

Bulletin

Number 63

October 2002



NSGGA winter programme for 2002

Thursday 10 October

Lithospheric structure and dynamics of the Kenya Rift

Speaker: Professor Aftab Khan (University of Leicester)

7.30pm at the School of Earth Sciences and Geography, Keele University

See preview notice included in this Bulletin

Saturday 12 October

Geowatch - Silurian Day

At the Potteries Museum & Art Gallery, Hanley, Stoke-on-Trent

Drop-in between 10.30am - 4.00pm to learn all about life in the Silurian Period of Geological Time. See some of the impressive fossil collection from Dudley Museum and have fun with the Remote Controlled Trilobite.

Meetings co-ordinator: **Mike Fereday** ☎ 01782 713227, email: carol@burnett40.freeserve.co.uk

Thursday 14 November

Derbyshire Blue John

Speaker: Dr. Trevor Ford

8.00pm at the School of Earth Sciences and Geography, Keele University

This is the second *Professor Wolverson Cope Memorial Lecture* and will be preceded by sherry and a buffet meal (6.00pm for 6.30pm) for any Member who wishes to attend - see separate flyer to book.

Thursday, 5 December 2002.

Christmas Social for Members and their friends

7.00pm in the Earth Sciences Department, Keele University

A buffet meal is being provided and will cost **£8.50** including wine, please return the form to our Treasurer Carol Fereday to ensure that your meal is booked.

Please bring along any geological exhibits or specimens that you think would be of interest to other Members.

Preview - Professor Aftab Khan lecture Thursday 10 October 2002

Professor Khan will speak about the Kenya Rift International Seismic Project. Experiments show there are abrupt changes in the depths to the Moho (the interface between the crust and mantle where the composition and consistency of the rocks changes dramatically).

Beneath the rift valley itself, there are major differences in the thickness of the African continental crust due to stretching and extension of the crust by events along the rift. There are also differences between the upper mantle structure from the north and the south.

Professor Khan will explain the seismic methods used to look at the deep geology of the rift valley and how they can be used to interpret the Earth's structure.

Dorothy Wright, NSGGA Secretary

Diary Dates 2003

➤ **Thursday 16 January**

Timeless Order: William Smith (1769-1839) and the search for raw materials

Speaker: Professor Hugh Torrens (Keele University)

7.30pm at the School of Earth Sciences and Geography, Keele University

The legacy of William Smith's method for unravelling relative geological time and space was one of the most significant of the nineteenth century.

➤ **Thursday 13 February**

Comparative Planetology: Geology or Guesswork

Speaker: Dr. George Tuckwell (Keele University)

At the School of Earth Sciences and Geography, Keele University

➤ **Thursday 13 March**

AGM and Chairman's Address - The Earliest Skull

Chairman: Bill Fone

National Science Week 7-16 March 2003

The NSGGA, in association with the Geoschool at Keele University, are presenting an exhibition entitled *Alien Worlds* at The Potteries Museum & Art Gallery, Bethesda Street, Hanley, Stoke-on-Trent during National Science Week. The display is being co-ordinated by NSGGA Vice-chairman Peter Floyd and he would appreciate any offers of help, information, specimens etc. from Members.

As part of this endeavour, our own **GeoWatch** group will be running activities at the Potteries Museum on **Saturday 8 March** and **Saturday 15 March**, so there will be a couple of fun and informational days for all - including driving a radio-controlled Mars Rover model!

Earthquake 1

On Saturday 7 September 2002 at 7.17pm (BST), a minor earthquake measuring 1.8 on the Richter scale was recorded in the Staffordshire Moorlands. Although no locals were reported to have felt the quake, the epicentre was about 13 kilometres underneath the Black Lion restaurant-pub in the moorland village of Butterton. NSGGA member Dr Ian Stimpson of the geophysical unit at Keele University was quoted in the Sentinel as saying, "I have been here since 1987 and I cannot recall anything like this happening in the Leek area before."

Earthquake 2

Just over a couple of weeks later the Leek area was again affected by an earthquake, but this time the epicentre was not in the Moorlands and most of England felt the shock. To quote from the *Dudley Earthquake Latest* information pages on the Keele University Earth Sciences website - www.esci.keele.ac.uk - "There was a magnitude 4.8 earthquake near Dudley on 22nd September 2002 at 23:53 GMT (23rd September at 00:53 BST). The earthquake appears to have occurred on the Midland Microcraton along the Malvern Lineament. There are no reports of any injuries and only minor damage were caused." This website also includes maps and other relevant information.

