



Newsletter No. 248

April 2018

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Déjà vu? - read on!



**Copy date for the
next Newsletter is
Friday 1 June**

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For enquiries about field and geoconservation meetings please contact the Field Secretary.

To submit items for the Newsletter please contact the Newsletter Editor.

For all other business and enquiries please contact the Honorary Secretary.

For further information see our website: bcgs.info, Twitter: [@BCGeoSoc](https://twitter.com/BCGeoSoc) and [Facebook](https://www.facebook.com/bcgs).

Future Programme

Indoor meetings will be held in the Abbey Room at the Dudley Archives, Tipton Road, Dudley, DY1 4SQ, 7.30 for 8.00 o'clock start unless stated otherwise.

Visitors are welcome to attend BCGS events but there will be a charge of £1.00.

Please let Andy Harrison know* in advance if you intend to go to any of the field or geoconservation meetings. 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.

***For the meetings on 1 May & 9 June contact Ray Pratt NOT Andy. See below for details.**

Saturday 7 April (Field meeting): Forest of Dean, Soudley Valley and Bixslade Valley, led by John Moseley, Gloucestershire Geology Trust. Meet at Soudley Village Hall (GR 655104) at 10.30. We will follow the Soudley Valley Geology and Landscape Trail (Devonian - Lower Carboniferous). Distance approx. 4 km. Lunch at 1.00 (approx). Option of pub or cafe lunch or bring a packed lunch. Afternoon (2.00 approx): drive to Bixslade Valley (5.6 miles). Parking on the west side of B4234 at the south end of Cannop Ponds (GR 608099). Finish: 3.30 - 4.00 (approx).

Monday 16 April (Indoor meeting): 'My favourite science: James Parkinson's Organic Remains of a Former World'. Speaker: Cherry Lewis, winner of The Geological Society of London's Sue Tyler Friedman medal. Some of you may know her as a result of her book 'The Dating Game'. She is the author of a recently published book on James Parkinson: 'The Enlightened Mr. Parkinson: The Pioneering Life of a Forgotten English Surgeon'.

Vacancy – Meetings Secretary

Our former Meetings Secretary, Roy Starkey, stood down at the AGM in March. If you are interested in taking on this role, and shaping the future programme of talks, please contact any member of the Committee.

Tuesday 1 May (Evening Field meeting): Building Stones of Birmingham from the Town Hall to the Cathedral, led by Julie Schroder. (NB - this event will be moved to Thursday 3 May if the weather is too bad on Tuesday. Confirmation to those who have registered will be by email or phone.) Meet at 6.00 for 6.15 in Victoria Square, Birmingham, by the statue of Queen Victoria. Joint meeting with the Geol Soc WM Regional Group. We will take a fresh look at some iconic and less well-known buildings, travelling through aeons of geological time and pausing to examine some splendid fossils. We will finish at the Old Joint Stock on Temple Row in the Cathedral Square for refreshments. **Numbers limited to 20. Booking essential** via Ray Pratt from the Geol Soc WM. Text: 07867785779 or email: geostart@btinternet.com For more info please see [flyer on the Geol Soc WM website](#).

Saturday 12 May (Field meeting): Calton Hill, Miller's Dale and Tideswell Dale, Derbyshire, led by Mike Allen. Meet at 11.00 in a large car park at the top of the hill on the A6 near Topley Pike GR: SK113725. Drive together to start point, then walk approx 600m to Calton Hill SSSI near Chelmorton. Drive east to Miller's Dale Station car park (small charge). Explore around Ravenstor and Litton Mill (walking approx. 2 miles in Miller's Dale). Bring a packed lunch for picnic at Miller's Dale station (toilets here), or possible pub lunch at the Angler's Rest (may take a while to be served). Possible extension to walk on to Tideswell Dale (time permitting). Easy walking, some steep slopes which might be slippery if wet, and some rough ground. Wear suitable outdoor clothing. Finish around 4.30 – 5.00.

