Newsletter No. 208

August 2011

The Black Country Geological Society

Contents:

Copy date for the next Newsletter is

Monday 1st October 2011

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.

Future Programme

Lecture meetings are held at Dudley Museum & Art Gallery, St James's Road, Dudley, DY1 1HU. Tel. 01384 815575. 7.30 for 8 o'clock start unless stated otherwise.

Those wishing to attend field meetings please contact our Field Secretary, Andy Harrison, telephone: 01385 370 188, mobile: 07973 330706 or email: andrewcfharrison@yahoo.com

Car Sharing for Field Trips

If transport is a problem for you or if you intend to drive and are willing to offer lifts, please contact Andy with at least 48 hours notice. We hope that this will encourage members to attend the more distant field visits.

Sunday 7th August: ***(Field Meeting)*** **The Woolhope Dome. Led by Moira Jenkins and Rosamund Skelton (Woolhope Naturalists' Field Club, Geology Section).** *(NB: Additional directions from last edition in* ***bold italics.****)* Meet 11:00am, at a small quarry and picnic site (SO 5780 3853). Bring sandwiches. Pub/toilet stop at lunchtime - food not guaranteed. From Ledbury: A438 towards Hereford. At Dormington turn left onto a minor road to Mordiford. Just under a mile turn left up a road with a ***Brown*** picnic place sign naming ***'Swardon Quarry'*** to a T junction. Turn right and then left fork ***with a picnic symbol and signed 'Checkley',*** up hill. At a hairpin bend to the left, the quarry with **P** is on the right. Pull in here. Views across Herefordshire into Wales. Formations include Aymestry Limestone, Downton Castle Sandstone and Raglan Mudstone. The day will include a walk of approximately half a mile.

Monday 17th October ***(Indoor Meeting)*** **'A New Look at the Silurian Period'. Speaker: Dr. David Ray,** Neftex Consultants. David will use modern techniques of sequence stratigraphy, computer animation, and applied palaeontology to look at the Silurian world, focussing on the Black Country Silurian rocks and how they fit into the global picture of the world at this time.

Monday 21st November ***(Indoor Meeting)*** **'Next Steps for the Development of the Lapworth Museum of Geology'. Speaker: Jon Clatworthy** Lapworth Museum, University of Birmingham. The Lapworth Committee have plans for a major re-fit of the Lapworth Museum. Jon will share this vision with us and focus on some of the wonderful new initiatives of the redevelopment.

Monday 5th December ***(Indoor Meeting starting at 7.00)*** **Christmas Members' evening.** The usual chance for members to share their geological stories and experiences. This is our annual social event with refreshments and a buffet so bring your Christmas spirit and join in the geofun!

Other Events and Information

The Geologists' Association 2 day Meeting

Saturday & Sunday, 9th & 10th Sept: 'Geoconservation for Science and Society: an agenda for the 21st Century'. Worcester University, Henwick Grove, Worcester, WR2 6AJ.

The one day conference on 9th September will consist of lectures, poster sessions and debates. Topics include the importance of local groups, funding opportunities, benefits of raising public awareness and the future of the Geological Conservation Review. Registration from 9.30am, conference starts at 10am. Lunch and refreshments included. Speakers include: Prof. Rory Mortimore (University of Brighton and ChalkRock Ltd), Dr Murray Gray (Queen Mary, University of London), Prof. Jim Rose (Editor, Proceedings of the Geologists' Association), Phil Harding (Wessex Archaeology), Tim Badman (World Heritage Programme, IUCN), Dr Colin Prosser (Natural England), Dr Jonathan Last (English Heritage) and Drew Bennellick (Heritage Lottery Fund). ►

The one day field trip on 10th September, will visit the Lickey Hills Champions Project, Dudley Museum and Art Gallery and the Wren's Nest National Nature Reserve to examine geoconservation in action and the role of local groups and communities. Departure from the University of Worcester at 9am, returning by 5pm. Lunch, coach travel and field guide included. The field trip is supported and led by the Black Country Geological Society, Dudley Museum and Art Gallery, Herefordshire and Worcestershire Earth Heritage Trust, the Ripples Through Time Project and the West Midlands Regional Group of the Geological Society.

Registration for the conference (includes lectures, field trips, coach and lunch): GA (affiliates) & QRA members **£25.00**, non-members £30.00. Field trip (for GA & affiliates): **£10.00,** non-members £15.00. Booking essential. Registration deadline: **31st August.**

Further information: Contact Sarah Stafford Tel: 020 7434 9282, email: geol.assoc@btinternet.com web link: http://www.geologistsassociation.org.uk/conferences.html

As we are affiliated to the GA, BCGS members can benefit from the reduced rates. This is an opportunity to influence the future direction of Geoconservation and find out more about what's going on currently - with field visits to sites very close to home (see programme outline above). ■

Saturday 24th & Sunday 25th September
Dudley Rock 'n Fossil Festival

Bigger and better than ever, it will feature the usual talks, activities, demonstrations, exhibitors, special exhibitions and traders in everything earth science related for boffins and families, and we need your help:

Volunteers are needed for the BCGS stand
Please contact the Hon. Sec., Bob Bucki *(details on p.16)* if you can help, am and/or pm on either day.

Items are needed for sale on the BCGS Stand
If you have any geological artefacts (ie. rock specimens and fossils), publications, or other geological material to sell for BCGS funds, please contact Mike Williams, email: bungalowmike@blueyonder.co.uk or tel. 01902 822 505. These may be sold on the stand, or made up into 'Goodie Bags'.