Hurst Quarry extension

Biddulph Sands Ltd. is seeking retrospective planning permission as it has encroached over its permitted boundary to extract silica sand from their quarry (SJ901595) on Hurst Road near Biddulph Grange Country Park. The Sentinel article of 12.9.2002 reports that no objections are likely to be raised.

The Rock Exchange

Billed as "Britain's Premier Mineral & Fossil Show", the Peak Lapidary & Mineral Society hold their 21st Anniversary Show on the **Saturday 12 and Sunday 13 October** at the **Lady Manners School, Bakewell**, Derbyshire. It is open from 10.00am to 5.00pm on both days. Admission: Adults £1.00 (£1.50 for both days), Children Free.

For further information telephone Les Fox on 01629 813542

Field Trip Review - Castleton 'Science and Synergy', Sunday 11 August 2002

On Sunday 11 August 2002 Chris King of Keele University and NSGGA led a group of 13 members of the NSGGA on a innovative field trip around the Castleton area. Although the majority of members had been to Castleton before, and had a fair idea of exactly what we would be seeing, Chris brought a whole new concept to field trips.

We were all a little apprehensive as to what exactly were the "activities" that Chris had planned for the day but in the event they did not prove painful in the least and were in fact both informative and entertaining.

1.Windy Knoll. Windy Knoll was the first location we visited with exposures of back reef, coarse grained limestone containing scattered fossils, crinoids and brachiopods. Joint faces were mineralised with calcite, galena and fluorite. What appeared to be a neptunian dyke is now regarded as a fossil gryke of a Pre Namurian paleokarst.

This is what the book says, but how do we know? We had all read the books and assumed we knew the facts, but Chris plied us with question after question until we had verified the facts to our own satisfaction before dipping into the first of many carrier bags, taking out a mini laboratory and beginning to prove the validity or otherwise of our observations.

And that set the scene for the rest of the day. At each location we visited, we were required to examine the evidence, offer suggestions and then Chris would delve into yet another carrier bag with yet another mini laboratory, and proceed to prove the facts, or not as the case might be.

2 Cave Dale. Our next location was the reef facies of Cave Dale. Just past the entrance through a narrow gorge is a quarry to the left where there are exposed irregular beds of limestones containing lenticular masses of shelly or crinoidal detritus and a few small mineral veins. About 100 metres up the dale a low cliff shows a minor unconformity within the fore reef where one lens of

detritus channels into another. Further up the dale a prominent crag shows algal reef build-up with some fore reef beds to the left and back reef beds to the right.

We continued up Cave Dale until we reached the Cave Dale lavas where basaltic lava is interfringed with beds of massive limestone. Columnar jointing, together with amygdaloidal, vesicular and massive lava are evidence of the thin multiple flows during this minor Carboniferous volcanic activity.

It was here that we had a break for lunch before proceeding to Castleton for ice creams all round, and then to the Odin Mine.

3. Odin Mine. We next visited the Odin Mine where late Carboniferous hydrothermal fluids had picked up galena, baryte and fluorite from anoxic basin clays and deposited minerals up-dip into fissures all along the edge of the carbonate platform. We "picked" up two very interested youngsters who like the rest of us were fascinated with Chris's experiment to show exactly how hydrothermal currents carried the minerals up in suspension.

4. Mam Tor. Mam Tor was our final location where back scarp reveals the Edale Shales overlain by the more competent Mam Tor Beds and the extensive scree slope is evidence of continual erosion. Loose blocks of coarse-grained sandstone shows flute marks and graded bedding whilst some finer grained sandstone contains mica. Both are typical of interbedded proximal sediments from the Namurian delta to the north. Distal deltaic sediments are represented by the pyritic, organic rich, marine mudstones of the Edale Shales.

A final look at the disappearing road below the Shales and the onset of near torrential rain bought our visit to an end.

At every location Chris provided laboratory proof of the conditions, which had formed the various geological features we were looking at. The Geology was brilliant but apart from that, I think everyone enjoyed the visual aids. They were different, gave us all food for thought and I think even those in the group who are professional Geologists found them as insightful and useful as the "lesser qualified" members of the group. I know I certainly did.

My thanks to Chris, on behalf of the Group, for an excellent day and for bringing the Carboniferous environment so effectively to life.

