

# Bulletin Number 62 July 2002



## NSGGA Field Trip Programme for 2002

**Sunday 21 July 2002**

**Clent Hills and St George's Land, West Midlands**

Leader: Graham Worton (Keeper of Geology at Dudley Museum).

Meet at 10.15am. Park in Elgar Road / Vicarage Road (off High Street Pensnett, A4101) and walk up to the steel cross next to the church on the summit of Barrow Hill, Pensnett, Dudley

OS Grid reference SO 917 817.

**Sunday 11 August**

**Castleton Area in the Peak District, Derbyshire.**

*Problem solving in the Peaks using rocks to teach about the Earth.*

Leader: Chris King (University of Keele).

Meet at 10.30am on the roadside near to the entrance of the Blue John Mine, Castleton

**Weekend 14 / 15 September**

**Isle of Wight**

Leader: Museum Staff of the Dinosaur Isle Museum and Paul Newton

*The Essex Group of the GA have invited NSGGA Members to their excursion,*

*If you are interested please contact David Turner of the Essex Group on 01245 267450*

**Saturday 28 September**

**Cotton Dell, Oakamoor, Staffordshire**

Leader: Ken Rout (NSGGA)

Meet at 10.30am at the Staffs County Council car park and picnic area at Oakamoor,

OS grid reference SK 060 455. A working visit to survey and evaluate the RIGS site.

**Saturday 5 October**

**Malvern Hills, Worcestershire.**

See preview notice inside

[Further field trip details](#) included within this Bulletin or please contact either

Janet Fairclough ☎ 01782 641812 e-mail: [jfair1sc@btinternet.com](mailto:jfair1sc@btinternet.com) or

Carol Fereday ☎ 01782 713227 e-mail: [carol@burnett40.freeserve.co.uk](mailto:carol@burnett40.freeserve.co.uk)

### Forthcoming NSGGA Talks

➤ **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

➤ **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. Further details in the next Bulletin.

## Darwin in Space

NSGGA Member Phill Parker of Newcastle-under-Lyme - who successfully flew The Millennium Rock in orbit around the Earth aboard the Russian MIR Space Station - from August 1998 to August 1999 - is to fly a small memento aboard a spacecraft that will leave our Solar System and head for the stars that will further commemorate Charles Darwin and his 'Theories of Evolution'.

Phill flew a small piece of igneous rock - called "The Millennium Rock" - that came from the very spot that Charles Darwin discovered in 1842 at Butterton, North Staffordshire.

The '*Millennium Rock*' travelled over 380 million kilometres in space aboard the MIR Space Station before returning to Earth. It was displayed in 1999 at The Potteries Museum & Art Gallery, Stoke-on-Trent and was displayed over the millennium change (Nov 1999 to Feb 2000) at the USA Kennedy Space Center in Florida - where half a million visitors had the opportunity to view it in the IMAX Theatre Gallery.

Now, as a further tribute to commemorate Charles Darwin and his famous 'Theories on Evolution', Phill is providing a small decal that will fly on board the "*Team Encounter*" spacecraft that will be launched in a few years time (c.2004) on a mission that will see it leave our Solar System and head for the Stars.

Maybe, in a few hundred thousand years or so, another species may intercept the spacecraft and try to decipher the materials on board. Included amongst those materials, of course, will be the small tribute to Charles Darwin - the father of theories of evolution on the planet Earth.

*Team Encounter* is building and will launch a revolutionary solar sail-powered spacecraft that will transport a three-kilogram payload out of the solar system. The payload will include messages, drawings, photographs, and DNA signatures submitted by up to 4.5 million participants.



The spacecraft consists of a rocket-powered "carrier" that will boost the spacecraft out of Earth orbit, and a "sail craft" that will use a giant solar sail to carry the payload out of our solar system. Solar sails harness the pressure of sunlight, just as the wind pushes a sailboat. Sunlight pressure is very slight, thus a solar sail must be extremely large relative to its payload. Similarly, the mass (or "weight") of the solar sail is best minimised by making the sail out of ultra thin, highly reflective material.

