



The  
Black  
Country  
Geological  
Society

## NEWSLETTER No. 184 AUGUST 2007

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.

**COPY DATE FOR NEXT NEWSLETTER IS 1<sup>ST</sup> OCTOBER 2007**

*Chairman*  
Alf Cole C.Sci

*Vice Chairman*  
Alan Cutler B.Sc.,  
M.C.A.M.,  
Dip.M., M.CIM.

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Mike Williams

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PhD., F.G.S.

*Meetings Secretary*  
Gordon Hensman B.Sc.,  
F.R.Met.S.

*Field Secretary*  
Andrew Harrison BSC.,  
MSc., F.G.S.

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**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.**

**SATURDAY 22<sup>nd</sup> and SUNDAY 23<sup>rd</sup> SEPTEMBER 2007**



**Dudley Rock and Fossil Fair  
Concert Hall, St James' Road, Dudley**

**Dudley Rock and Fossil Fair: 2007**

## **Your Society Needs You!**

**Are you available over the weekend of 22<sup>nd</sup> and 23<sup>rd</sup> September 2007? Can you spare some time to join with other members to help make this year's event successful for the society? Yes? Please read on.....**

Unlike in previous years the Black Country Geological Society is not sponsoring the Rock and Fossil Fair, and so need not provide stewards and cashiers for the event. However, we are looking for members who would like to help man the Society's stand at the event. Basically we'd like members who can talk to the public about what the society does, take details of prospective new members and help to sell specimens or any other items donated by members for the event to raise funds for the society. The Fair lasts from 10.00am until 5.00pm on each of the two days and during that time we need a member or members to be behind the BCGS table. If you think that you can help could you please contact me with the approximate time that you would be available. There is a printed slip at the end of this Newsletter, and my contact details can be found in the 'Contact us' section that is also towards the end of the Newsletter.

NB All helpers get free admission to the event on that day.

### ***Request for Specimens etc***

Do you have any rock or mineral specimens kicking about at home that we could sell to raise some money for the society? Ideally we'd like to know where the specimen is from and what it is as it's nice to pass the information onto the new owner. However, don't worry if you don't know, we'll have enough geologists at the fair to identify things if we need to!!! In some cases you may also wish to put a minimum sale price against the item. As well as specimens we're also looking for any other unwanted items with a geological theme such as books or maps that you don't need anymore. Again, if you have a minimum price please tell us or we will sell the item based on similar things we see on stalls at the fair. If you have any items for sale, please bring them along to the festival on Saturday morning. If you have any queries on this or any of the above please call Sarah Worton, on 01384 235946.

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**MONDAY 24<sup>TH</sup> SEPTEMBER 2007 (Indoor meeting)****CONVERSAZIONE.****Global Warming – Should We Worry?**

One of the aims is to give members a chance to participate in a meaningful way instead of being virtually passive recipients of a lecture. We plan to begin with some 5 minute talks to depict the background to this extremely life altering and important topic.

1. Astronomical influences on climate - Milankovitch Cycles. **Barbara Russell** (BCGS Minutes Secretary: Secretary Wolverhampton Astronomical Society.)
2. Temperature changes in the geological record. **Bob Buckie**. (BCGS Sometime Committee Member). Bob may be involved in field studies with Birmingham University on this date. If not, he will be making a very valuable contribution by putting recent changes into perspective
3. Post-Glacial changes in climate in the British Isles. A chronological summary of the changes over the last 12,000 years. **Gordon Hensman** (BCGS Meetings Secretary)
4. The CO<sub>2</sub>/Temperature graph. This is a crucial piece of information which demonstrates the relationship between this most important gas and global temperature rises. **Martin Normanton** (BCGS).

Our Chairman, Alf Cole will keep order!

**SATURDAY 29<sup>TH</sup> SEPTEMBER 2007 (Museum visit)****Leaders: Andy Harrison and Mike Williams****The Natural History Museum, South Kensington**

This trip will now be incorporated into our winter schedule – details later. However, this leaves a gap in our fieldtrip plans, **if any member has a suggestion for a trip some time on the weekend 29<sup>th</sup> – 30<sup>th</sup> September, please contact Andy Harrison: [jenufa8@yahoo.com](mailto:jenufa8@yahoo.com): Mob: 07973330706** There is not another Newsletter before that weekend, so if we do come up with something, details will have to be posted by email or word of mouth.

