The Black Country Geological Society

NEWSLETTER No. 179
OCTOBER 2006

The Society provides limited personal accident cover for members attending meetings or field trips. Details can be obtained from the Secretary. Non-members attending society field trips are advised to take out your own personal accident insurance to the level you feel appropriate. Schools and other bodies should arrange their own insurance as a matter of course.

Leaders provide their services on a purely voluntary basis and may not be professionally qualified in this capacity.

The Society does not provide hard hats for use of members or visitors at field meetings. It is your responsibility to provide your own hard hat and other safety equipment *(such as safety boots and goggles/glasses) and to use it when you feel it is necessary or when a site owner makes it a condition of entry.

Hammering is seldom necessary. It is the responsibility of the hammerer to ensure that other people are at a safe distance before doing so.

In this edition:

MEMBERS' EVENING will start at 7.00pm Monday 27th November

Copy date for December Newsletter is **Monday 4th December 2006**

FUTURE PROGRAMME

Lecture meetings are held at Dudley Museum, St James's Road, Dudley.
Phone (01384 815575)
7.30 for 8 o' clock start unless stated otherwise.

MONDAY 30TH OCTOBER 2006 *(Indoor Meeting)*

Dr. Jacqui Malpass: "The Brymbo Fossil Forest."

Jacqui Malpass is a graduate of the Open University who studied marine flooding surfaces in Sinai, Egypt for her PhD at Manchester University. The Brymbo Fossil Forest was discovered during a Geodiversity audit of north-east Wales. The talk will describe the Brymbo Fossil Forest in the Carboniferous deposits which is reputed to be even better than the long famous Glasgow find, which has been featured, albeit with a little artistic licence, in encyclopaedias over the last century. The struggle now is to preserve it from weathering and the predations by Homo sapiens.

FRIDAY 24TH and SATURDAY 25TH NOVEMBER *(Conference)*

HISTORY of GEOCONSERVATION CONFERENCE
DUDLEY MUSEUM AND ART GALLERY

Details of this important National Conference are to be found at the end of this Newsletter (page 11). There is a reduced registration fee for members of our Society.

MONDAY 27TH NOVEMBER 2006 *(Indoor Meeting)*

Members Evening: Please contact Gordon Hensman on 01384 256423 if you would like to contribute. You do not have to give an illustrated presentation, if you have an interesting or unknown specimen or some maps or photographs that you think are interesting. Please bring them along. It is a very informal evening with a break for light refreshments. **7.00pm start.**

MONDAY 29TH JANUARY 2007 *(Indoor Meeting)*

Neil Rushton,: (Team Leader Engineering Advice Telford and Wrekin)

"Landslips in Telford."

Neil spoke to the Shropshire G.S. on 11th January 2006.

MONDAY 26Th FEBRUARY 2007 *(Indoor Meeting)*

Dr. Cynthia Burek: (University of Chester)

The role of Women in the History of Geology

This is a joint meeting with the West Midlands Regional Group of the Geological Society.

ADVANCED NOTICE OF FIELD TRIPS FOR 2007 SEASON

Our Field meetings secretary is hard at work putting together a schedule of trips for next year, commencing in February with a trip to Warwickshire Museum, using public transport. Here is a taster of things to come; we'll get more details into December's Newsletter so watch this space!

Warwickshire Museum – February
Forest of Dean
Abberley Hills
Wenlock Edge Quarries
Jurassic of Warwickshire
Next year's subsidised coach trip will be in June, to the Natural History Museum.

In addition to all that, there is also a proposal for an extended trip to the Chaine de Puys in France in conjunction with our sister societies, in particular the North Staffs GA.

OTHER SOCIETIES

NORTH STAFFS GROUP of the GEOLOGISTS' ASSOCIATION

Meetings in the School of Earth Sciences and Geography, Keele University. 7.30pm

THURSDAY 12th OCTOBER: Dr Richard Waller (Keele University)
Glaciers, Ice Ages and the British Landscape

THURSDAY 9TH NOVEMBER: Dr Dave McGarvie (Open University)
Volcanic eruptions into Iceland's glaciers

(Information from NSGGA Secretary; Eileen Fraser – 01260 271505)

WEST MIDLANDS REGIONAL GROUP of the GEOLOGICAL SOCIETY

TUESDAY 14TH NOVEMBER: Simon Stowe (Stratascan)
The use of Geophysics in ground investigations

6.30pm; Wolverhampton University, Room 202, School of Applied Sciences, Wulfruna St. Wolverhampton.