The Wildlife Road Show

This is run by 'Black Country Living Landscapes'. Family activities, displays and a chance to meet local wildlife! BCGS is intending to be present at some of these events:
Sunday 7th August: Northycote Farm, Wolverhampton, 10.00am - 4.00pm.
Wednesday 10th August: Moorcroft Wood LNR, Walsall, 10.00am - 4.00pm.
Sunday 14th August: Sandwell Park Farm, Sandwell, 10.00am - 4.00pm.
Tuesday 16th August: Bumble Hole LNR, Dudley, 10.00am - 4.00pm.
More information: tel: 0121 505 4429 www.bcll.org.uk email: info@bcll.org.uk

Geologists' Association Festival of Geology: 5th & 6th November 2011

Saturday 5th November, 10.30am - 4.30pm. University College London, Gower Street, London WC1E 6BT. **Entrance Free!**
Exhibitors from the World of Geology: Fossil and mineral displays, jewellery, books, maps etc.
Discovery Room: Activities for children with fossils, racing trilobites, Jurassic dioramas and more!
Geological Talks: Prof. Richard Selley: The impact of geology & climate on 2 millennia of British vineyards; Dr Joe Cain: Crystal Palace dinosaurs; Prof. Hazel Rymer: Volcano hazards; Dr Andrew Ross: Amber. ►

Sunday 6th November: Walks and Field Trips

Amateur Photographic Competition: Any geological topic: **£100** 1st Prize, **£50** 2nd Prize, **£25** 3rd Prize. **Further details:** www.geologistsassociation.org.uk *or* www.rockwatch.org.uk *tel:* 020 7434 9298 *email:* geol.assoc@btinternet.com

Understanding Planet Earth

A distance learning introductory course for adults, commencing September 2011

Tutor: Chris Darmon BSc. PGCE

Why do natural disasters occur and is there a pattern to these events? This course aims to answer this and many other questions about how the Earth works. We take you through the basics starting with earth materials, the rocks and the minerals and then into geological time, starting with the formation of the Earth. Most of all, this course examines our quest to unravel the complexities of our mobile Earth and the lead up to the modern theory of plate tectonics.

We are enrolling learners now to commence in September. Whilst the course is delivered by distance learning, there is an initial opportunity to meet the tutor and fellow students at a face-to-face meeting – with sessions planned for Sheffield, Bristol and Central London.

Further information: http://www.geosupplies.co.uk/study-tours.php#geologyclasses
Cost: £75.00. This covers all the tutorials and the face to face session (with refreshments).
For students who wish to have materials posted to them the cost is £85.00.

Booking: via Geo Supplies website *or* Tel: 0114 245 5746 *or* cheque (payable to 'Geo Supplies Ltd.') to the following address: Geo Supplies Ltd., 49 Station Road, Chapeltown, Sheffield, S35 2XE.

Other Societies

BCGS members are normally welcome to attend meetings of other societies, but should always check first with the relevant representative. Summarised information for the **next two months** is given in our Newsletter. Further information can be found on individual Society web sites.

Manchester Geological Association

Saturday 24th September: The Fred Broadhurst Memorial Field Trip will be based round Rocky Ramble Walk 17: Rowarth to Cown Edge. This is a walk of around 10km (6 miles) with 250m (800ft) of ascent some of it fairly steep. We will be looking at faults, folds and landslips with some stunning views as well.

Please book in with Jane Michael if you intend to come along to any of the field events :- Tel. 07917 434598, email: outdoors@mangeolassoc.org.uk. There is no charge for visitors from other societies at lectures or field visits. Further information about meetings at http://www.mangeolassoc.org.uk/

Woolhope Naturalists' Field Club - Geology Section

Tuesday 16th August: Evening building stones walk in Hereford led by Dr Paul Olver. Meet outside library, Broad Street at 6.00 p.m.

Saturday 24th September: Cleeve Hill Glocs. led by Dave Owen. Meet at 10.30 a.m. in Car Park Quarry (SO 989 272). Packed lunch.

Guests are welcome, but must take day membership of the Club: £2.00. Further information: Sue Hay on 01432 357138, email svh.gabbros@btinternet.com or visit their web site: www.woolhopeclub.org.uk/Geology_Section/default.htm

Warwickshire Geological Conservation Group

Wednesday 17th August: Studley/Henley. Leaders: Ian Fenwick & John Crossling. Meet at 6.30 p.m. End of Castle Road. (SP 08204 63704)
A walk along the banks of the Arrow to examine a very active, migrating meandering stream, complete with pools, riffles, and active bank erosion, with palaeo-channels on the floodplain. The trip concludes with a walk down the High St. of Henley to look at some of the local building stones.

If you wish to attend contact Ian Fenwick swift@ianfenwick.f2s.com or 01926-512531.The WGCG mobile phone (0752 7204184) available on the day from 11.00. There is a charge of £2.00 for non-members. For further information visit: http://www.wgcg.co.uk/

Herefordshire & Worcestershire Earth Heritage Trust (H&W EHT)

Tuesday 9th August: Photography Workshop - Geology of Bewdley through the camera lens. 10am - 1pm. Meet: Bewdley Museum, DY12 2AE. Booking essential: (details below). Cost: £5 (pay on the day). Bring your camera (not essential!).

Thursday 11th August: Guided Geology Field Trip - Martley and Shelsley Beauchamp 10am - 3pm. Meet: Martley church car park SO 756597. Booking essential: (details below).
Cost: £1.50 (pay on the day) Car share between sites. Lunch at the Crown Inn, Martley.

Sunday 14th August: The Rocks of Bromyard Downs and the **View from Bringsty Common.** Guided Geology and Landscape Walk. 10am - 3pm Bring a packed lunch. Meet: picnic site on Bromyard Downs, SO 670558. Booking essential: (details below). Cost: £1.50 (pay on the day).

Friday 19th August - Monday 22nd August: Geology themed children's activities at the Bewdley Museum. DY12 2AE. 11am - 3pm each day. No booking required and no charge.

Tuesday 23rd August: Ask the Expert at Bewdley Museum, DY12 2AE. 11am - 3pm
Where: Bewdley Museum, DY12 2AE. No booking required and no charge. Just turn up and meet the specialists in rocks, fossils and minerals. Look at our specimens and bring yours to quiz the experts.

