

Bulletin

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Talks:

Thursday 12 January

The K/T Boundary Event

Dr Peter Floyd:

7.30pm start, School of Earth Sciences and Geography, Keele University

The asteroid impact hypothesis by Alvarez et al (1980) for the extinction of the Dinosaurs (among other organisms) caught the imagination of the public, journalists and TV producers in need of a novel explanation for mass extinction at the Cretaceous/Tertiary (K/T) boundary, or indeed, as a cause for any mass extinction.

The lecture considers major planetary impacts in general and the evidence for impact at the K/T boundary in the Yucatan peninsula, Mexico. More recent evidence is reviewed and the new problems that have arisen, as well as those concerning the nature of the mass extinction itself. The volcanic option is also given an airing as another possible cause for climate change around the K/T boundary and elsewhere in the stratigraphic column.

Thursday 9 February

Geology and Wine in Southern France

Dr Roger Suthren:

7.30pm start, School of Earth Sciences and Geography, Keele University

With a [buffet beforehand](#)

The speaker will discuss the wines that can be grown in relation to the geology of soil. There will be the opportunity for [wine tasting](#), please complete the 2 forms and return to Carol Fereday.

Thursday 9 March

[AGM](#) and Chairman's Address -

The Geology of the Chaîne des Puys, France

Mike Fereday:

7.30pm start, School of Earth Sciences and Geography, Keele University

Such a variety of well-preserved volcanoes probably does not exist anywhere else in the world than the "Chaîne des Puys" in the Auvergne region in the centre of France. The name "Puy" is used in the majority of volcanoes found in the Auvergne. It is derived from the Latin "podium" meaning in this sense a raised place. As there is no strict translation I have chosen to retain the expression "Chaîne des Puys".

The talk will examine some of the main features of the area and look in detail at the different stages of evolution of some of the most notable including the "Puy de Dôme".

For further information contact NSGGA Secretary **Eileen Fraser** ☎ 01260 271505

The First Regional GA Lecture

The first Regional Lecture of the Geologists' Association was organised by the North Staffs Group (NSGGA) and held at Keele University on Thursday 10 November 2005.

Dr Peter Floyd, Vice Chairman NSGGA introduced the speaker Professor Richard Fortey from the Natural History Museum and invited him to give his talk entitled "The Earth; An Intimate History".

Dr Graham Williams, Vice President of the GA, chaired the meeting and Professor John Winchester; Deputy Head of the School of Physical Sciences & Geography, Keele University gave the Vote of Thanks.

The all-ticket lecture was preceded by a light buffet provided by the NSGGA and free to members of the GA, Local Groups and

Affiliated Earth Science Societies. People applied for tickets from as far a field as Durham, Oldham, Glastonbury, Mid Wales, East Midlands and West Midlands; the Open University Geological Society was very well represented. Many had to be refused a ticket due to the enormous response. 150 people turned up on the night and filled the lecture theatre.

The numbers broken down as follows:

NSGGA members	62
Students	22
Visitors	66

The talk was based on Professor Fortey's recent book and examined the history of the realisation of and confirmation of the existence of plate tectonics.

Having read Professor Fortey's book previously and listened to the talk I intend to read the book again to fully appreciate the historical background to this theory. He took us on a journey starting with the Bay of Naples and evidence of rise and fall of the land in the Pozzuoli region where subsidence caused the sea to engulf the marble columns of the "Temple of Seraphis". There are signs of attack by marine clams that Lyell knew as *Lithodomus* some 4 metres above present ground level. The journey then took us through Hawaii and on to examine Oceans and Continents before taking in the Alps and the immense folding that took place there in earlier times. Finally, Professor Fortey's description of the hair-raising descent into the Grand Canyon can only be surpassed by the chapter in his book. Interspersed with the photographs and illustrations were accounts of experiences and findings of such eminent geologists as Charles Lyell, Eduard Suess, Arthur Holmes, Albert Heim and his models, Charles Lapworth and many others.

Everyone enjoyed the lecture and at the end Professor Fortey was surrounded by a large number of people who wished to talk to him and ask him to sign their copies of his book.

Mike Fereday Chairman NSGGA

UKRIGS Education Project Update – Earth Science On-Site

The ESTA/UKRIGS Conference at Derby in September provided an opportunity for members of both organisations to look closely at the teaching materials produced for the Pilot stage of the Project. All delegates received a draft CD of the materials then available on the UKRIGS website. The evaluation workshop was attended by about 30 delegates and the field visits to the National Stone Centre and Black Rock attracted about 20 hardy souls. As intended, the input from these evaluation sessions has now been included in the revision of the materials on www.ukrigs.org.uk [click on Education].

The draft CD also contains teaching materials for Park Hall and Apes Tor. Copies are available to NSGGA members, especially those with local school contacts.

The next four sites are:

- South Elmsall Quarry, nr Doncaster, West Yorkshire. Magnesian Limestone, Permian.
- Dryhill Picnic Site, nr Sevenoaks, Kent. Hythe Beds, Cretaceous
- Ercall Quarries, Telford, Shropshire. incl Precambrian and Cambrian.
- Barrow Hill, Dudley. Dolerite intrusion into Coal Measures.