SHROPSHIRE GEOLOGICAL SOCIETY

There are a large number of anniversaries and celebrations at the moment, and 2007 marks 200years of the foundation of the Geological Society of London, the world's leading geological society. As part of this the Shropshire Geological Society is organising the 'Marches Festival of Geology 2007'.

The regional geology of the Marches is classic. Indeed, the area has been portrayed as "The Geological Capital of the Country" and many have felt this should be reflected in the Bicentennial Celebrations of the Geological Society of London. A number of organisations in the Marches have therefore agreed to collaborate to run a festival to celebrate their 200th anniversary which will also be the 150th anniversary of the Geologists' Association and, incidentally, the 175th anniversary of Murchison's epic visit to the area that led to publication of *The Silurian System*.

The festival will be centred on a one-day symposium in Ludlow, on Thursday 13th September 2007, on the theme of "The ground beneath our feet: 200 years of geology in the Marches", supported by fieldtrips, exhibitions and workshops. It will be aimed at a range of people including local children and adults, amateur geologists, and geologists with research interests in the Marches. Related activities are timed within a month or so either side; these will all be listed in a brochure to be published in the autumn and details are already appearing on the Festival web site:
http://www.shropshiregeology.org.uk/festival

The symposium's aim is to attract a wide range of attendees by focusing on five themes of general as well as regionally significant interest, each with a pair of speakers: one with a national reputation and the other a local expert. There will also be an accompanying poster display. The working titles of the five themes are:

- The Marches in the past: on the edge of a lost ocean
- The Ice Age: on the edge of a glacier
- The mark of distinction: how local character is shaped by landscapes and building stones
- Geology in the community: evolving perceptions and realities
- The future for geology in the Marches

Events will be run throughout the summer months aimed at children of all ages. The core activities will be held at the Ludlow Museum Resource Centre in order to utilise their facilities. These will include workshops on “rocks are simple but fun”, “interactive video microscopy”, “fossil masks” and “geological painting”.

The Hereford and Worcester Earth Heritage Trust are hoping to mount their Rock and Fossil Road Show in Leominster, close to Ludlow. Both the Herefordshire Heritage Service and the Shropshire Museum Services will be mounting exhibitions. There will be a Bicentennial Exhibition at Hereford Museum and the Ludlow Museum Resource Centre will prepare an exhibition in support of the five themes in the symposium. In addition, it is planned to mount and display the posters prepared by John Fuller for the Geological Society’s History of Geology Group meeting in the late 1990’s, on the theme of early geological studies in the region.

There are fieldtrip opportunities for fossil-hunting (Wenlock Edge, to be led by the SGS) and raising awareness of the landscape (a geological walk up Caer Caradoc, near Church Stretton, to be led by the SGS) in addition to reviewing the geological science of the region. Another fieldtrip will study the bedrock geology and glacial features in the Wigmore area, visiting classic localities made famous by Murchison's early fieldwork in the company of the Rev Thomas Lewis, to be presented as an historical re-enactment of the early Woolhope Naturalists' Field Club to the area (to be led by the Woolhope). The programme will also permit attendance on the Geological Society’s own Bicentennial fieldtrips to Ironbridge Gorge and the Malverns.

The strategy to further encourage local participation is to invite poster displays and to offer to publish these or supporting papers in the SGS Proceedings. Thereby it is hoped to encourage contributions by individuals, local schools and amateur geology groups (U3A, WEA, SGS, Woolhope and BCGS), and provide a public outlet for the workshops run by the County Museum Services.

This is to be a co-ordinated effort involving the Shropshire Geological Society, the Woolhope Naturalists' Field Club Geology Section, the Ludlow Museum Resource Centre (part of the Shropshire County Museums Service), the Herefordshire Heritage Service (the County museum service), the Hereford and Worcester Earth Heritage Trust, the Ludlow Research Group and the West Midlands Regional Group of the Geological Society.