For further EHT information visit: http://79.170.44.138/earthheritagetrust.org/pub/category/news/
Booking (if required) for events listed above: Phone 01905 855184 or email: eht@worc.ac.uk

Shropshire Geological Society

Wednesday 17 August (evening meeting): Shrewsbury building stones trail, to be led by David Pannett and Mary Steer. Walking (one mile) on pavements; bring your own refreshment, if required (booking to reserve a place and obtain joining instructions from David Pannett by email: jessicapannett@hotmail.co.uk; telephone: 01743 850 773)

Saturday 17 September (morning Rockhop meeting, commencing 10.00 am): Wenlock Edge (Lea Quarry): a fossil ecosystem, to be led by Andrew Jenkinson. Walking (one mile); some rough ground; bring your own refreshment, if required (booking to reserve a place and obtain joining instructions from Frank Hay, preferably by email: frankhay@waitrose.com; telephone: 01694 724 723)

Saturday 1 October (morning Rockhop meeting, commencing 10.00 am): The Ercall, to be led by Chris Rayner. Walking (one mile); some rough ground; bring your own refreshment, if required (booking to reserve a place and obtain joining instructions from Chris Rayner, by email: chris.rayner@virgin.net; telephone: 01952 510 463)

Anyone wishing to attend a field meeting should telephone a meeting co-ordinator at least 48 hours in advance. A nominal charge is levied for non-members. The Rockhops are primarily intended for beginners. Arrive 15 mins before the start of field trips for admin. Further info at: www.shropshiregeology.org.uk/

Mid Wales Geology Club

Wednesday 17th August: Talk by Dr. Michele Becker on "Do Fish Drink? -The Ins and outs of life in water."
Wednesday 21st September: Prof. Bill Fitches will talk on "The Geology of the African Rift Valley". Will this active region be a new Atlantic Ocean?

Meetings are held at Plas Dolerw, Milford Road, Newtown, Montgomeryshire, SY16 2EH. Meet at 7.15 for 7.30pm. Further details: Ed. newsletter & Hon Sec: Tony Thorp: Tel. 01686 624820 and 622517 jathorp@uku.co.uk Web site: http://midwalesgeology.org.uk

Editorial

Members of the Society have been busy in recent weeks in a variety of ways. The Three Counties Show in Malvern provided a 3 day opportunity for us to promote ourselves and our local geology, along with representatives from the Geological Association, The Herefordshire and Worcestershire Earth Heritage Trust, The Gloucestershire Geology Trust, and the newly formed Teme Valley Geological Society. We all shared a marquee and the event was sponsored by the GA. Several of us did shifts to man the stand (and defend the displays through some challenging weather!).

News of the Planning Application to build a housing estate in the heart of the Wrens Nest Reserve has sparked an intense flurry of activity, and numerous protests have already been sent to the Planning Department. *(See Gordon Hensman's item below.)*

The International Silurian Subcommission's visit to Dudley was a great success. The BCGS sponsored their canal trip to the Singing Cavern, and members of the Society joined this eminent group of geologists for this event and the concluding buffet. *(See 'The Dudley Bug' p.8 for a full report.)*

The Glacial 'Boulder Bonanza' rolls on in the fascinating and detailed item from Bill Groves on some interesting specimens around Wombourne. Please help to keep this subject alive with your photos, giving the precise location, and any other information about erratics in and around the Black Country. And thanks to Mike Allen for unearthing more 'Geological Wonderlands' *(Members' Forum, p.15)*.

Julie Schroder

Emergency! Wrens Nest Threatened

How would you feel if the following geological sites were threatened with development? Imagine:

Lulworth Cove, that iconic example of differential erosion on the Jurassic coastline of Dorset, is destined to have nearly 100 houses built on the fields above it. Developers say that it will have negligible effect on the attractions of the Cove.

The Needles, that landscape testimony to the power of the waves, is to have a housing estate of some 100 houses built on the coastal fields overlooking these chalk stacks. Planners say that it will have virtually no impact on these stacks, and will not detract from their wild beauty.

The Mendip Hills is to have a housing estate built on the fields just above Cheddar Gorge. Developers say it will have negligible impact on the site as they are not actually building in the Gorge.

The Giants Causeway in Northern Ireland is to be embellished with a housing estate on the cliffs above it. Developers say it will have a negligible effect on the scenery of this world famous site.

The Eden Project in Cornwall, is due to have nearly 100 houses built on the land overlooking it. Developers say it will have negligible effect on this famous place, and on the contrary it will be an asset to this brown field site. ►

The world famous Wrens Nest National Nature Reserve for Geology in Dudley, is to have an 80 house estate built in the middle of it, if Dudley College is allowed to demolish the present Mons Hill College buildings. Developers say it will have negligible effect on the Nature Reserve.

The Reality: These scenarios are the stuff of nightmares except - you've guessed it - the **Last One!**

It is almost unbelievable, but Dudley College plans to demolish the existing College Buildings on the Mons Hill Site, which includes the Warden's Accommodation, and replace them with an 80 house estate. Seven hundred students (when they are all there), and one hundred staff, present for 7-8 hours a day during week days in term time, are to be replaced by about two hundred permanent residents. The planners have concluded that they will have less impact on the Nature Reserve than the College! The reason for this outrageous plan, is that the College is short of money to complete its building of a new Sixth Form centre on the site of the old demolished Dudley Girls' Grammar School. If the plans are approved, it will mean a short term gain for Dudley College, and a permanent loss to Dudley. Dudley should acknowledge its responsibility to the world to care for and enhance this quite unique geological feature.

To refresh your memories, the Wrens Nest was declared a National Nature Reserve for Geology in 1956 – the first in Great Britain, and probably the first such designated site in the world. In 2004 the Wrens Nest Hill and Dudley Castle Hill were declared a Scheduled Ancient Monument, and that includes the land on which the Mons Hill College Buildings stand (the Coalbrookdale formation, about which relatively little is known, at the base of the limestone strata).