Both the carrier and sail craft are due for launch aboard a European Ariane-5 rocket in early 2004. Approximately 110 days after leaving Earth orbit the sail craft will pass the orbit of Mars at a distance of 1.5 AU\*, from the Sun. The sail craft will pass Jupiter's orbit 1.4 years after leaving Earth's orbit. At the 1.9 year mark, when the sail craft will have travelled to a point between the orbits of Jupiter and Saturn at 6.8 AU from the sun, it will achieve Escape Velocity -- the velocity required to escape our solar system. Some 13.5 years after leaving Earth's orbit the sail craft will pass the orbit of the planet Pluto at 39 AU from the sun. When it leaves our solar system it will be travelling at a speed of 7.8 miles per second (12.5 km/sec)! Yet due to the immense distances of interstellar space it will take the sail craft approximately 100,000 years to travel as far as the distance to the nearest star, located some 4.2 Light Years away.

\*AU stands for Astronomical Unit, 1 AU = distance from the Earth to the Sun (149,598,550.00 kilometres)

## Preview - Malvern Hills fieldtrip, Saturday 5 October 2002

Leader Prof. John Winchester has provided the following as a guide for the fieldtrip.

The programme will be a mixture of metamorphosed igneous Malvernian rocks (intruded around 670 Ma, metamorphosed around 650 Ma etc.); Warren House Group volcanics (extruded around 566 Ma) and fossiliferous Silurian rocks ranging in age from 435-420 Ma.

Tollgate quarry is a likely first stop to look at Malvernian foliated granites and a very grotty altered pyroxenite. Then to Wynds Point where we can walk 1km along a track to Clutters Cave to see Warren House Group pillow basalts and a short distance east to see the associated rhyolites (and 1km back of course) Then to Gullet Quarry - more Malvernian (metadiorites veined with granite) unconformably overlain by fossiliferous Lower Silurian Then to a quarry near Ledbury to see fossiliferous Wenlock Limestone, and finally to see Ludlovian Aymestry Limestone at Chance's Pitch. I don't think we'll have time to see the Ludlow Bone Bed - it has been eroded in by collectors anyway!

*Field Secretary Janet Fairclough writes: We are considering the possibility of organising a minibus for this visit; cost will be approximately £8 to £10 depending on numbers (plus the field fee of £2). **If you are interested in travelling by minibus please complete the reply slip on the fieldtrip flyer.***

## Personal Accident Insurance Notice

Each person attending field meetings does so on the understanding that they attend at their own risk. The NSGGA has

**Public Liability Insurance Cover for field and indoor meetings, but Personal Accident Cover remains the responsibility of participants.**

## **Review - Charnwood Forest fieldtrip 14 April 2002**

12 members of the NSGGA joined members of the West Midlands Open University Geological Society (WMOUGS) in a joint field trip to Bradgate Park and the surrounding area in the Charnwood Forest. The leader was Helen Boynton, a specialist in the Precambrian *Ediacara* fossils of the Charnian Supergroup. She was assisted by John Carney from the University of Leicester.

We visited a number of sites in Bradgate Park such as the Beacon Hill Formation (*Ediacara* fauna 560 Ma, sedimentary sandstones and mudstones with turbidite sequences, volcanic clastic sequences and calcalkaline volcanics from an island arc off Gondwanaland). From the top of the hill we could see outcrops of the Bardon Hill and Whitwick volcanic complexes and the Mount Sorrel granodiorite.

The fossils are the remains of soft-bodied fauna of which there are no modern equivalents, they are trace fossils and their form is of disks and fronds such as *Charnia masonii*. In the stable enclosure below Old John Tower meduzoid disks and floats of fronds can be seen if you have the eye of faith and somebody points to them. The Sliding Stone Slump Breccia shows signs of debris flow and turbidite structures.

In the famous Fossil Bedding Plane 46 fossils have been identified including *Bradgatia linfordensis*, and *Charnia diskus concentricus*, the best examples are preserved in the Leicester Museum.

Other sites visited were the "Bomb Rock" locality (Charnwood Lodge volcanic formation of proximal volcanism of equivalent age to Bradgate Park), "Ratchet Hill" near Whitwick Quarry (Swanny Malt Breccia, with plagioclase phenocrysts and Sharpley porphyritic dacite).

