycar Point (Hutton's Unconformity).

Aimed at both beginners and more experienced geologists, the Guide (216 pages) includes a general introduction to the area's geological history, detailed location maps for all the 17 excursions, a full glossary of terms, and details of local museums. Northumbrian Rocks and Landscape will be used and enjoyed by all those interested in the geology and natural heritage of this exciting and diverse region.

Edited by former President, Dr Colin Scrutton, the Guide has contributions from knowledgeable academics, professional geologists and dedicated amateurs, many of them members of the Society. Together in this book they provide the most up-to-date and authoritative guide to the geology of Northumbria currently available.

Revenues from the Guide, priced at £9.99, will enable the Society to fund the publication of additional field guides in this popular series. Get your copy today – see details in the enclosed flyer.

Dr John Powell

NORTH PENNINES AREA OF OUTSTANDING NATURAL BEAUTY CELEBRATES ITS EUROPEAN GEOPARK STATUS

The North Pennines Area of Outstanding Natural Beauty (AONB) was the first area in Britain to be awarded the status of 'European Geopark'.

The North Pennines is recognised for its variety of wildlife and scenery and now for its world-class geological heritage. This will be celebrated when the North Pennines hosts its first geology festival. During this "Northern Rocks" festival there will be evening talks and family activities along with a plethora of guided walks led by geologists and local experts. One such walk takes in the impressive and spectacular High Cup Nick, a glacial U-shaped valley found on the western flanks of the AONB. You'll also be able to take an underground visit and see art and sculpture exhibitions, one of which is based in a fully working quarry.

The festival begins on Saturday 22/05/04 and will run until Sunday 06/06/04. A full programme will be published in the near future, but for more information about European Geoparks or the "Northern Rocks" festival, please call the AONB partnership on 01388 528801 or email north.pennines@durham.gov.uk.

GENERAL NOTICES

LAST CHANCE TO STAY IN TOUCH DURING THE SUMMER

Do you want to know what your Society is up to during the summer? Well now you have the chance. If you register your interest, Council will keep you up to date with the YGS through an occasional e-mail circular. All you have to do is send an e-mail to info@tcpleeds.com with YGS as the subject and your e-mail address as the message and YGS information will be forwarded to you. If you do not have an e-mail facility send your name and address to the circular editor (address on the back of the circular) and he will forward you a copy by snail mail.

CALENDAR COMPETITION

Please keep your entries for the calendar competition coming in. You have all summer to take that award winning photograph. The 12 winning photographs will feature in the calendar and highly commended photographs will take pride of place on the front cover of the circular as and when appropriate.

You must have copyright on all photographs entered. The City Press Leeds Ltd have kindly volunteered to supply the origination and help with the production at a very competitive price, therefore we will be able to handle photographs in most formats including high resolution jpegs (600dpi minimum), though tiff or eps files reproduce better in most cases. Prints and transparencies can also be accepted but if you want them returned please enclose a SAE. Photographs etc should be sent to the circular editor (address on the back of the circular), files (up to 3.5Mb) should be sent to info@tcpleeds.com and be clearly marked Calendar Competition. Closing date is Friday 1st October 2004. It is estimated that a minimum of 50 calendars will be produced to make this project viable, so look out for the order form coming soon and get your order in quickly as the calendars will be on a first come first served basis.

HERDMAN SOCIETY

The student-run Herdman Society at The University of Liverpool Department of Earth Sciences is holding its annual day-long symposium on Saturday 20th March 2004.

The title of this years symposium is “Plumes and Plumage: Current Hot Topics in Earth Sciences”, and the day will include talks on subjects as diverse as the origin of birds and the ongoing debate on mantle plumes. A list of speakers is given below and more details can be found on the Herdman website at www.uniservity.net/club_homepage.asp?clubid=5185

Tickets cost £6 and include a buffet lunch, tea and coffee. The symposium will be held in the Science Lecture Block at The University of Liverpool (campus map on request) and will start at 10:30am with tea and coffee from 10:00.

Speakers:

Prof Andy Saunders (Leicester): “Mantle Plumes on the Ascent?”

Dr Gillian Foulger (Durham): An Alternative to Mantle Plumes?

Dr Angela Milner (NHM): “The Dinosaurian Origin of Birds”

Prof Tony Hallam (Birmingham): What caused the biggest mass extinction of all: at the end of the Permian?”

Prof Steve Self (OU): “Basalt super-eruptions and their climatic effects”

MEMBERSHIP SECRETARY

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Work Tel. 01642 352746

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NEW MEMBERS

Ms Clare Mohally, York

Ms E A Edwards, Leeds

Miss Rosemary S Stephens, Leeds

Mr Simon J Price, Keyworth

Ms Lynda C Howard, Loughborough

Dr Muna Lord, London

Mr J B M Holroyd, Halifax

MEETINGS OF CORRESPONDING SOCIETIES

Contact society representatives for the latest information.