The planning application contains no real consideration, or even perhaps no knowledge, of its potential impact on the plans developed prior to Dudley College's application, to create a world centre for **Geotourism,** the **Strata Project.**

The Strata Project includes: the re-opening of the existing canal tunnel linking Dudley Castle with the Wrens Nest Nature Reserve; creating access to the 230 feet deep **'Step Shaft Cavern'** by means of an inclined escalator; walkways to view the **'Seven Sisters' limestone mine**; a **Research Centre** with geological laboratories; a **Visitors' Centre**, and maybe a **restaurant** and small **hotel** to accommodate some of the expected 50,000 visitors a year.

Furthermore, the BCGS have just hosted and sponsored the visit to the Wrens Nest by the International Silurian Subcommission. These top geologists from 12 countries described the Wrens Nest as 'the best in the world'. Their visit is fitting testimony to the world importance of the Wrens Nest. How shameful it would be if we allowed the site to be desecrated by building a housing estate in the middle of it!

On behalf of our Society, I sent a one page Preliminary Objection to the Dudley Planning Department, opposing the Dudley College application. It had to meet a deadline on 15th June - only a few days after we had first heard of this outrageous proposition. At the moment I am compiling a fuller objection after studying more fully the Planning Application - which has apparently been in the pipeline for the last twelve months.

We urge you to send your objections to the Directorate of the Urban Environment, Planning Services, 3 St. James's Road, Dudley, West Midlands, DY1 1HZ, as soon as possible:
development.control@dudley.gov.uk re: Application Number: P11/0652. ■

Gordon Hensman, Chairman BCGS

An account of the Silurian Subcommission's visit to the Wrens Nest can be found in the 'Black Country Bugle', 21.7.11: http://www.blackcountrybugle.co.uk/News/Top-world-geologists-gather-to-explore-the-Dudley-caverns-20072011.htm This article seems to me to illustrate to perfection the absurdity of allowing this planning application to get any further. Ed.

Have a look at our website at: **www.bcgs.info**

The Dudley Bug

Welcome

Welcome to the special Silurian Subcommission 2011 edition of The Dudley Bug. This month we review the conference week and also follow a geologist as he visits a theme park.

Alison and Chris

Siluria Revisited 2011

July 2011 saw the arrival of the International Subcommission on Silurian Stratigraphy Conference in Ludlow, Shropshire. This is where geologists from around the globe share their research and knowledge on the Silurian Geological Period. But our Silurian story began two years ago…

In the summer of 2009, stabilisation works took place within the Step Shaft Mine beneath the Wrens Nest in Dudley. Over 200 samples were taken from the complete Silurian stratigraphic sequence which is present within the underground canal basin. This included several 430 million years old rotted down volcanic ash layers known as bentonites. Further work on these bentonites back at the lab at Dudley Museum and Art Gallery yielded new microfossils and the BGS measured new radiometric dates for the Wenlock – Ludlow Epoch boundary within the Silurian Period.

The delegates meet outside Ludlow Castle

During the summer of 2010, the 'Dudley Geoteam' which consists of young graduate and undergraduate level geology volunteers based at Dudley Museum and Art Gallery, met a group of academic geologists from the USA. We explained how we had been involved with the research on the bentonites and microfossils from Dudley. Astonished at our enthusiasm and commitment, as well being pleased that we were learning a lot from the experience, we were offered sponsorship to attend the recent conference.

Inside Ludlow Castle, after all it is made from Silurian Limestone!

So on Monday 11th July 2011, we made our way to Ludlow to register for the conference. Where else would a bunch of geologists meet other than the pub! So that was where we headed. Plenty of goodies came our way in the form of a field guide, stratigraphic chart, pen and best of all, free drinks vouchers plus a nice t-shirt! The following day was the start of the two days of talks, consisting of 30 presentations about research projects from around the world. The presentation which we had been involved in was by Dr David Ray about the carbon isotope excursions of the Wrens Nest bentonites. Other topics of interest covered scolecodonts, graptolites and a new laser scanning project. The laser scanning project recently scanned the ripple beds in Dudley and we will soon have a high resolution virtual model of the stunning ripple beds available for many uses such as education (http://www.utdallas.edu/igeology/). Following the lectures was a free tour of Ludlow castle before we packed our bags for the field days.

The group fossil hunt at Lea Quarry South, Wenlock Edge

Sadly, one day of field trips to the GSSP international age boundary localities (also known as a golden spike) was missed due to work commitments, but the second day's field trip began at Lea Quarry South at Wenlock Edge, where some interesting techniques were used to gain entry, such as one ►

The group on the reef mound, Wrens Nest

geologist commando rolling under a gate while the rest of us simply climbed over. Although I must add at this point that we did have permission to visit the quarry! Some fantastic gastropod fossils were found here as were large complete corals. Unfortunately the trouble began when it was time to move on to the next location; have you ever tried shifting 60 geologists away from a fossiliferous rock face? Trust us, understanding quantum physics is much easier! Some of the fossil finds here included complete Favosites sp. corals up to 15cm diameter. Sadly we all failed to find a complete Calymene trilobite in the Elton Formation.

Inspecting the stratigraphy at Snake Pit, Wrens Nest

Eventually when the packed lunches containing local Shropshire produce were handed out the group began to move, full of excitement as we headed to the Wrens Nest. Yet again, the group split up and melted into the landscape when we arrived at the reef mound. This time it was easier to move the group as they were led to see some ripples. 'Wow' and 'ooooooh', seems to be the general noise a geologist makes at the sight of old ripples.