All participants thoroughly enjoyed the day out.

Mike Fereday

## **Review - Gower and The Vale of Glamorgan Weekend 27 & 28 April 2002**

The weekend was the annual joint field trip with the Essex Group of the Geologist Association and began on the Friday evening with an introductory talk and slide show by our leader Dr Geraint Owen, of Swansea University. Geraint's knowledge and enthusiasm for the area increased our enthusiasm for the weekend's field activities.

9am on Saturday morning and the Group set off in convoy for Caswell Bay where we were able to examine in detail the Carboniferous Limestone succession and see how the complex folding and faulting gives the South Gower its attractive coastline of cliffs and sandy bays. On towards Whiteshell Point, where we examined a Triassic wadi lying unconformably on Carboniferous Limestone and saw good examples of head and a raised beach which can be related to glacial-interglacial climate change in the Quaternary and Holocene. After lunch we moved on to Cefn Bryn - one of the three high points on Gower at 186m and formed by the core of Devonian Old Red Sandstone (ORS) in the anticline and looking north to the Burry Estuary and the Brecon Beacons. Fortunately the visibility was good, and so we were able to see clearly the main elements of the physical geography and relate these to the geology of the area, which is designated as an Area of Outstanding Natural Beauty (AONB).

Rhossili with its magnificent three-mile sandy beach and its large interesting solifluction terrace was our next field site. Unfortunately the weather deteriorated and our walk along the cliff tops to see the karst features of the limestone outcrop in the dry valley of Mewsdale was somewhat spoilt by driving wind and horizontal rain. We did not have sufficient time to go over on the causeway to Worms Head but watched in horror as two people became cut off on the first island by the rapidly rising high spring tide. One member of the Group reported the incident when they got back to the gift shop and were told that they would send out a rescue vehicle. (An all too common occurrence, I'm afraid). We all returned to the hotel to dry out and later Dr Owen and his wife joined us for dinner.

Sunday morning dawned fine and sunny and after a full Welsh breakfast, we followed Dr Owens excellent written directions to the cliffs at Ogmores-by-Sea in the Vale of Glamorgan. While we waited for the tide to go out there was an unusual presentation. Our hotel, which occupied a dominant position of the Swansea sea front, had magnificent sea views from many of its bedroom windows but was more used to catering for school parties and students than mature amateur geologists. It soon became obvious that each of the rooms provided its own very special challenge to its occupants, so after a late night inspection tour it was decided that John and Mary Reynolds should receive the "Plastic Cup and Picnic Bar Award" for the most innovative room. A £1 coin, found at the back of a loose skirting board in our field trip organiser's room was added to the prize.

The receding tide allowed us to examine the small cliffs and foreshore platform of Ogmores-by-Sea beach. The Carboniferous Limestone, which can be related to the high-energy storm deposit High Tor Limestone that we had examined at Caswell Bay, contained some magnificent examples of Carboniferous corals and brachiopods.

Geraint then directed us to the east side of the beach to see Triassic wadi breccias lying unconformably on the Carboniferous Limestone. Then with the agility of a mountain goat he set off over the rocks, with the rest of the party following with considerably more caution. Here we examined a fossiliferous Lower Jurassic marginal marine deposit lying unconformably on the Carboniferous Limestone.

Back to the car and then on a short distance along the coast to Dunraven Bay, a very popular destination for holidaymakers where the weather began to deteriorate, the wind got up and the heavy showers began again. Nevertheless we donned waterproofs and hard hats and set off across the beach to find the angular unconformity between the Carboniferous Limestone and the marginal Lower Jurassic. The best exposure was seen only by the most agile as it was on a small promontory stretching out into waves. The rest of the group made their way, backs to the wind and rain, to examine the spectacular folding and faulting affecting the Lower Jurassic rocks of the cliff, and spent time collecting bivalves and small ammonites eroded from the open marine "Blue Lias" facies of the cliff.