The Festival web site at http://www.shropshiregeology.org.uk/festival is used for notification of all events and dissemination of related information, including registration.

WELCOME TO NEW MEMBERS

The following new members joined since the last newsletter. A warm welcome to you all!

Ian Roe

Stuart Williams

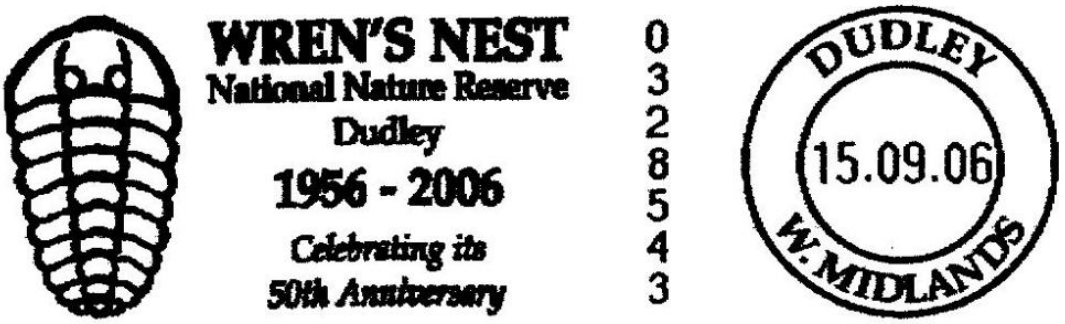
Jenny Hicken

Phil Hall

CONGRATULATIONS

Congratulations to our former Chairman and long time member of the Society Graham Worton, who was recently awarded the Gold Award for ‘Outstanding Customer Service’ at the Heart of England Tourism Awards. He will now go on to represent the region in the National Tourism Awards next year.

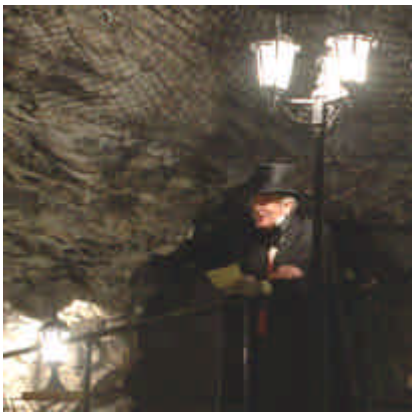
EDITORIAL



Graham Worton with Alf Cole at the Rock and Fossil Fair.

Many members will have received letters bearing this postmark in the past few months, and it marks an important event which has been celebrated with activities across Dudley. In early September there was the 'Wren's Nest Conference' at the Mons Hill Campus. This was a geological master class with fourteen speakers giving short presentations on various aspects of the Wren's Nest, geological, historical, artistic and social. There were professors and other academics, together with leading figures in geological and environmental national bodies. Everyone was emphasising the international importance of this small area of the Black Country.

On the Saturday morning many of these experts walked round the Wren's Nest with Graham Worton. This is the best sort of fieldwork, where every outcrop is inspected and discussed by palaeontologists, sedimentologists and generally interested geologists, both professional and amateur.



Two weeks later, society members were helping at two day Rock and Fossil Fair, another great success extensively covered in the local press. This was followed by a celebration on the actual day of the anniversary, 27th September, with a canal trip underground to celebrate not only the National Nature Reserve, but also the fame of the Wren's Nest in the Victorian scientific world. Our vice-chairman and one of our founders Alan Cutler re-enacted the speech given by Sir Roderick Murchison in 1849 to 15,000 celebrants in the Wren's Nest caverns. (right) Several participants wore Victorian dress for this splendid occasion. The final big event of this year is 'The History of Geoconservation conference' at Dudley Museum and Art Gallery on 24th -25th November. Yet another important national event, details of which can be found at the end of this Newsletter.