**SUNDAY 28<sup>TH</sup> OCTOBER 2007 (Field meeting)****Leader: Sue Hay (Woolhope Group)****Whitmans Hill Quarry – Malvern Hills**

Whitmans Hill Quarry is administered by the Herefordshire and Worcestershire Earth Heritage Trust. It is mainly Much Wenlock Limestone with some rocks from the Ludlow Series. It was worked until 1990 and has some excellent exposures. It is also a haven for wildlife.

The entrance to the quarry is in Storridge which is on the junction of the A4103 and B4219 GR:SO748484 and we will meet 10.30 – 11.00ish.

**MONDAY 29<sup>TH</sup> OCTOBER 2007 (Indoor meeting)****Spencer Mather: Caledonian Crystal Collecting**

Spencer is well known to you as one of our members, and a prodigious mineral/crystal expert. He will give an account of mineral scavenging amongst the remnants of the Caledonides. An entertaining evening is assured.

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**MONDAY 31<sup>st</sup> NOVEMBER 2007 (*Indoor meeting*)**  
**Members' evening**

A pot pourri of contributions from our members. Bring along your specimens, pictures, maps and questions. Give a short talk; paint a picture; compose a poem; or even a song, extolling the importance of geology.

To enable me to produce a programme, please e-mail me with your contribution.  
[gwjhensman@aol.com](mailto:gwjhensman@aol.com)

Gordon Hensman and Andy Harrison

**OTHER SOCIETIES**

**SHROPSHIRE GEOLOGICAL SOCIETY**  
**MARCHES FESTIVAL OF GEOLOGY**

Registration is still open for the *Marches Festival of Geology Symposium* in Ludlow on Thursday 13<sup>th</sup> September. Deadline for the reduced rate (and with lunch included) is 31<sup>st</sup> August. Advance registration for the one-day Symposium should be made with the SGS Treasurer:

David HT Smith,  
25 Grange Road,  
Shrewsbury.  
SY3 9DG

email: [david@thursfieldsmith.co.uk](mailto:david@thursfieldsmith.co.uk)

Cheques should be made payable to The Shropshire Geological Society.

Further details are at:

[www.shropshiregeology.org.uk/festival](http://www.shropshiregeology.org.uk/festival)

**NORTH STAFFORDSHIRE GROUP OF THE GEOLOGISTS' ASSOCIATION**

**Sunday 23 September - Monsal Head**  
**Leader: Dr Fred Broadhurst**

Meet at 10.00am at the Car Park (charge made) at Monsal Head (**SK184715**). A morning walk of approx 4km on a good path, but with a short scramble up to Hob's House Landslip. Lots of Carboniferous corals, plus lead mineralisation in the Putwell Hill Vein.

Lunch back at Monsal Head (pub/café available).

After lunch we transfer vehicles to Great Longstone (SK200717), then walk a circular route, including Longstone Edge, to see the workings in the complex system of lead veins there, together with a limestone palaeokarst and other limestone features. Distance about 6km, good paths, steep in places.

For further information contact:

NSGGA Field Secretary **Gerald Ford**, Tel. 01630-673409 or e-mail: [g.ford@ukonline.co.uk](mailto:g.ford@ukonline.co.uk)

**October 20th, 2007**

Childrens' Event: Potteries Museum & Art Gallery, Hanley. Activities will include a mock mining tunnel and a spoil heap mineral search.

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*EDITORIAL*

It is not often that I quote from a Press Release from the Department for Culture Media and Sport, but earlier this year the sculptures in Crystal Palace Park, Sydenham were made Grade 1 listed 'buildings'. The release said:

*"The 1850s animal sculptures and surrounding landscape, known as the Dinosaur Court, were constructed in the grounds of the Crystal Palace after it was moved from The Great Exhibition in Hyde Park. The sculptures were listed Grade II in 1973, and will now join the exclusive 2.5 per cent of list entries which are Grade 1 – which include the Royal Albert Hall, Buckingham Palace and the Cenotaph on Whitehall.*



*Margaret Hodge said: "The prehistoric animal sculptures and associated geological formations provide an insight into the mid-19th Century reconstruction of dinosaur species that had only recently been discovered. They are believed to be unique and are clearly of exceptional historic interest in a national and probably international context. I am delighted to upgrade their list entry to reflect their importance."*

*English Heritage describes the sculptures as "the first attempt to accurately reconstruct the three dinosaur species known to the scientific world in the 1850s within their geological environment".*

Following the Great Exhibition of 1851, the Crystal Palace was moved from Hyde Park to Sydenham Hill, and it was here that the sculptor Hawkins created the current idea of what these animals – named Dinosaurs by Richard Owen – looked like. As can be seen from the photograph they are not accurate by modern conceptions but are nevertheless admirable representations.