Our final site Bendrick Rock, Barry was reached via path which ran around the outside of the security fence round HMS

Cambria, and although it appeared to be deserted we felt that we were being closely observed by security cameras all the way round. We finally reached the coastal path and searched in the marginal Triassic rocks, which were deposited by flash floods in a desert environment, for dinosaurs' footprints. With Geraint's local knowledge and a geologist's "eye of faith" we did find the track way of what is thought to be a small three-toed dinosaur. A very suitable conclusion to an excellent weekend of fieldwork.

Many thanks should go to Janet Fairclough and her team for the excellent organisation for the weekend, and to Dr Owen for his outstanding good humour and excellent guidance.

Elizabeth Hallam

### **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

### **Geowatch Activities Planned for 2002 - Dates For Your Diary**

- **10 August - Potteries Museum:**  
Dinosaur mobile and Ammonite Time Chart to make and take home, Fossil casting and Geological Time Display Board. We always need plenty of help on the day, it is a lot of fun and very rewarding. Any member who is interested is requested to contact Mike Fereday.
- **21 September - Dudley Museum and Wren's Nest:**  
Morning visit to Dudley Museum to the Rock and Fossil Fair and after a picnic lunch at the Wren's Nest Visitor Centre we will go fossil hunting for trilobites at the Wren's Nest National Geological Nature Reserve. We hope to run a minibus for this event. If interested please contact Mike Fereday.
- **12 October - Potteries Museum:**  
Learn all about life in the Silurian Period of Geological Time. See the 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](mailto:carol@burnett40.freeserve.co.uk)

### **Hulme Quarry Geological NNR, Park Hall Country Park, Stoke-on-Trent**

On 18th April 2002 Hulme Quarry SSSI, part of Park Hall Country Park straddling the Stoke-on-Trent/Staffordshire boundary, was officially designated by English Nature a National Nature Reserve for its Geology. This is a key site in our understanding of Triassic environments and contains spectacular exposures of conglomerates and pebbly sandstones, including a sequence of individually graded cross beds younging northwards. The quarry gives its name to the Hulme Member of the Sherwood Sandstone Group.

Professor Malcolm Hart, EN Council member, caused much amusement when he called for a geological hammer before his speech at the unveiling. The only one found was extracted from the boot of the official EN car and provided not only scale but a reminder to those who view the photographs in years to come that this is one of a rare breed of National Nature Reserves - designated for their geological importance!

The day was more than just about Hulme Quarry. It was a celebration of the launch of Stoke-on-Trent's Natural Heritage Strategy, covering over 20 sites in the City. Most are of biological interest, but with glacial erratics at Bucknall and Tunstall Park, Baddeley Edge RIGS [Chatworth Grit, Namurian] and Park Hall with Hulme Quarries SSSI, the geological aspects of Stoke's natural heritage have been taken on board.

Longton Town Hall, built with local Triassic Hollington Stone, was the morning venue for short presentations on various aspects of local natural heritage. Ian Collis, Environmental Initiatives Manager, Dept of Environment & Transport, introduced the Lord Mayor, Councillor Bill Austin MBE who duly opened the proceedings. Pat Callaghan, Chair of Staffordshire Wildlife Trust gave the overview on valuing Stoke-on-Trent's natural heritage. Nicola Farrin, organiser of the day and member of Stoke's Environment Team outlined the content of the City's Natural Heritage Strategy and reminded the assembled guests that geological things are included!

Dave Harvey, also of the Environment Team, looked at Berryhill Fields as an example of a natural heritage resource. Colin Hayes, of Ecology First, looked at problems of Westport Lake Park and Nick Mott, of Staffs Wildlife Trust, treated us to views of the life and habitat of water voles.

At the back of the room the assembled throng from NSGGA began to stir.

Dr Patrick Cossey, Staffs University and Dinantian expert, moved up the sequence to give a briefing on the geological importance of Hulme Quarry. Immediately afterwards Professor Malcolm Hart let out the worst-kept secret of the new millennium by making the official announcement that Hulme Quarry SSSI is now a Geological National Nature Reserve. [Applause all round].

The Lord Mayor thanked everyone concerned and declined the later visit to the quarries with the excuse that he was booked to spend the afternoon kissing babies - or words to that effect!