In all of this we must not forget the role of our own Black Country Geological Society. Founded in 1975 by a few enthusiasts, many of whom are still very active within the society, it was set up as a pressure group, dismayed at the rate at which valuable geological sites were being lost to development. It was concerned with all the Black Country; indeed the earliest battles concerned the loss of geological exposures in Walsall. Our founders can be proud of the outcomes of their efforts which have resulted in ambitious new plans for the developments of the Wren's Nest site. We must not lose sight of the initial aims of our society. As Graham Worton pointed out in his speech on 27th September in the caverns, the Dudley limestone and its significance has been well known and recognised throughout the world, every where in fact, except Dudley.

Bill Groves

MEETINGS REPORTS

MONDAY 25TH SEPTEMBER 2006 *(Indoor meeting)*

Mike Fereday: (North Staffordshire Group of the Geologists' Association)
"The Geology of the Chaine de Puys, France."

Mike treated us to a lavishly illustrated lecture on this fascinating area of France. I have always thought that geological maps are works of art and some can be inspirational. Mike brought some extremely beautiful maps of this region and illustrated his talk with an abundance of overhead transparencies. The Massif Central, despite its name is not in the centre of France. It is in fact more or less in the middle of the southern half of the country. It contains the highest land outside the Pyrenees to the south and the Alps to the east. Puy de Dome at 4806 feet lies just to the west of Clermont Ferrand where most French tyres are manufactured. Mont Dore at 6188 feet is a little further south and is the highest peak.

This area of the Massif Central is the Auvergne; the volcanic area is in Puy de Dome and Cantal Departments. In between are the two high volcanic plateaux of Artense and Cezallier. The Cantal is the oldest volcanic area which last erupted some 2mybp. The Chaine des Puys is a north-south chain of extinct cinder cones, domes, protrusions, maars and lava flows. The land is elevated in the form of a horst with the faulting to the east producing a steep slope which is bordered by the northwards flowing River Allier. The whole chain extends some 40 kms, with Quaternary sediments on either side. Mont Dome first erupted 3 mybp, Puy de Chanat 90,000 ybp, Puy de Lemptegy 30,000 ybp and Puy de Pariou 8-9,000ybp. The eruptions were both Strombolian and Pelean. The Puy de Dome erupted in three stages. Viscous lava emissions followed by a spine similar to the Mont Pelé eruption in 1902 on Martinique, which killed 28,000 people mainly due to pyroclastic flows. Where the extensive scoria deposits oxidised at over 600C, they turned red in colour. Where oxidation did not occur they remained black.

Both the Puy de la Vache and the Puy de la Lassola exhibit breached cones where lava flows issued forth. The Puy Pariou has a trachyte plug, and the Grand Sarcou a highly viscous onion shaped trachyte plug. The scoria/ash is being quarried for gritting purposes in winter and is used in construction.

The French have developed the tourist and educational potential of this area where the argument between the *plutonists* and the *neptunists* was settled in favour of the former. This takes the form of "The Auvergne Volcanoes National Park." Vulcania is a series of educational exhibits with simulated eruptions and earthquakes amongst many other delights. Our speaker, Mike Fereday (photo below, pointing out a feature on one of his maps) spoke of his willingness to help us organise a trip to the Park as he was familiar with the region having been there several times.

A discussion concerning the cause of the vulcanism then followed. It was generally understood that the continuing formation of the Alpine Fold Mountains as the African Plate continued its movement northwards at 1-2cms per year, combined with the stretching/distension of regions as Europe gets further away from N. America had given rise to north-south faulting, with a series of *graben like structures* such as the Rhine rift valley, with some vulcanism as witnessed by the Kaiserstuhl and Vogelsburg, the North Sea graben together with some *horsts*, associated with uplift and fracturing, such as the Auvergne region. The Eiffel region west of the Rhine between Bonn and Coblenz is another recent volcanism dating back to about 11,000 ybp when the *ring crater or maar* called the Laacher See was formed. The Alpine orogenesis has not yet finished having started some 50 million year ago in the Jurassic period. In fact the volcanism under consideration may not yet be finished as it has a history going back some 2mya, and the

most recent outbursts being only about 7,000 years ago. It is likely that there have been lengthy periods of dormancy longer than the 7,000 years which have elapsed to date.