Janet Fairclough, Field Secretary

John Myers Awards 2002

The John Myers Awards assessment panel, comprising John Reynolds, Alastair Fleming, David Thompson and Colin Exley met at Keele University on 19 June 2002 to assess the projects submitted by Keele and Staffordshire Universities. After some considerable deliberation the panel decided to make the following awards:

➤ Keele University

Rachael Louise Rowlands John Myers medal and a cheque for £100 Joint winner

Mark Thomas Rushton John Myers medal and a cheque for £100 Joint winner

➤ Staffs University

Paul Hayes John Myers medal and a cheque for £100 Winner

Cheryl Bridden Cheque for £20 Runner-up

Martin Cooke Cheque for £20 Runner-up

The awards ceremonies took place on 3 July at Keele and 17 July at Staffordshire. Ann Myatt was unable to attend and in her absence David Thompson presented the awards at both ceremonies.

Mike Fereday, John Myers Awards sub-committee

John Myers Awards

Progress update on previous winners/runners-up from Staffordshire University

1997 Paul Thompson. After a period of illness Paul joined Stephens Stephenson, Environmental Planning and Design Consultants, Kendal, Cumbria, then in 1999 became the Minerals Planning Officer for Somerset County Council.

1998 Stephen Hennah. Stephen went on to complete, with Distinction, an MSc in Petroleum Sedimentology at the Postgraduate Research Institute of Sedimentology at Reading University. He is currently half way through a PhD at Reading studying the attenuation of acoustic waves within the ultrasonic and sonic frequency range.

1999 Vidar Brekke. Vidar went on to do the MSc course in Geographic Information Science at University College, London. He now works as a GIS analyst with NTL customising and scripting software, including some project management. **Neil Yates** - runner-up. Neil went to work for Lafarge Aggregates in the South East working for their Estates Team, mainly helping the Regional Geologist with desk studies, exploration work, planning applications etc. After 11 months he went to work for Ready Mix Concrete in West London as the Geologist preparing exploration reports, supervising and managing drilling programmes, assessing the viability of proposed gravel pits, take-overs and purchases of gravel pits. He has since left to start an MSc at Imperial College, London. **Rory Bates** - runner-up. Rory joined Wardell Armstrong, Newcastle-under-Lyme on graduating. He has undertaken a variety of consulting work, in the UK and abroad, and is also currently the Secretary of the Institute of Mining and Metallurgy, North West Branch.

2000 Emily Vallance. Emily took an MSc in Mining Geology at Camborne School of Mines, University of Exeter. She has recently graduated and has joined the Geoffrey Walton Partnership, Oxford. She has just completed the supervision of a drilling programme in County Cork. **Jon Goodwin** - runner-up. Jon joined Lafarge Aggregates, Welwyn Garden City, devising and supervising drilling programmes and general exploration work, handling planning applications etc. He is still there. **Neil Glover** - runner-up. Neil joined the Leigh Office of Wardell Armstrong before his graduation had actually been confirmed. He has special responsibility for landfill and waste sites. Wardell's are financing his MSc in Geotechnical Engineering at Nottingham Trent University.

2001 Suzy Larner. Suzy joined Lafarge Aggregates as a geologist undertaking exploration and drilling work. She has recently commenced an MSc in Exploration Geology at Grahamstown University, South Africa. **Lisa Dunn** - runner-up. Lisa joined Norwest

Holst to work in their contracting Department, but in May left to work for Joynes Pike Associates as they will fund an MSc.

Barry Job, Department of Geology, School of Sciences, Staffordshire University, June 2002

John Myers Awards

Progress update on previous winners/runners-up from Keele University

1997 Joanne Bentley and Paul Weatherall- joint winners. Joanne went on to work for Schlumberger Geoquest in the area of training and support for hydrocarbon exploration software. She is currently based in Houston, Texas. **Paul Weatherall** went on to do a PhD in palaeontology.

1998 Sarah Taylor. Sarah writes. "Since leaving Keele I have completed an MSc in Ecology at Aberdeen University funded by ESF (1999), and a two year research masters in Geology (2002) and a Diploma in Statistics (2001) at Trinity College Dublin funded by a Trinity Postgraduate Scholarship. Whilst in Dublin, I served on the Irish Geological Association council for two years, and demonstrated computing within the department of geology. The summer of 2000 was spent studying the cactus *Opuntia fragilis* in Northern Alberta, funded by a British Ecological Society Small Project Grant. The following summer took me on a subsidised trip to Hawaii, where I was a field assistant working with Chris Nicholas on littoral cones. I have just started a Ph.D. at New Brunswick University, Canada, funded by a British Commonwealth Scholarship and a UNB McGee Scholarship. My studies will focus on the natural disturbance and decline of forests in the Maritimes, and will integrate GIS, geomorphology and ecology."