Often overlooked, but of equal interest to a geologist are the constructions of rock strata, the photograph is of a coal seam in sandstone. If you are ever in South London Crystal Palace Park is worth a detour.



Look at [www.sydenham.org.uk/crystal\\_palace\\_park](http://www.sydenham.org.uk/crystal_palace_park)

Bill Groves

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*MEETINGS' REPORT*

**SUNDAY JUNE 6<sup>th</sup> 2007** Field Trip: 'Raggedstone Hill, Southern Malverns' Led by John Payne (Woolhope Naturalists' Field Club – Geology Section)

This was a joint meeting between the BCGS and the Woolhope Naturalists' Field Club – Geology Section led by John Payne. Around 17 people from both groups met at the Hollybush car park on the northern side of Raggedstone Hill and although cloudy the weather remained fine throughout the day. After a brief greeting and introduction John provided everyone with a handout that outlined the day which would include ascending and descending Raggedstone Hill taking in various topographic features and outcrops that help to explain the formation of the Malverns.

Our route started with ascending the northern slope of Raggedstone Hill and our first stop, Locality 1, was at Hollybush underground house. This is ongoing environmentally friendly construction project designed and engineered by Mr Simon Watts who expects it to take around 7 to 8 years to complete. The finished house will make use of environmentally sustainable materials and use underfloor heating and solar power.

Continuing to the summit of Raggedstone Hill along a rhododendron, hawthorn and fern lined path we had a brief stop to look back at the view towards the Cotswolds, Bredon Hill and out over the Vale of Evesham and the Southern Plain. Small hillocks and hummocks can be seen dotted across the southern Plain which, like the Cotswolds and Bredon Hill, represents outliers of Jurassic rocks surrounded by Triassic strata. Outliers of recent river terrace deposits can also be seen as hummocks close to the River Severn.

At the summit of Raggedstone Hill, Locality 2, John gave us an account of a previous field meeting between the Woolhope, Cotteswold and Malvern Naturalists' Field Clubs to the same spot in June 1953. John followed his account with an overview of the tectonic compression, extension and erosion events that led to the formation of the Worcester Basin and the Malvern Hills. The morphology of the Malvern Hills and the surrounding countryside is strongly related to the underlying geology. Two minor peaks and a valley forming the summit of Raggedstone Hill result from two sheets of strong Precambrian metamorphic rocks (Malverns Complex) thrust over softer Cambrian Hollybush Sandstone and Malvern Quartzite which were later tilted. A volcanic andesite intrusion of Ordovician age forms a small north south trending ridge along the summit of the hill.

After lunch we descended an overgrown ridge on the south side of Raggedstone Hill to the third and fourth locations of the day. The outcrop at Locality 3 shows the faulted boundary between the schists of the Malvern Complex and the Hollybush Sandstone. At Locality 4 we saw an outcrop of the Malverns Complex comprising intensely sheared granite and bands of chlorite schist surrounding eyes of granite or pegmatite. Continuing southwards down hill to Locality 5, Grays Cottage Waterfall, we were shown an outcrop of Late Triassic erosion breccia containing Palaeozoic / Precambrian clasts overlying Triassic Mercia Mudstone strata. The erosion breccia is believed to represent an ancient land surface and at this locality forms a protective layer to the underlying Mercia Mudstone which has resulted in the waterfall.

From Locality 5 we continued westwards round Raggedstone Hill to the Valley of White Leaved Oak, supposedly named after an old oak tree, to Localities 6 and 7. The valley is underlain by Dark Cambrian White Leaved Oak shale and Ordovician Bronsil Shale. Small fossil trilobites, brachiopods and corals have been found within the Cambrian shales. Ordovician volcanic intrusions of basalt, dolerite and andesite form ridges and hillocks along the valley floor. From the Valley of White Leaved Oak we headed northwards back towards the Hollybush car park and to Westfields Quarry, Locality 8, the final one of the day. Here an outcrop of the Hollybush Sandstone is seen intruded by the same andesite dyke, seen at the summit of Raggedstone hill.

From Westfields Quarry we returned to the Hollybush car park. I would like to thank John Payne and the Woolhope Naturalists' Field Group for a very interesting day out and look forward to further joint meetings. Our next meeting is planned for October to visit Whitmans' Hill Quarry, also in the Malverns, and members are asked to contact Andy Harrison (0797 333 0706 or [jenufa8@yahoo.com](mailto:jenufa8@yahoo.com)) for further details.