Aboard the narrow boat ready for the underground tour

The final stop of the day was a canal trip through Dudley's limestone caverns from the Dudley Canal Trust. The canal trip was proudly sponsored by the Black Country Geological Society, and chairman Gordon Hensman gave a warm multi-lingual welcome to the group upon our arrival at the canalside. During the underground trip we had time to get off the boat and appreciate the stratigraphy much closer than the average visitor. By this time stomachs were growling and hunger growing, so finally a buffet of bostin' Black Country grub was provided at the Holden's Brewery and an open bar. The perfect end to a great geological week. ■

A roller-coaster ride of geology

Dr Nick was a geologist by trade; wherever he went he studied the rocks surrounding him. One day his daughter suggested they go to the local theme park to make the most of the glorious summer day. Although resistant at first, Dr Nick was finally persuaded by the possibility of 'pretty rocks' within the park.

After the long car journey, and several stops to inspect the road cuttings which they passed, Dr Nick and his daughter Annie finally arrived at the theme park. They paid for their tickets and entered the vast park. Screams echoed around the pair as they made their way to the first ride.

The queue was really long for the first ride so Dr Nick soon got bored and began to study the rocks in the distance. They looked very interesting so he made a mental note to go and look at them later on. Finally Annie and Dr Nick got to enjoy their first high speed ride, the roller-coaster. Dr Nick, who is never really one for fast rides, came off it feeling a little ill. He decided to sit the next ride out and found himself a bench by some rocks. After he felt a little better he got his hand lens out of his pocket and began to inspect the rocks. ►

But he was in for a surprise. The rocks were like no other he had seen before. They were plastic looking and sounded very hollow when he tapped them. Shocked at his discovery Dr Nick began to inspect all of the other rocks he could see. They were all fake!

Annie eventually returned from her rides and suggested a walk through the gardens. 'Yes' thought Dr Nick 'there will be real rocks in there.' But Dr Nick was to be very disappointed; there were more fake rocks. At one point he got really scared as a dinosaur was spotted through the undergrowth, a quick mental reference to the greatest of palaeontological films… Jurassic Park. Dr Nick began shouting at the top of his voice at the other park-goers to get the hell outa there! 'Never fear, a geologist is here!' he claimed triumphantly. After causing mass panic in the gardens, he took out a rock hammer from its holster and edged towards the last sighting of the dinosaur. Trembling hands would not stop this brave geologist saving the day. Suddenly a sighting in the distance of a purple theropod caused Dr Nick to charge like a bull towards a bull fighter. As metal clashed with flesh, shouts of fear and pain rang out throughout the gardens. Dr Nick nervously backed off from what he had identified as a Baryonyx. The dinosaur extended its small arms towards its head and to Dr Nick's eternal embarrassment a bald human head was liberated from the fancy dress suit. After explaining to the police that if it had been a real dinosaur he would have been a hero, and geologists around the world are constantly vigilant for the threat of reviving extinct creatures, he was later released without charge.

Trying to forget the unfortunate incident Dr Nick tried to carry on as normal; after all it could have happened to anyone. Annie insisted "Dad you have to come on that big ride there" pointing to what must be the biggest roller-coaster in the park. "Do I have to?" Dr Nick asked, feeling ill at the prospect of all those twists and turns. But he soon found himself being strapped in and heading for the first drop into the darkness. To Dr Nick's surprise, he saw real rocks whilst on this ride, so naturally the geologist inside him got very excited at the prospect of real rocks. Annie was horrified when he suggested they go on the ride again and again, just to see some rocks for a flash of a few seconds as the coaster hurtled past. Fortunately this was the point where the photos were taken from the roller coaster. The hardest part was throwing a hat down to get something for scale on the photos which were sold at the kiosk after the ride.

But Dr Nick's fun was soon to be spoilt by feeling ill again. So Annie suggested a slower roller-coaster which makes you feel like you are flying. As any geologist out in the field knows, you should never go out without your geological map. So Dr Nick lay it down in a secluded spot. Once on the ride, Dr Nick and Annie glided over his map. So they returned to the ride several times.

Finally lunch arrived but Dr Nick had gone and left their chilli con carne at home. So rooting around in his pockets, Dr Nick pulled out several fossils, a £2 coin and a piece of halite. Annie went to find food with the £2 whilst Dr Nick settled for licking his piece of halite.

Soon enough the pair were heading for their final ride of the day. The queue was moving quickly so Dr Nick got excited at what he may see on this one. This particular ride had several loop the loops. As they went into the first loop, Dr Nick's rocks all fell out of his pockets, but luckily enough as they exited the loop, they all landed back in his pockets! Realising he may lose the precious finds forever, he quickly buttoned them up. In the second loop, his hand lens slipped and fell across the front of his eye and to his amazement he could see a real rock in the distance perfectly.

After all the rides and searching, Dr Nick ran across to the rocks he had seen whilst on the loop the loop and jumped up and down in joy. In front of him was the biggest, best specimen of sandstone that he had ever seen.

"A job well done" Dr Nick grinned at Annie as they headed for their car. The journey home consisted of stopping on the opposite sides of the road to check that the rocks were the same as the ones they had looked at on their way to the theme park. A typical geologist's day out! ■

Field Meeting Report

Sunday 3rd April: Saltwells Nature Reserve. Led by Graham Worton (BCGS) and Pip Newbury (Wildlife Trust for Birmingham and the Black Country).

Meeting at 10:00am, in the car park adjacent to the Saltwells Inn, the day was warm and sunny with some cloud and occasional showers. Once gathered, Graham gave an introduction to the visit summarising the geology, human/industrial history and wildlife of the nature reserve.

We followed the Doulton Trail northwards, from the car park to Doulton's Clay Pit, into which we descended after admiring the view. From the Clay Pit our trail continued north past the cut of the Old Tube Line and Lodge Farm reservoir to the Brewin's Canal Section, a deep cutting containing the Dudley No. 2 Canal. Finally we retraced our steps back to the Saltwells Inn and Saltwells Wood.