Guests were able to view the displays put up by various organisations. The NSGGA display included Tony Pugh's paintings,

local geological maps and several of the Jubilee Display panels.

After a buffet lunch and official unveiling, John Reynolds and Don Steward [Potteries Museum] led the site visit for a hands-on look at what all the fuss is about. A re-typed version of a favourite teaching exercise on pebble identification proved a useful aid for the visitors to analyse one aspect of the provenance evidence. Additionally Ivor Beeston and Neil Harrison, representing the park wardens, gave details of aspects of the wildlife interest. Also in the afternoon a group of Year 6 children from the nearby Weston Coyney Primary school were working in the Visitor Centre on a geological time project with Mike Fereday, NSGGA Geowatch co-ordinator, and helpers Carol Burnett, Colin Exley and Keith Harrison. Further activities for children took place on the Sunday. At the unveiling the children were gathered together for a photo opportunity. The Sentinel and City News both had good reports and photographs, but The Sentinel confused English Heritage with English Nature!!

A point stressed by Professor Hart was that these quarries are of great importance for their educational value. Until recently the Open University bussed in 5 or 6 coachloads of Science Foundation Course students each Sunday morning of the Keele Summer School. They were also key locations for field visits when the British Association for the Advancement of Science held their meeting at Keele in 1993 and for the Earth Science Teachers' Association in 1997, also at Keele. NSGGA has visited several times and members have taken school, college, university and adult parties round to see the sites on many occasions!!

The writer's first visit was in early 1962, when they were working gravel quarries. It could have been called a school visit, but as they happened to be part of a cross-country running course, and the race was the trial for the City team, the geology took second place!

In the long run it is hoped that the Natural Heritage Strategy will help to raise awareness and stimulate public interest in the local geological /geomorphological features. Nicola Farrin, on behalf of the City Department of Environment and Transport, thanked the North Staffs Group of the GA and Staffs RIGS Group for their help in producing the Strategy and for helping on this 'launch' day.

John Reynolds

On the 18 April, Hulme Quarry SSSI, which is part of the Park Hall Country Park, was declared as a National Nature Reserve (NNR) by English Nature and Stoke-on-Trent City Council.

The network of disused sand and gravel workings at Hulme Quarry expose the spectacular Triassic red pebbly sandstones and conglomerates which should be familiar to many. Hulme Quarry is a key site in understanding the Triassic environment in both a regional and national context.

As a public open space this is an ideal NNR that provides the opportunity for visitors to experience the drama of the Triassic but also appreciate that geology is important and, like other aspects of our environment, does require careful conservation and management.

Jonathan Larwood, English Nature

## The Rock Exchange

Billed as "Britain's Premier Mineral & Fossil Show", the Peak Lapidary & Mineral Society hold their 21<sup>st</sup> 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

## Congratulations

It is a pleasure to report that NSGGA Members Carol Burnett and Mike Fereday have recently become a married couple. Carol reports that although her surname has changed, her address, telephone number and e-mail address still remain the same.

## Articles

- \* King, C. 2001\*\*

The R.H. Worth Prize awarded to David Thompson

*Teaching Earth Sciences* 26 p.159

A summary to congratulate and to give the reasons why the award was given to David Thompson, a long-time NSGGA member - see NSGGA Bulletin 60 for this Group's appreciation by Prof. Gilbert Kelling.

\*\* Copies of articles available for reference by prior appointment at The Potteries Museum & Art Gallery - 01782 232323

## Rockwatch at the National Stone Centre, Wirksworth

**Sunday 28 July, 11.00 - 3.30pm**

Come along to a Discovery Day at the National Stone Centre in Derbyshire where there'll be a whole range of activities relating to fossils, gems and crystals. You can join a fossil trail, have a go at fossil casting or make your fortune panning for gems! The cost is £4.00 per child and they must be accompanied (adult doesn't pay). This is a joint promotion between the Stone Centre, the Geologists' Association and the Earth Science Teachers Association.