1999 Zoe Robinson. Zoe is currently completing a PhD at Keele entitled 'Groundwater geochemistry and behaviour under an Icelandic sandur' funded by the NERC. **David Meredith**- runner-up. David is currently completing a PhD at Keele entitled 'Subsidence mechanisms within the Black and Caspian Seas region'. He is about to start a two-year post as a Research Assistant at Keele developing computer modelling software for hydrocarbon exploration. This position is funded by Platte River Associates who are based in Colorado, USA. **Emma Page**- runner-up. Emma is now Emma Grady and works for Laing Homes.

2000 Neil Davies. Neil is currently completing a PhD at Birmingham University entitled "Palaeoenvironmental Analysis of the Siluro-Devonian Ringerike Group, southern Norway" funded by NERC. **Charlotte Vye**- runner up. Charlotte is working for the British Geological Survey, primarily carrying out geological mapping.

2001 Victoria Tunstall. Victoria has recently completed the first year of a two-year PGCE teaching qualification at Keele. **Peter Sherratt**- runner up. Peter is working for BG Group plc as an exploration geologist.

Information supplied by Stuart Egan, Keele University

Mineral collecting and conservation – hammering out a future?

Harold Riley Suite, University of Salford, Wednesday 16th April 2003, 10:00 to 16:30

This one-day conference aims to discuss the different aspects of mineral collecting and the best way of conserving the available mineral resource for future use by all interest groups. Collecting is fundamental to mineralogical research, and for educational, commercial and aesthetic purposes, but indiscriminate activity can deplete or destroy a mineralogical site. The meeting will be co-convened by English Nature, the Geological Society's Geoconservation Commission and the Russell Society. Registration is £25 and this fee includes car parking (the venue is also a short walk for Salford Crescent Station), tea/coffee, lunch, a conference pack and the conference proceedings. Numbers may be limited, so please register early.

For further information contact: Jennifer Yau, Environmental Impacts Team, English Nature, Northminster House, Peterborough, UK PE11UA (01733 455504).

Report on Geowatch Activities

➤ 5 / 6 June - Staffs Wildlife Trust at Staffordshire County Show

We had two successful days in the SWT tent at the County Show, many thanks to all of the helpers. The NSGGA has adopted a plot of land at Wolseley Bridge with the money that we donated from the proceeds.

➤ 3 July - Ashley Beavers

20 beavers each made their own "Dinosaur Mobile" using the design and procedure developed by Janet Fairclough. This was by way of a practice run for the day at the Potteries Museum on 10 August. We have been already been asked to go again next year.

➤ 1 / 2 / 5 August - Stafford Community Libraries

Carol and Mike visited Baswich, Holmcroft and Rising Brook Libraries (3 morning sessions) at the request of the Stafford Library Services Department. In total 43 children and parents attended.

➤ 10 August - Potteries Museum:

Some 50 children and parents spent a very enjoyable day at the museum. Once again, many thanks to all of the helpers. The main activity was Janet's "Dinosaur Mobile", which was a huge success. One child thought that he was going to make a "Dinosaur Mobile Phone". There was also fossil casting and the "Life on Earth" Geological Time Display. A report and photograph were published in The Sentinel on Monday 12 August.

➤ 27 August - Dudley Museum

At very short notice Graham Worton asked us whether we could arrange for some children to go to the museum with a selection of their fossils. BBC TV wanted to record a report about children and their fossil collections. Two families went down with Carol and I and thoroughly enjoyed the morning, in spite of the fact that BBC TV didn't turn up. Graham Worton and Dr Dave Ray examined the children's collections and identified the fossils for them. Michael Potts was delighted to learn that in one piece of Silurian limestone there are no fewer than 5 trilobite parts, including a complete rolled up trilobite. Louise Barker and her brother Simon were surprised to learn that they had a pyritised piece of dinosaur dung.

➤ 3 September - Brown End Quarry

Phil Pye and I supported Gig Hardy of SWT at a children's "Family Fun with Fossils and Flowers" day at BEQ. Some 24 children plus parents had a successful day and most of them found interesting fossils.