Vulcania is situated in Saint -Ours - les Roches, 15 kms west of Clermont Ferrand, it is the European Park of volcanism and covers an area of 15 hectares. It is built largely underground to a depth of 20m in a 130m lava flow. It is an interactive and recreational theme park for volcanoes. It has a stratigraphic cross-Section, and from the surface downwards there are light coloured ashes cementing blocks of stone, from a pyroclastic flow emanating from Puy Chopine, about 9,500 ybp. Under this is a scoria fall-out from the explosion in the Puy de Come 16,000 ybp. All this lies on deposits from the Puy de Lemptegy dating back 30,000 ybp consisting of trachyandesite.

The Crater is 38m deep and shows the succession of layers deposited by the same volcano. Two enormous lava flows can be seen separated by a loose scoria volcanic deposit. All the materials have fractures in them formed when the lava cooled. The biggest of them is 50 cms wide and goes in at least 10 m. Faint rumblings and fumes escape from time to time. The meeting thanked Mike for his excellent presentation.

Gordon Hensman

FROM OUR MEMBERS

From Peter Twigg: Erratic Boulder on the Clent Hills

At the gateway to Calcot Farm on the south side of the Clent Hills, prominently seen to the west of the M5 near junction 3, sits a large boulder (photo 1 left). A plaque by it describes it as a glacial erratic from the Arenig Mountains of North Wales. This rests on the Triassic Kidderminster Formation (formerly the Bunter Pebble Beds) just a short distance from the contact with the Permian Clent Breccia. It is at an altitude of about 220 metres and only about 8 miles from the centre of Birmingham.

On closer examination (photo 2 below) it appears to be made from pyroclastic conglomerate. This structure appears to be consistent with the description in the BRG Survey of many of the North Wales Mountains, including the Arenigs, which were the result of volcanic outbursts during the Ordovician period. The volcanoes, partly submarine, were mainly localised as vent-outbursts in independent centres in different parts of the area, and they were active during different, but sometimes overlapping, intervals of time.

Surprisingly this erratic is not mentioned in Memoirs for the local area; Sheet 167 – Dudley & Bridgnorth, even though others at significantly lower elevations are described.

Letter from Bob Bucki:

In Defence of Geology.

The last edition of the newsletter contained a letter from Gordon Hensman regarding global warming that appeared at face value to dissociate geological processes from climate systems. As a baited hook from a meteorologist to evoke a response it deserves a little 'bite'. That article as a description of the effects of solar radiation on the atmosphere and related temperature changes was very interesting, but to ignore the role of planetary geology and a good proportion of the Carbon Cycle as irrelevant to global warming cannot be ignored.

The planet is best considered as a 'Whole Earth System' comprised as a number of sub systems, all interlinked of which the atmosphere is but one part. If you fancy a bedtime read around this

subject a model for this system can be found in 'Understanding Earth' by Press, Seiver, Grotzinger and Jordan which is reproduced in a simplified form below:

Atmosphere	Climate System
Hydrosphere	
Lithosphere	Plate Tectonic System
Asthenosphere	
Deep mantle	
Outer core	Geo-Dynamo System
Inner core	

The Climate and Plate Tectonic Systems interact extensively with each other and matter and energy can interchange extensively between the 'spheres'.

The statement that the only link between atmospheric Carbon Dioxide, Global Warming and Geology is the burning of fossil fuels and soil interchange is therefore erroneous as it ignores Oceanic Carbon reservoir. For the purposes of illustrating this point we can consider just one very much simplified Carbon pathway. Atmospheric Carbon Dioxide can dissolve in rainwater to produce a weak solution of Carbonic Acid. This will in the process of weathering attack minerals such as Feldspar and one of the products is the Bicarbonate ion $2HCO_3^-$ that remains in aqueous solution in groundwater. This will eventually reach the ocean via rivers and form part of the oceanic reservoir where it can react with dissolved calcium $Ca2^+$ ions to form Carbonic Acid H_2CO_3 and Calcite $CaCO_3$ that then precipitates out to form Carbonate sediments on the seafloor. These sediments will eventually become lithified and may in time be lifted above sea level to become eroded and release their Carbon back into the atmosphere. Alternatively they may be subducted at a destructive tectonic plate margin where they will be subjected to metamorphic processes and the Carbon released as a Carbon Dioxide gas seepage, or dissolved in hydrothermal fluids or vented from magma chambers through volcanic eruptions. It can be seen then that this part of the Carbon Cycle does have a longer term geological component.