Andy Harrison

## GEOLOGY IN STAMPS



Most geological stamps seem to be of fossils, and by far the most popular are the dinosaurs. They are very common and you can buy packs of 100 dinosaur stamps in high street stationers. However, I have tried to find more unusual types and stamps with minerals are not so common. Countries often produce stamps to celebrate mining and the production of gemstones, but these two stamps from Kenya have

representations of Galena, the sulphide ore of lead; and Gypsum, a hydrated form of Calcium Sulphate. I do not know their age or whether there are others in the set; but I suspect there are.

Bill Groves

## GEOLOGICAL PLACES

### **Slapton Sands – South Hams Devon From Gordon Hensman**



There can be few of our members with an interest in the geology and geomorphology of coastal landscapes, who are not familiar with Chesil Beach. However, a similar feature on the other side of Lyme Bay is relatively unknown.

*SLAPTON SANDS* starts off with a misnomer for a name as it is a shingle not sand barrier but it formed in very much the same way as its better known relative Chesil Beach. Whereas Chesil Beach is oriented NW-SE and joins the Isle of Portland to the mainland – a

classic tombolo, Slapton Sands curves from the south to north-north-east. Furthermore, Chesil Beach lies 90 degrees athwart the prevailing south-west winds, whereas the winds at Slapton Sands are predominantly offshore, with storm waves from the east.

The Start Bay coast cuts across the dissected plateau landscape of the South Hams. Much of the central section of this coast is formed by the very steeply dipping slates of the Meadfoot series of Lower Devonian age which carry plateau surfaces at around +90m O.D. The plateau surface rises to 140m at Strete, where the Dartmouth Slates outcrop, and about the same height in the south where Start Schists occur. The plateau surface is dissected by a series of valleys which drain into Start Bay, creating a coastline of alternating resistant rocky headlands and indented valley mouths which form rias to the north at Dartmouth and to the south at Salcombe.

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Slapton Sands form a continuous barrier of shingle extending 9km along this coast. From about half its length it lies against the foot of the cliffs, but where the eastwards draining streams cut through, the drainage has been impounded to form lakes, or *leys* matching the Fleet behind Chesil Beach. Slapton Ley is the largest, although the one at Hallsands in the south has been silted up, and a smaller ley exists at Beesands.

Slapton Sands proper, is 3.5km long from Torcross in the south to Strete Gate in the north. On some O.S. maps it is wrongly labelled as a raised beach. The Ridge is 110m broad at the northern end, thinning to 83m at Torcross, with the maximum height of 8m above HWM at Pilchard Cove near Strete Gate, and 5.5m at Torcross. The shingle has been found to be 11m deep and rests on marine muds whose surface lies at -5m OD. The total width is 450m and it contains an estimated 6.9 million cubic metres of shingle at Slapton Sands – some 66% of the whole Start Bay Barrier.

*The Shingle – its Source and Composition.*

About 86% of the material making up the barrier is flint, with quartz and smaller amounts of local igneous and sedimentary rocks of Devonian age. An intriguing problem arises, as the nearest source area for the flint is 40km to the north in the Halden Hills, and the nearest coastal source is at Beer with its chalk cliffs 58km away across Lyme Bay. It appears that the most likely source is the floor of the English Channel to the east where Cretaceous rocks are known to contain flint.

*The Post-Glacial Flandrian Transgression.*

It is likely that the flint was deposited by the landwards movement of the English Channel Flint as the sea level rose during the post-glacial melting, arriving at its present position some 3,000 years ago. An ancient submerged cliff line at about -45m, -143 feet, still exists below Start Bay. There is a marked grading in the size and shape of the shingle – coarser in the north and finer at Torcross. This is due to a long-term sorting process taking place. Borehole samples show that the shingle is well-rounded at the surface, but is more angular showing little weathering at depth. This would indicate that the surface layer has been reworked by wave action since the barrier was emplaced 3,000 years ago.

Studies have indicated that there is a long-term cyclical fluctuation of the movement of beach material alternately moving northwards and southwards. My own observations show that the shingle is now substantially more abundant in both width and height in the north at Strete Gate than at Torcross. This is consistent with the predominance of south-west winds and lack of east winds in recent years. This is bad news for Torcross which relies on the shingle for protection from storm force winds and high tides which have swamped the village in the past – the most recent being in December 1979 to January 1980 when waves swept over the houses.