Doulton's Clay Pit

The Saltwells Local Nature Reserve exists from a legacy of Coal ('Thick' and 'Heathen' coals), ironstone and fireclay extraction during the Industrial Revolution. Royal Doulton worked Doulton's Clay Pit from 1870 and 1940 for fireclay, which was taken by 'Tub' via the Old Tube Line to the Dudley No. 2 Canal. This Canal formed part of a network connecting the heart of the Earl of Dudley's Estate with the Potteries and the rest of the Midlands. Lady Dudley planted Saltwells wood, formerly Lady Wood, in the 18th century to hide the scars of local mining. The Saltwells Inn is all that remains of a former 18th and 19th century brine spa located in Lady Wood for the purposes of curing ills.

After it closed, Doulton's Clay Pit was left to nature and now provides a wetland habitat for many unusual plants, like Common Spotted and Southern Marsh Orchids. Woodland to the west of the Clay Pit, situated on old colliery waste has created a heathland habitat unique to the Black Country. Other habitats found here include open grass and water, scrub and rough herbage. Several trails criss-cross the Reserve allowing the public to enjoy the abundance of animal and plant life found here.

There are three designated Sites of Special Scientific Interest (SSSI) each with its own bio- and geo-diversity:

1) Doulton's Clay Pit - because of its Coal Measures sequence
2) Brewin's Canal Section
3) Remains of the old tube line.

Geology

Throughout the visit Graham emphasised the importance of observing and reading rock exposures to gather information such as colour, appearance, lithology and texture, bedding and discontinuity features, strata thickness, grain size and shape, fossils and diagenetic features to name but a few. This information combined with the basic geological principles of superposition and uniformitarianism enables some basic and initial interpretations about environmental conditions and settings, chemical processes, climate, tectonic activity, plant and animal life to be made.

The rocks seen at Saltwells are summarised below. The sequence of Middle Coal Measures strata is known as a Cyclothem. This sequence is interpreted as being deposited in a single cycle of sedimentation starting with rivers eroding and flooding a former Silurian/Devonian landscape. Then sediment and vegetation deposition followed, within heavily forested swamps.

Saltwells sits on the eastern edge of the north-south trending Netherton anticline, which rises northwards forming Netherton Hill. In the bottom of Doulton's clay pit a north-south trending normal fault has downthrown the strata to the west and is believed to influence the drainage of surface water from the pit. ►

STRATUM	AGE	LOCATION	DESCRIPTION
Middle Coal Measures	Carboniferous	Doulton's Clay Pit	Sequence of yellow brown coarse conglomeritic sandstone overlain by beds of dark grey shale, fireclay, ironstone, coal and seatearth. Containing abundant fossil Lycopod and Lepidodendron plant fragments.
Downton Castle Sandstone	Silurian/ Devonian	Dudley No. 2 Canal cutting, High Bridge Road	Purple and green mudstone and sandstone.
Upper Ludlow Shale	Silurian	Old Tube Line Tunnel	Grey mudstone and siltstone containing fossil brachiopods and arthropod tracks.

The Middle Coal Measures strata unconformably overlie the Downton Castle Sandstone. This unconformity represents approximately 100 million years of lost geological history, corresponding to the closure of the Iapetus Ocean and the early stages of uplift that produced the Netherton anticline.

Silurian/Carboniferous Unconformity

It is believed that the Middle Coal Measures were deposited in a subsiding basin. Repetition of these sequences suggests that the rate of subsidence was not continuous. Is this likely? Or were other yet unidentified processes occurring at the time? Graham pointed out that this highlights an important limitation to the principle of Uniformitarianism, which in this case is too simple to explain what is going on.

The principle of superposition relates the age of rocks to their position in a stratigraphic sequence; those at the base are oldest and those higher up youngest. The principle of uniformitarianism was coined by Charles Lyell in the early 1830's and in general terms indicates how processes in the past are the same as those occurring today.

Although this principle may help to interpret past environments, it must be remembered that species and environmental evolution go hand in hand with animals, plants, climate and chemical balances being different from those today. The fossil record only records a small percentage of the plant and animal life that existed at the time and as Graham pointed out much of the wildlife we see today is unlikely to be preserved for the future.

The Old Tube Line

Much vegetation currently obscures various exposures within Doulton's Clay Pit, the Old Tube Line and Brewin's Canal Section. Negotiations are under way for a chance to get BCGS members involved with vegetation clearance and some interpretation at these locations. Hopefully this will get under way towards the end of the summer and into the autumn/ winter. In the meantime if members are interested in lending a hand please contact Andy Harrison by e-mail: andrewcfharrison@yahoo.com, or mobile 07973 330 706 and let me know.

I would like to thank Graham for his very interesting and thought provoking tour of the reserve and look forward to his next field outing. ■

Andy Harrison

Please send material for the next Newsletter to:

julieschroder@blueyonder.co.uk

42 Billesley Lane, Moseley, Birmingham, B13 9QS.

More Glacial Erratics - in Wombourne and beyond...

There are a few erratics in Wombourne, to the west of the Black Country, and many more in the area of South Staffordshire and Shropshire between Wolverhampton and Bridgnorth. Close to the centre of the village at the entrance to a park area in Walk Lane (locality SO 874928, photo 1) there are two. The photograph shows one of these, a pink crystalline boulder about 75cm across, with an uneven, plucked face. The other rock is next to it, about the same size, also crystalline but with a schistose texture. We conclude that exotic rocks such as these are erratics carried by the Pleistocene glaciers. The other prominent erratics are on Ounsdale Road out of Wombourne to the west (SO 859926, photo 2). There are five boulders in a row across the old entrance to a quarry opposite the Poolhouse Farm housing estate. They obviously have not been left in that exact position by glaciers, but because of their size and weight it is safe to assume that they have only been moved a short distance. They consist of rock types which indicate a derivation far from Wombourne.