Book through the Rockwatch office:

**Geraldine Marshall**, Rockwatch at the GA, Burlington House, Piccadilly, London W1V 9AG  
**phone: 020 7734 5398 or email: Rockwatchatga@btinternet.com**

## Review - Ercal Quarry fieldtrip 9 June 2002

Sunday 9 June dawned cloudy but dry (thus far). 10 members of the NSGGA duly arrived at Forest Glen car park, hand lenses

polished, hammers at the ready, coloured pencils honed, chomping at the bit, ready for a day of geological discussion and mapping of the Ercal. Minutes ticked by and by now the rain trickled down, but our erstwhile leader had not arrived. Optimistic cries of "Here's a car now" were followed by disappointment as they either turned into Buckatree Hall or carried on to Little Wenlock. By eleven o'clock we decided that our leader was not able to make it and so we set off armed with a GA Guide to the Ercal, the encyclopaedic knowledge of Dorothy (Wright), two Open University students, enthusiasm and a wonderful sense of humour, but then we are British, nil desperandum

In Quarry 1 the Guide(s) proved invaluable and we were able to recognise most of the rocks and geological features described, although a dyke proved somewhat elusive to the untrained eye. We found classic examples of flow-banded rhyolites, rhyolitic lavas, subjected to rapid cooling, presenting in some places as glassy rhyolites which had since devitrified showing spherulitic textures. Some of these structures are hollow and can be called lithophysae.

The second quarry that we visited is noted for its spectacular granophyre, a boss-like intrusion into the Uriconium Volcanics, which in turn is overlain by the Wrekin Quartzites (WQ) unconformably. The WQ provided us with excellent examples of bedding planes, with classic ripple marks on the exposed surfaces. There are several discernible examples of faulting and near the entrance of the quarry there is an 8 metre high cliff showing a slickensided fault plane within the WQ.

At lunch time the rain had become monsoonal so we repaired to our cars for sustenance, waiting to see if the afternoon brightened up before deciding whether or not to stay or cut our losses and return home to World Cup football or the omnibus edition of Eastenders!!!??!

As the rain did eventually ease, but not the enthusiasm of the group, we decided that we would progress up through the succession to Maddock's Hill Quarry and the graptolitic beds of the Shineton Shales, where we scoured the scree for the elusive *Dictyonema*. I hadn't realised just how permeable shale was, until every piece that we split open, hoping for a fresh face on which to detect the dendritic graptolite, proved to be running with water and thus making positive identification almost impossible. However it provided a valuable lesson in patience until the rain returned with a vengeance. Still the British Stiff Upper Lip prevailed and determined to see as much geology as possible; we set out to find the baked margins of the late Ordovician lamprophyre sill which had been intruded into the Shineton Shales. The intrusion has been classified as a spessarite, although previously it was called camponite. It is a medium-grained intermediate rock with abundant plagioclase feldspar, pyroxenes and minor alkali feldspars. This proved a really satisfying exercise, especially as out came the Sun, so did the hand lenses and the humorous quips. This exposure brought a cornucopia of geological specimens, discussion and a fitting end to our day.

I think we were all a little disappointed that Ian was not able to make it, but between us we were able to pool our knowledge and make sense of the geology around us. We may not have been 100% accurate but it was a first class exercise both in both geology and the unsurpassed sense of humour of our members. Thanks to all who attended for an excellent day.

Janet Fairclough -Field Secretary

## 21- 22 September 2002 - Dudley Rock and Fossil Fair 2002

One of the UK's largest and most varied festival of fossils, minerals, rocks and the wonders of the solid Earth returns to Dudley Museum and Town hall complex on the weekend of the 21 / 22 September 2002. This year it promises to be bigger and more ambitious than ever!

This will be a spectacular celebration of the treasures of the Earth and the dramatic stories that they tell. For more information of how to book a stand or become involved in the fair or other museum activities visit our website on [www.dudley.gov.uk](http://www.dudley.gov.uk) or contact us at Dudley Museum on 01384 815575.

## Editor's Note

A **BIG** thank-you to all the contributors to this issue. It makes production of the Bulletin much more satisfying and hopefully the product is more interesting to Members. Please keep supplying notes for inclusion in future issues.

## NSGGA - Next Committee Meeting

\* **Thursday 19 September 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](http://www.esci.keele.ac.uk/nsgga)**

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