The Carbon Cycle as an open environmental system should normally be in a 'steady state' where the amount of material entering the atmosphere is balanced by the amount leaving. The current global warming is now accepted by most scientists as being induced by human activity but is not an exclusive event. Global warming events have occurred in the past when viewed on a geological time scale, long before humans had evolved. What is different now is the rate of acceleration of temperature change and that is widely accepted as being linked to the burning of fossil fuels and other human related impacts such as deforestation and land use changes. We as humans have imbalanced the flux rates between atmospheric Carbon Dioxide and the Carbon storage reservoirs and continue to do so at an increasing rate. We are in effect preventing the Earth System from repairing or reversing the damage by simply overwhelming it with colossal amounts of Greenhouse gases.

Some researchers believe that past global warming events may in part have contributed to some of the mass extinction events, but that is another discussion for another time perhaps! Maybe some of our readers would like to contribute a short article on this subject for the next edition of the newsletter. It is your Society and your newsletter so please feel free to send us your letters.

Bob Bucki

BLACK COUNTRY FOSSILS

Calymene blumenbachi

Professor Richard Fortey is the current chairman of the Geological Society of London, which celebrates its bicentenary in 2007, and has fond memories of the Wrens Nest from childhood. He gave a short talk to the 50th anniversary conference explaining why the Wrens Nest is not only a holy ground for palaeontologists, but also the centre of the palaeontological universe and at the top of the list of important geological nature reserves.

Over 600 species of fossil been found on the Wrens Nest of which around 200 species are type locality fossils – that is they were identified here first. It was

from here that Sir Roderick Murchison using the fossils of Dudley created the Silurian system and gave lectures within the caverns beneath Wrens Nest.

The symbol of Dudley, which appears on the towns' coat of arms, is a type species of Trilobite called *Calymene blumenbachi Brongniart*, more commonly known by locals as the 'Dudley Locust' or 'Dudley Bug'. Professor Fortey went on to explain how the name of *Calymene* embodies geological history since it is named after two nineteenth century scientific pioneers Professor Johann Friedrich Blumenbach and Alexandre Brongniart. Professor Blumenbach was a pioneer of fossil illustration, whose 18th century 'Standard Handbook of Natural History' contains sketches of *Calymene*. Alexandra Brongniart wrote a paper in 1822 recognising that not only were trilobites crustaceans but that Calymene was found in Dudley and consequently named it after Professor Blumenbach.

Andy Harrison

NOW FANCY THAT

It is not often that you find a good geological story in the satirical magazine *PRIVATE EYE,* however they recently commented on the dire water shortage on the island of Jersey. In the 1980s the States (Jersey's parliament) commissioned the BGS to report on the islands water resources. They found that much of the water was polluted by nitrates and pesticides and the bedrock of mostly granite and shale did not contain an aquifer of any size. The situation is potentially dire.

However, a local water diviner, claimed that there was water at considerable depth, in an aquifer that flows in from France, taking a day to reach Jersey. The BGS says that the water being extracted at the moment is not recent, but 57,000 years old. The States decided to believe the local man who was asked to locate two promising sites where drilling would find this deep underground source. This decision was ridiculed by the magazine as another example of science being overruled by local knowledge with very little evidence.

An amusing story but in the next edition of Private Eye there is a letter from Jersey complaining that their island is has been 'persistently plagued' by so-called experts when time and time again the local man has been proved right. The writer is confident that this water that comes from Normandy a mere 12 miles away will be found, and will solve the current shortage. Water divining is one of those very ancient practices which many people believe works, and is just not understood by hydrogeologists. We can wait for the results of the drilling with interest.