1. Walk Lane, Wombourne, SO 874928

2. Ounsdale Road, SO 859926

Looking at these boulders from the left of photo 2, there is firstly a small, 0.75m boulder of white, muscovite granite with orthoclase phenocrysts, a distinctive rock that should be easy to match to its parent intrusion. Secondly: a medium grained dark crystalline rock of similar size. The third boulder is very interesting, large, 2m across with big xenoliths (photo 3) and what appear to be striations or flow banding (photo 4). It is difficult to see a large fresh surface but it has many of the features of a pyroclastic rock that you might find in the Borrowdale Volcanics of the Lake District, or in North Wales. The next two blocks are medium to fine grained dark igneous rocks. One of them has been broken and so the fresh surface indicates a dolerite (photo 5). Whenever we see a dolerite in the area of the Black Country we tend to think of a derivation from Rowley, but this is unlikely as there is little evidence of the ice coming from that direction. Indeed, the Dudley, Rowley, Clent ridge was a considerable barrier influencing ice movement.

3. Erratic 3 of 5, SO 859926

4. Striations or flow banding? SO 859926

5. Dolorite SO 859926

Inspired to find more I explored the area within walking distance of Wombourne to the west. I diligently recorded erratics at twenty-one localities, with at least forty exotic boulders likely to be brought by the ice. I will just highlight here three villages where they can be found. In Lower Penn SO 870959 there are several. ►

There is one dolerite boulder on the edge of the village green, and as you walk down the hill there seem to be lots of foreign boulders incorporated into the walls. At the entrance to Home Farm, SO 868960 there are four erratics, the most prominent being pink granite.

6. Trysull, SO 849937

Another interesting locality is Trysull, a pleasant village to the west of Wombourne. Again there are a couple of large blocks by the village green, (SO 849937 photo 6). One is a very weathered, crystalline block, and has an inscription on it marking the coronation in 1902 of King Edward VII. Trysull is also a good place to refresh yourself in the Plough, and sitting behind this pub, I noticed a large granite boulder on a wall (SO 851940 photo 7). It is a white, coarse granite, 30-40% quartz with white feldspar, presumably orthoclase. It also contains xenoliths of dark material that have been incorporated into the magma. A geologist familiar with the granites of Britain might recognise its derivation.


7. The Plough, Trysull, SO 851940

However, the village with too many probable erratics to record each one individually is Seisdon, and particularly Post Office Road (SO 838952) where the walls are full of erratic boulders. There are distinctive erratics in many other places; if you ever drive through Bobbington you can see a couple of large blocks in two front gardens on the main road. Indeed, it appeared to me to be more significant to find places where there are no erratics, they are such a common feature of this area.

This area between Bridgnorth and Wolverhampton is very significant and was dominated by the late Devensian glaciers, with a maximum limit about 17,000 years BP. The ice originated in the Lake District and the West of Scotland and then came into this area crossing Wales from the Irish Sea Basin, hence the term Irish Sea Ice. As it says in the BGS 'Geology of the Wolverhampton and Telford district' published in 2002, the maximum extent of the ice margin ran from just south of Bridgnorth, eastward towards Trysull and then north-eastward through the southern suburbs of Wolverhampton.

There are more erratics to be described, and other issues about this glacial event to be addressed. Erratics have created a lot of interest over the past 150 years, not only to geologists but also with the landowners of the district. ■

Bill Groves

Geobabble

Health and Safety. These three words can elicit all sorts of reactions from geologists, depending upon the situation, and most will have some amusing or frustrating story to tell about how these regulations have hampered their activities, whether in the laboratory or in the field. I have my own; I was once told that I must not lift trays of rocks or individual heavy specimens. One authority in the north of England brought out a regulation that if you were leading a party above a certain altitude, one of the leaders should have a mountain leadership qualification. Unfortunately, one school was situated above that altitude which made simple visits to the library difficult.

However, it is easy to be flippant and poke fun, but the safety of field parties is a very serious issue. It is when you are a parent and your son or daughter is interested in earth science that you become interested in safety precautions. If your teenager comes home and says that there is an optional field trip to Iceland, Spain, Morocco, India or wherever - and these are all places that young geologists visit - you will want to know the answers to the 'what if?' question: injury, accident, transport problems, snake bite etc. The potential hazards are endless. ►

Organisations, whether in education or industry have to follow a strict code based on the Health and Safety at Work Act of 1974, and publish safety regulations for their laboratories, work places, machinery and fieldwork. These are very detailed, and as far as geology is concerned, universities often put them online for all to see. They are very sensible, recognising the specific hazards involved in geology. I looked for any mention of lifting trays of rocks; usually it is pointed out that rocks can be heavy and so care must be taken and full use made of any available lifts and trolleys. The fundamental principle seems to be that within the regulations, each individual is responsible for his or her own safety. Universities also normally have a sentence saying that irresponsible behaviour during fieldwork may lead to exclusion, and even legal action. Students would be required to read the regulations and sign a copy as a form of contract. I have little direct experience of procedures in industry but a senior manager in a large company with quarries and clay processing plants recently told me that he did not mind doing any amount of work in this area; “If it saves just one life, it is worth it.”

There are standard fieldwork procedures wherever you are going, but leaders have to publish their exact plans before the trip. It is most annoying when these are sensibly adjusted in a minor way, only to incur criticism for doing so, breaking regulations. For instance: the exposure we were going to look at has been closed, so we are going to another one, but I forgot to put it in my risk assessment. The rain will not stop, so we will go for a coffee break.

The history that led to the present situation is worth looking at. Those of us who can remember fieldwork before the Act of 1974 will know that trips would be organised by colleges, schools and geological organisations led by people without any specific leader qualifications; indeed there were none. I led parties of students on residential courses to various localities and I just had to satisfy my line manager and the parents that my plans were viable and that I was a leader to be trusted. But there were some high profile accidents in that decade involving young people that led to regulations being introduced. In February 1977 a young geology teacher was killed and two of her A-level students seriously injured by a rock fall of chalk in Lulworth cove. It was a complete accident.