CRAVEN & PENDLE GEOLOGICAL SOCIETY

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

The Volcanic Geology of the Aeolian Islands

Speaker: Alison Quarterman, B.Sc. (Hons),
Huddersfield Geology Group

Friday 19th March

CUMBERLAND GEOLOGICAL SOCIETY

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

“Graptolites and the dating of the Skiddaw Group Rocks”

Dr Adrian Rushton, Natural History Museum, London
Conference Centre, Newton Rigg Campus, Penrith

17th March

MEETINGS OF CORRESPONDING SOCIETIES

EAST MIDLANDS GEOLOGICAL SOCIETY

John Wolf e-mail sec@cmgs.org.uk or www.emgs.org.uk

Earthquakes in the English Midlands

Speaker: Dr Brian Baptie, British Geological Survey, Edinburgh.

Start: 6.30pm

Saturday 13th March

The Life and Work of Alfred Wegener

Speaker: Dr Clare Dudman

Start: 6.30pm

Saturday 3rd April

HUDDERSFIELD GEOLOGY GROUP

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

HULL GEOLOGICAL SOCIETY

Mike Horne. Tel: 01482 346 784 (after 7.30 pm)

or e-mail: m.horne@hull.ac.uk or www.go.to/hullgeolsoc

AGM & "The Speeton Plesiosaur Revisited"

Speaker: Will Watts, Dinosaur Coast Project

Thursday 25th March

LANCASHIRE GROUP OF THE GEOLOGISTS' ASSOCIATION

Norman Catlow. Tel: 01772 727 577 or e-mail: norman@catlow4736.freeserve.co.uk

LEEDS GEOLOGICAL ASSOCIATION - 130th ANNIVERSARY PROGRAMME 2004

Anthea Brigstocke (General Secretary). Telephone: 01904 626 013.

E-mail: abrigstocke@hotmail.com or www.leedsgeolassoc.freeserve.co.uk

Mantle Plumes do not Exist

Speaker: Dr Gillian Foulger, Dept of Earth Sciences, University of Durham

18th March

LEICESTER LITERARY & PHILOSOPHICAL SOCIETY

Chairman: Andrew Swift. Tel: 0116 252 3646. as48@le.ac.uk

Meeting the extra-terrestrials: clues from evolution on Planet Earth

Lecture Theatre 10, Geology Department, Leicester University

Speaker: Professor Simon Conway-Morris, Dept. of Geology, University of Cambridge

Start: 7.30pm. Further information can be obtained from the Chairman, Andrew Swift, 0116 2523646, as48@le.ac.uk

Wednesday 10th March

AGM & Chairman's Address

Andrew Swift, department of Geology, Leicester University

Geological Highlights of the Midlands II - Southam

(Long Itchinton) Quarry, Warwickshire

Wednesday 24th March

MANCHESTER GEOLOGICAL ASSOCIATION

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

Afternoon Seminar - Geology, Carbon and Climate Saturday 20th March
 Speaker: Dr Fred Broadhurst, University of Manchester &
 Dr Joe McQuaker, University of Manchester

Practical Applications of Rock Weathering Studies Wednesday 14th April
 Speaker: Dr. Dawn Nicholson, Manchester Metropolitan University

NORTH EASTERN GEOLOGICAL SOCIETY

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

The Dynamics of Ice Age Earth 19th March
 Speaker: Dr. Glenn Milne, lecturer in Geophysics at Durham
 (Preceded by AGM)

WESTMORLAND GEOLOGICAL SOCIETY

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

The Semail Ophiolite of the United Arab Emirates 24th March
 Tales of deserts, camels and lost oceans
 Speaker: Dr Emrys R. Phillips

YORKSHIRE REGIONAL GROUP OF THE GEOLOGICAL SOCIETY

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

Surface Instability Due to Coal Mining 25th February
 Speaker: Philip Naylor, South Yorkshire Mining Advisory Service
 Lecture Theatre 3, Mappin Building, University of Sheffield.
 Start 6.30 for 7.00pm. Free Admission.
 Contact: Isla Smail, 0113 242 8498, isla.smail@arup.com

A one-day seminar on Modern Site Investigations Friday 16th April
 Rupert Beckett Lecture Theatre, University of Leeds
 There will be a small admission charge and a buffet lunch
 will be provided.
 Contact: Simon Baxter, 0113 271 1111, Simon.Baxter@Norwest.co.uk

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 54 Part 4, November 2003).

Publication of manuscripts may be expected in the next, or next but one part, following acceptance. As a result of the change in publishing arrangements 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

Copy deadline for Circular 518 is the 10th September. The next indoor meeting will be held on the 16th October 2004 in Scarborough at the University of Hull's Scarborough Campus. Title: William Smith and Early Geologists on the Yorkshire Coast. There will be a half day excursion on the following morning.

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