➤ **21 / 22 September - Dudley Museum and Wren's Nest**

A group of 30 children and parents went to Dudley Museum to the Rock and Fossil Fair on Saturday morning 21 September and after a picnic lunch at the Wren's Nest Visitor Centre we all went fossil hunting at the Wren's Nest National Geological Nature Reserve. Dr Dave Ray kindly agreed to accompany us during the afternoon and was in great demand identifying the children's finds. Carol and I spent Sunday helping Graham Worton (Keeper of Geology at Dudley Museum) by doing fossil casting in the children's activity room.

Mike Fereday GeoWatch leader

Geowatch - Future Activities

12 October - Potteries Museum: Learn all about life in the Silurian Period of Geological Time and make your own picture of a Silurian seabed. See the collection of trilobites and other fossils from Dudley Museum and learn how they lived from Graham Worton (Keeper of Geology, Dudley Museum). Bring along any fossils for Graham to identify for you. Have fun with a Remote Controlled Trilobite.

We will also have a children's story time all about "Terry the Trilobite and his Silurian Friends".

In addition, Carol and Mike Fereday have been requested to visit Congleton U3A, Stone and Cellarhead Wildlife Watch Groups, Gayton Youth Club nr Stafford and Doxey Primary School and possibly Stafford Home Education Group.

Also look out for details of the National Science Week activities at the Potteries Museum on **Saturday 8 March** and **Saturday 15 March** in association with the NSGGA display - **Alien Worlds**.

Keele Continuing & Professional Education Course 2002/3

On The Rocks: Dr Ian G. Stimpson

Ever wanted to be able to identify the rocks in a cliff or the pebbles on a beach? This course provides an introductory guide to rocks and minerals, how they are formed, where they came from and what they can tell us about the environments of times past. You will learn how to identify different rocks in hand specimen and how to use a petrological microscope to see crystals and textures that they contain.

Venue: School of Earth Sciences and Geography, William Smith Building, Keele University

Course Starts: 12 October 2002

Timing: Saturdays, 9.30am – 1.30pm (10 fortnightly meetings)

Fees: £56 Standard; £32 OAP; £9 Unemployed/IRB

More details from: The Centre for Continuing and Professional Education, Keele University,

FREEPOST (ST1666), Newcastle, Staffs ST5 5BR. Telephone: (01782) 583436

Email: enquiries@cpe.keele.ac.uk Web: www.keele.ac.uk/courses/cpe/

Ian Stimpson

Geology and Scenery on the Island of Mallorca: a field study course

18 - 25 March 2003, course director - Tony Benfield

The spectacular mountain and coastal scenery of the west of Mallorca, where this week-long field study course will be based, is in marked contrast to the low-lying south and east of the island to which most visitors go. The course will allow participants to understand the geological reasons for this difference; trace the island's 240 million-year history of changing environments and see the effects of the powerful earth movements that it has experienced.

The course fee will be approximately £610.00 and a deposit of £140.00 is required no later than 1 November 2002. The course is limited to 16 students.

For further details contact: Tony Benfield, Geocourses, 24 Gascoigne Avenue, Barwick-in-Elmet, Leeds LS15 4LW ☎ 01132 812906 (any time).

Good home needed for past copies of the GA circular

Dorothy Wright has a set of back issues of the GA circular, for which she wants to find a good home. If you are interested please contact her on 01782 721576.

NSGGA - Next Committee Meeting

* Thursday 28 November 2002 at 7.00pm

in room CBA1.077, Chancellor's Building, Education Department, Keele University

Staffordshire RIGS Group

* Tuesday, 8 October, 2002 at 7.30pm

at the Staffs. Wildlife Trust offices, Coutts House, Sandon. Contact Sue Lawley at the SWT for details ☎ 01889 508534 or contact SRIGS Chairman, Ken Rout ☎ 01785 662291

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Executive Committee (honorary):

Dr. Colin Exley; Terry Jones; David Thompson; Ted Watkin.

Executive Committee (elected):

**Mike Fereday; Alastair Fleming; Elizabeth Hallam; Phil Pye; John Reynolds;
John Winchester.**

Executive Committee (co-opted):

Ken Rout; in addition a representative from the Staffs. University Geol. Soc. and the Keele Geol. Soc. is invited to attend committee

Why not visit the NSGGA web pages: www.esci.keele.ac.uk/nsgga

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