Bill Groves

GEOBABBLE

Wren's Nest is an odd term for a place. When trying to explain its origin there have been many explanations. Perhaps it was an area where a great number of Wrens were found to nest and so the local people coined the name. More likely is the structure of the hill. The steeply dipping limbs of Much Wenlock Limestone in an anticlinal structure have beneath them the less resistant Coalbrookdale Formation (Wenlock Shale). This is exposed in the centre of the Wren's Nest at a slightly lower level than the surrounding limestone ridge and so has the illusion of being nest shaped, hence the name.

This is all very interesting but of course complete nonsense, At the Wren's Nest Conference the Borough archaeologist, John Hemmingway, explained that the area was called *'Wrosne'* an Anglo-Saxon word meaning 'the link' or 'watershed ridge'. Mesolithic blades have been found in the area, and later, in Norman times it became part of Old Park hunting ground. It is easy to see how Wrosne could be passed down through generations to become Wren's Nest.

Bill Groves

CONTACT US

As ever we would love to hear your news and views, particularly for the new *'from our members'* spot, so please put pen to paper or fingers to keyboard and give us your thoughts. We are often able to print photographs that are sent by email or colour print. Notices that appear in this Newsletter will remain in future editions until the date of the related meeting or event has passed. In order to include material in the October Newsletter, please send or give it to one of the Editorial Team by ***Monday 4th December 2006***

EDITORIAL TEAM

Hon. Secretary: Sarah Worton 158 Oakham Road Oldbury B69 1QQ Tel 01384 235946	Graham Worton Dudley Museum and Art Gallery 1 St James' Road Dudley DY1 1HU Tel 01384 815574 Or email: graham.worton@dudley.gov.uk	Bill Groves 23 Churchward Grove Wombourne Wolverhampton WV5 9HB Or email: bill.groves@dudley.gov.uk billgroves300@btinternet.com

BCGS Website now at www.bcgs.info

History of Geology Group
English Nature
Geoconservation Commission
The Black Country Geological Society
UKRIGS

History of Geoconservation Conference
24th - 25th November 2006
DRAFT Conference Programme

Friday 24th November

09:00 – 09:50 Registration and coffee
09:50 - 10:00 Introduction and Welcome

The origin of geoconservation
10:00 The origins of geological conservation - Phil Doughty
10:30 Geoconservation in the 19th century - Barry Thomas
11:00 History of Geotourism - Tom Hose
11:30 Geodiversity: the origin and evolution of a paradigm – Murray Gray
12:00 Buffet lunch

Geoconservation in the British Isles
13:00 The role of the voluntary sector in the evolving geoconservation movement – Cynthia Burek
13:30 The history of the Geologists' Association involvement in geological conservation - Chris Green
14:00 The history of the Geological Conservation Review – Neil Ellis
14:30 Statutory and legislative milestones - Colin Prosser
15:00 A historical perspective on local people in geological conservation – Graham Worton

15:30 Tea

Geoconservation on an international scale
16:00 History of Geoparks - Cheryl Jones
16:30 History of Geoconservation in Europe – Lars Erikstad
17:30 World Heritage Sites - Patrick Boylan

Evening: Brief return to hotel

19:30 Conference dinner in Dudley Caverns (with underground canal boat trip)

Saturday 25th November

AM: Visit to Wren's Nest
Buffet lunch at Dudley Museum and Art Gallery
PM: Visit to Museum to see geological specimens and art.

History of Geoconservation Conference
24th-25th November 2006
Dudley Museum

Booking form

Name……

Address……

……

……

Telephone……

Email……

The registration fee per person is £25 in full or £15 for members of the organisations listed below.
I am a member of (delete as appropriate):

Black Country Geological Society
History of Geology Group
The Geological Society of London
UKRIGS

Registration fee enclosed £…….

I plan to attend the conference on 24th November / 25th November / both days (please delete)

I will / will not (please delete) attend the conference supper and boat trip to Dudley Caverns

I will / will not (please delete) require transport from the hotel to the conference venues on 24th November

I will / will not (please delete) require transport from the hotel to the conference venues on 25th November
Please return your completed form and cheque made payable to UKRIGS to:

Alan Cutler, 21 Primrose Hill, Wordsley, Stourbridge, DY8 5AG