*The Ley* has a flat bottom at 2m below water level with 2.5m the maximum depth, and floored by slate gravel near the cliffs and beach shingle on the seawards side. The sediments are of marine origin at base, overlain by an accumulation of peat which has been radio-carbon dated to 2,900 years ago at its base, and 1800 years ago at its surface. The peat is overlain by a thin cover of marine sand containing shell fragments just below OD, representing a short-lived breach in the shingle barrier. This is overlain by brown and black clay and mud, rich in diatoms, as a result of sedimentation from the streams draining into the Ley. The muds and clays effectively rendered the shingle impervious as it prevented the water seeping through the shingle out to sea. This makes the ley about 1,500 years old, and it is at present rapidly silting up. The present water level is +2.65m above OD as a result of the construction of a weir at Torcross – initially in 1856 to prevent flooding.

*The Effect of Changes in Agricultural Practice.*

Since 1945 farming has become more intense with grassland ploughed up and increased use of nitrogen and phosphorus fertilisers, and increased density of livestock. The result is increased soil erosion causing markedly enhanced rates of sedimentation from 2mm per annum in 1930's to 10mm per annum in the 1960's. A large increase in the volumes of silica, aluminium and potassium introduced into the lake has taken place. One result of this has been the change of status of the water from *eutrophic* to *hypertrophic* with increases in the frequency of algal blooms.

If you are ever in the South Hams, do make a point of visiting this fascinating coast line; and I have not touched on its important WW2 history!

Gordon Hensman

**GEOBABBLE**

At about this time we invite members to contribute to the Newsletter some interesting geological detail that they found on their summer holiday and many of you give splendid short talks at our Members' Evening about places you have visited, which I am sure will continue this year. To escape the floods in England, we spent a week in Switzerland, only to be welcomed by the



heaviest and most prolonged rainfall for many years. With a cloud base of about 200m, the mountains were definitely closed, and with it all the wonderful pictures of folds and thrusts and metamorphic rocks that I had hoped to take. After 3 days I ran out of geo-tourist options and so was reduced to looking at the shops in Interlaken. I don't know why we went into a candle shop, a sizeable one as well full of different types of candle. As well as the expected shapes there were candles of birds, animals, flowers, food including a fried egg and sausages, anything that could be made out of wax and have a wick stuck in it was there.

I found this, is it a fossil? A Nautilus perhaps, or an Ammonite; good development of ribs although the moulding is not quite up to showing the suture, "It's a shell" says my wife, "let's go and have our fifth cup of coffee of the day!"

Bill Groves

**CONTACT US**

As ever we would love to hear your news and views, for any part of the Newsletter, 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 August Newsletter, please send or give it to one of the Editorial Team by **Monday 1<sup>st</sup> October 2007**

<u><b>EDITORIAL TEAM</b></u>		
<p><i>Hon. Secretary:</i> Sarah Worton 158 Oakham Road Oldbury B69 1QQ Tel 01384 235946 Or email: <a href="mailto:sarah.worton@atkinsglobal.com">sarah.worton@atkinsglobal.com</a></p>	<p>Graham Worton Dudley Museum and Art Gallery 1 St James' Road Dudley DY1 1HU Tel 01384 815574 Or email: <a href="mailto:graham.worton@dudley.gov.uk">graham.worton@dudley.gov.uk</a></p>	<p>Bill Groves 23 Churchward Grove Wombourne Wolverhampton WV5 9HB Or email: <a href="mailto:bill.groves@dudley.gov.uk">bill.groves@dudley.gov.uk</a> <a href="mailto:billgroves300@btinternet.com">billgroves300@btinternet.com</a></p>

Copy date for August Newsletter is **Monday 1<sup>st</sup> October 2007**

**BCGS Website at [www.bcgs.info](http://www.bcgs.info)**

***Rock and Fossil Fair helpers, please turn over***

## **ROCK & FOSSIL FAIR VOLUNTEERS**

### **Name(s)**

Home phone number:

Work phone number:

I/we can help man the BCGS stand on: (please circle)

SAT am; SAT pm; SUN am; SUN pm

If you're flexible on when you can help, and available for more than one session please advise the maximum number of sessions you can do.

Max number of sessions SAT

Max number of sessions SUN

***Please return to Sarah Worton, Secretary or telephone/email (see details in 'Contact Us')***

**Please return by 9 September Thanks**