I do not believe that it is health and safety itself that has caused problems in peoples’ minds. There has been a complete change in society’s attitude to ‘accidents’. The Wren’s Nest, for example, had many holes and caves you could go into including the Seven Sisters. You were expected to take care because there had been accidents in the past. Some would choose to scramble down the dip slope towards the canal. If there was an accident it was your own fault for putting yourself into an obviously dangerous environment. If I tripped over a flagstone in Dudley Market, it was my fault for not looking! Today, someone must be responsible for every accident, and this was not helped when the legal profession was allowed to advertise. Fifty years ago ‘no win no fee’ court actions were uncommon. There no longer seems to be a complete 'accident'. The other, more annoying feature is the way health and safety is often administered, so that the person responsible on the ground often does not have the authority to make sensible adjustments, so plays safe and tells the geologists not to lift heavy rocks. ■

Bill Groves

Members' Forum

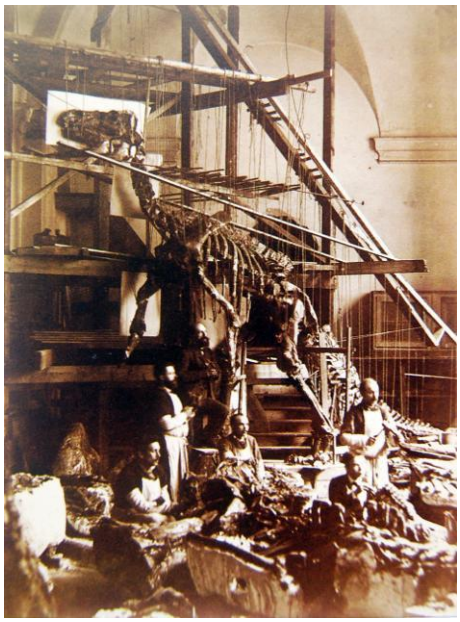
Some More Geological Wonderlands

Inspired by your editor's article on the Geological Museum at Golspie *(Newsletter No.205 p.14)* members might be interested to hear of one or two more inspirational venues of delight for the peripatetic geo-tourist.

The first couple of locations I draw your attention to are also both in far flung corners of what little remains of the Empire (but hurry before further devolution necessitates the carrying of your passport!) On Angelsey a few years ago (August 2006) I chanced upon 'Stone Science'. This was a privately owned geological museum until at least 2007 when (as noted in 'Down to Earth' No. 58) it was put up for sale... so this recommendation may no longer exist... sadly. Exhibits included a T. rex skull, a ►

whole mammoth head, some amazing mineral specimens and archaeological artefacts including a reconstructed Iron-Age round house. This museum is shown on the OS map 2km west of Pentraeth (1:50,000 sheet 114: SH 500 785). Does anyone know whether it still exists?

The second such museum also came upon me quite out of the blue on my way to Scotland's answer to Hay-on-Wye, in Wigtown (bookshops galore... just right for the weather I was enjoying on this particular trip, reminiscent of a Carnian Pluvial)! This museum was signposted off the main road at Creetown (A75 - almost opposite Wigtown on the eponymous bay), and just as well because one would never guess its existence otherwise! I think it called itself a 'Rock & Gem Museum', and from recollection this was indeed its main focus with some really fine mineral exhibits. Although this discovery dates only from May 2008 (so perhaps it's still there!), my further recollections are rather vague! I recall that there was a lot of 'informative material' even for the experienced geologist. This museum is also privately owned and run and consequently also has a strong commercial element... but not in any 'dumbed down' way.



Wikimedia Commons: Workmen mounting the first Iguanodon bernissartensis

For those of you who might venture across the water (in search of continental sunshine?), if you should be in the vicinity of Mons or Tournai in southern Belgium, SW of Brussels, don't miss the museum at Bernissart (bang on the Franco-Belgian border, on the Belgian side). This was the location of one of the most celebrated fossil discoveries (and there were many!) in Europe during the 19th century. The area lies in a concealed coalfield area known as the Mons Basin, with overlying Cretaceous and Tertiary strata including rocks similar to our Wealden formations. These are of lower Cretaceous age and so lie unconformably on the productive coal beds. The unconformity has the bad habit of including areas of karstic collapse structures known as 'crans'. These are somewhat like the so-called 'pocket deposits' of Derbyshire, where poorly consolidated patches of Tertiary (Neogene) strata infill sinkholes in the underlying Carboniferous limestones. 'Crans' are bad news for miners, in that they behave much like washouts in our own Coal Measures, with the sudden loss of a coal seam through penecontemporaneous erosion. However, one particular 'cran' turned out to be a marvel for the science of palaeontology, because in 1878 a coal working ploughed straight into it. This 'cran' was infilled not with superincumbent coal-measure mudstones but was a rather larger than usual beast in which sediments from a much higher horizon, the Wealden, had collapsed. But even better, these Wealden clays contained the remains of 10 almost complete Iguanodons, and almost as many less complete ones. The find was a sensation... and it took decades to transform the remains into a museum display. The majority grouping is now housed in the Royal Institute Museum in Brussels, but Bernissart retains one of the originals. The site is a lagerstatten, having preserved a whole ecological assemblage of other remains. This forms the core of the Bernissart experience, but it also offers other fine fossils (especially some ammonites including heteromorphic forms). Well worth seeing! ■

Mike Allen

Museum at Bernissart: http://www.bernissart.be/Site_Anglais/infos_pratiques.htm
The museum opens : from 10 am to 4 pm, Tuesday to Sunday.
Tariffs: Adult: 4 euros Senior card and others: 3 euros
Children from 6 to 12 year: 3 euros Children from 12 to 16 year: 3,20 euros

Robert Bucki, Honorary Secretary,
3 Montpellier Gardens,
Dudley, DY1 2UQ.
☎ 01384 829100
bucki@blueyonder.co.uk

Julie Schroder, Newsletter Editor,
42 Billesley Lane, Moseley,
Birmingham, B13 9QS.
☎ 0121 449 2407
julieschroder@blueyonder.co.uk