The Project is funded by Defra's Aggregates Levy Sustainability Fund, administered by English Nature. Thanks to all who have helped so far, including Alastair & Zoe Fleming, Rick Ramsdale, and Maggie & Pete Williams.

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Subscriptions 2006

Please find the [subscription renewal form](#) associated with this Bulletin and return for prompt payment to Mike Brown. It all helps to keep the Group alive and well.

Newcastle-under-Lyme Building Stones

With the backing of the NSGGA Committee I have spent some of the time as Vice-Chairman putting together a glossy, A3-sized, fold-out pamphlet on the various building stones commonly seen in Newcastle. It will be similar in size to the recently produced Brown End Quarry pamphlet published by the Staffordshire Wildlife Trust and the many pamphlets advertising events locally and at The Potteries Museum and Art Gallery, Hanley. As you may be aware there are already a number of "geological trail" type pamphlets, especially those published by the Welsh RIGS Group (e.g. Llangollen, Llandudno).

It was considered that it was about time we had our own up-to-date pamphlet, especially with the expertise that exists in the Group on local sedimentary rocks used for building. However, we had a head start in that Sam Holloway and Keith Sims published a small booklet in 1981 entitled "A guide to the Building Stones of Newcastle-under-Lyme, Staffordshire". This was invaluable as a start, but needed updating and putting in a modern format. Shops have changed names a number of times, some have covered over original polished facing slabs, although the larger buildings, such as the banks, still display local sandstone blocks of (generally) Permian and Carboniferous age. If you look carefully various sedimentary structures are clearly visible and (in some cases) allow you to determine if the blocks are the "right-way up" - in the geological sense!

There is also a lot of imported stone, mainly of igneous rocks, from such places as Finland, Norway and Southern Africa. Most are employed as facing slabs around shop windows and doorways, but due to their excellent polish display a number of magmatic features, including crystal zoning and xenoliths.

The map in the pamphlet will guide you around 16 different locations with a brief description of the rock type, its age and

source location (if known). The tour might last about 1-2 hours depending on interest and your mobility.

On advice from other "pamphleteers", our contribution will be free to the public (every NSGGA member will receive a copy) and displayed in various libraries, museums, information centres etc.

The costs for the initial 2000 copies will be met by various sponsors. We have, however, applied to the GA Curry Fund, and at the time of writing, await their reply concerning financial support.

If all goes well, we hope to publish sometime early in the New Year.

Peter Floyd

National Ice Age Network

Commercial sand and gravel (aggregates) quarrying has been of enormous benefit for those of us with an interest in the geology, palaeontology and archaeology of the Ice Age. Without aggregates extraction our understanding of England's environments during the Ice Age, and what people were doing during these periods would be very different, countless sites across the country have all contributed to the increasingly detailed picture of life during the Ice Age which continues to emerge after many decades of research.

National Ice Age Network (NIAN) is funded by English Heritage & English Nature through the Aggregates Levy Sustainability Fund, and is expressly concerned with the archaeology and environmental evidence of the Ice Age uncovered during aggregates extraction. NIAN has three main aims: to build good working relationships with the quarry industry; to visit active aggregates extraction sites to assess their potential for preserving Ice Age; and Education & Outreach - providing information to all interested parties about Ice Age evidence, how to identify it, and its use in reconstructions of past environments and behaviours. From four regional centres at Birmingham, Leicester, London and Southampton NIAN hopes to create an inclusive network of archaeologists, geologists, Quaternary scientists and other specialists, quarry companies and the general public, all with an interest in the Ice Age.

More information about NIAN and full contact details for each of the centres can be found on the NIAN website at www.iceage.org.uk and all centres can be reached by email at info@iceage.org.uk. We hope members of the North Staffordshire Group of the Geologist's Association will want to get involved.

For further information contact:

Dr Jenni Chambers

National Ice Age Network, Birmingham Archaeology

University of Birmingham, Edgbaston, Birmingham, B15 2TT

Knutton Quarry

Ibstock have submitted plans to deepen Knutton Quarry, Church Lane, Silverdale (c.SJ828468) from 10.5 metres to 36 metres to allow extraction of Etruria Formation clays and secure jobs for another 30 years. The plans were rejected by Newcastle Borough Council at a meeting on 22 November 2005, but the final decision remains with Staffordshire County Council.

PPS9 Published - From the Office of the Deputy Prime Minister

The long awaited and very important Planning Policy Statement (PPS) 9 was published on 16th August 2005 by the Office of the Deputy Prime Minister, Planning Minister, Baroness Andrews. The Statement entitled: Biodiversity and Geological Conservation, is supported by a joint ODPM- DEFRA circular. The new policy statement sets out the major role the planning system has to play in conserving our natural heritage, on designated sites and in the wider environment. The circular provides guidance to local authorities on the sites and species that receive statutory protection under national and international law. Later this year, ODPM will also publish a good practice guide to accompany PPS9. This therefore covers both SSSIs and RIGS. Together, these two documents replace Planning Policy Guidance (PPG) 9: Nature conservation, published in October 1994.

Key features of PPS9 that will help safeguard biodiversity and geological features include: Local authorities should maintain up to date information on the environmental characteristics of their area, including identifying areas of ancient woodland and other important habitats that are not already designated; Plan policies should aim to maintain, enhance, restore or add to biodiversity and geological conservation interests. They should promote opportunities for the incorporation of beneficial biodiversity or geological features in and around new developments; planning decisions should aim to prevent harm to biodiversity and geological interests. Where significant harm cannot be prevented, adequately mitigated against or compensated for, then planning permission should be refused.

Further information is available on: www.odpm.gov.uk/pns/displaypn.cgi?pn_id=2005_0172

extract from *UKRIGS Newsletter*, vol.3 no.3, 2005

Field meeting review - Lathkill Dale 11 September 2005

For the last field meeting of the season, the group met on 11th September, east of Monyash on the B5055 at SK 157664 (parking and facilities available). Our leader for the day, Dr. Fred Broadhurst then took us on a 'figure of eight' route through and around Lathkill Dale where the various exposures, stratification and jointing of the limestone could be examined. While the sides of the dale are steep in places, climbing to the top and walking over the adjoining farmland gave spectacular views down Lathkill Dale (the Grand Canyon of Derbyshire) and of the surrounding countryside.

During the walk we were immersed in the geology of Carboniferous Limestone and the landform it makes. Topics included the drilling of boreholes to establish the depth of limestone and such questions as why there is so little karst scenery in the Peak

District. From Ricklow Dale, knoll reef structures were observed and their formation discussed. In the nearby quarry walls spectacular displays of crinoidal limestone with geopetal infills were studied; along with lumps of limestone on the floor containing parallel drill holes showing where quarrymen had used the 'plug and feather' technique to produce building blocks.

Further down in the sides of the dale, horizontal bedding could be seen with bands of clay formed from a decomposed ash, known as clay 'wayboards' that were used when quarrying the stone. They derived from centres of volcanic ash production (3 – 4 in Derbyshire) and hence there is a recognised pattern of 'wayboards' local to the vents. Where they rest on a solution surface a palaeo karst is formed. As limestone is only soluble in freshwater, prior to volcanic eruption the area would have been domed above the surface of the sea. It is now thought to have been mainly an area of land that submerged occasionally when the limestone was formed.

An area of scree was then examined where, as well as limestone fragments chert was found (formed by silica replacement) both containing fossils, including crinoids, corals, and brachiopods. Following the path up an unnamed dale to the north, large productoid brachiopods could be seen, higher up an outcrop of limestone contained brachiopod valves exhibiting stacking of the shells indicating rapid sedimentation.

While now frequented by walkers, earlier activities in the form of mining as well as quarrying were evident. Towards the top of Cales Dale on the southern side, a mine entrance has a well-exposed mineral vein in its roof with calcite crystals showing good mineral cleavage. On the return walk to Monyash along the Limestone Way a number of stiles were examined for crinoid remains. As the path crossed an old lead rake, the extensive linear feature of humps and hollows appeared quite benign; the hard graft and poor working conditions for the miners can only be imagined. Returning through the village, a brief pause was made at the pub to examine the doorstep and then give a vote of thanks to Fred for a most interesting and enjoyable day.

The walk was based on a route described in a very useful book entitled "Rocky Rambles in the Peak District", geology beneath your feet, written by Fred Broadhurst. Well illustrated, it describes eighteen walks and is modestly priced at £7.95.

Gerald Ford

Field program notice for April and May 2006

Thursday 20 April

Winsford Rock Salt Mine, Bradford Road, Winsford, Cheshire.

Start at 11.30am at the mine for an underground tour of the mine owned by Salt Union Ltd.

Finish about 3.30pm

Grid Reference: SJ680653, OS Landranger 118. From the centre of Winsford, head due north on Bradford Road (just west of the Weaver Navigation).

Numbers are very limited, to book a place contact Gerald Ford if you would like to join the group.

Weekend of 12 – 14 May

Cardiff, Vale of Glamorgan – weekend with the Essex Group

Leader: Dr. Geraint Owen

Program to include sites west of Cardiff in the Vale of Glamorgan, possibly into the coalfield with almost certainly one day along the coast!

For further information please contact Gerald Ford.

Accommodation is limited, to book a place please return the [enclosed form](#) ASAP.

For further information contact NSGGA Field Secretary **Gerald Ford** 01630 673409

NSGGA - Next Committee Meeting

- **Thursday 19 January 2006 at 7.00pm**
in the School of Earth Sciences and Geography, Keele University

Staffordshire RIGS Group

For details about the Group and meetings, contact:

SRIGS Secretary: Sue Lawley,

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Janet Osborn; John Reynolds; John Winchester

Executive Committee (co-opted):

Roger Clowes, Janet Fairclough, Vanessa Pilley (Keele Geol. Soc)

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