Saturday 9 June (Field meeting): Palaeozoic Sites of the Black Country, led by Andrew Harrison, Graham Worton, and Julie Schroder. Joint meeting with the Geological Society West Midlands Regional Group. Meet at 10.00 at the Lickey Hills Country Park Visitor Centre, Warren Lane, Birmingham, B45 8ER. We will start by visiting a variety of exposures in the Lickey Quartzite Formation following the 'Champions' trail, then on to visit the Rubery Cutting, Wren's Nest, Barrow Hill (if there's time) and Saltwells LNR. Due to finish around 4.30. Wear stout footwear and bring a packed lunch. **Numbers limited to 20. Pre-booking essential.** Register via Ray Pratt from the Geological Society WM. Text: 07867785779 or email: geostart@btinternet.com

Saturday 21 July (Field meeting): Nottingham's Sandstone Caverns, led by Tony Waltham. Meet at 10.30. Bring stout footwear and a torch. Details TBC.

Saturday 18 August (Field meeting): Visit to Wren's Nest and the newly opened Dudley Museum and Art Gallery. Details TBC.

Procedures for Field Meetings

Insurance

The Society provides public liability insurance for field meetings but personal accident cover is the responsibility of the participant. Details can be obtained from the Secretary, and further helpful information can be found in the [Code for Geological Field Work](#) published by the GA and available on our website. Schools and other bodies should arrange their own insurance as a matter of course.

Health and Safety

If you are unsure about the risks involved or your ability to participate safely, you should contact the Field Secretary. Please take note of any risk assessments or safety briefing, and make sure that you have any safety equipment specified. The Society does not provide hard hats for use of members or visitors. It is your responsibility to provide your own safety equipment (eg. hard hats, hi-viz jackets, safety boots and goggles/glasses) and to use these when you feel it is necessary or when a site owner makes it a condition of entry. Hammering is not permitted unless specific permission has been sought and granted. Leaders provide their services on a purely voluntary basis and may not be professionally qualified.

Other Societies and Events

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

Woolhope Naturalists' Field Club - Geology Section

Wednesday 9 May: Visit to Oxford with guided tour with a former curator to the Natural History Museum followed by a guided afternoon walk through historic Oxford churches, colleges and the famous Holywell Cemetery. Leaders: Nina Morgan & Philip Powell.

Non-members of the Club pay £1 extra. Bookings must be made via the Field Secretary Sue Olver on 01432 761693, when more details of the meeting will be given. Email: susanolver@hotmail.com or visit: <http://www.woolhopeclub.org.uk/Programme.html>

Warwickshire Geological Conservation Group

Wednesday 18 April: 'Waking the giant – how a changing climate triggers earthquakes, tsunamis and volcanoes.' Speaker: Prof Bill McGuire.

Saturday 21 April at 9.30: Shipston-on-Stour. To look at both brickwork and building stones. Introductory talk from a brickwork expert followed by a town walk, possibly with lunch out. Led by Dave Kennett & Hugh Jones.

Doors open at 7.00 for coffee before a 7.30 start at St Francis Church Hall, 110 Warwick Road, Kenilworth, CV8 1HL. For more details visit: <http://www.wgcg.co.uk/> or email: WarwickshireGCG@gmail.com. There is a charge of £2.00 for non-members.

East Midlands Geological Society

Saturday 14 April at 6.00: 'A day in AD 79'. Speaker: Paul Olver.

Non-members are welcome. Venue: Geography Department of Nottingham University, which is in the Sir Clive Granger Building. Further info: www.emgs.org.uk or email: secretary@emgs.org.uk

Manchester Geological Association

Tuesday 8 May: Carnforth 'igneous' intrusion and Trowbarrow Quarry. Led by Peter del Strother and Barbara Gordon.

Saturday 2 June: Buxton Dome. Leader TBC.

Contact email: outdoors@mangeolassoc.org.uk For further information about meetings go to: <http://www.mangeolassoc.org.uk/> Visitors are always welcome.

North Staffordshire Group of the Geologists' Association

Saturday 14 April at 10.30: Visit to Lapworth Museum, Birmingham.

Thursday 19 April at 6.30: GSL NW Regional Group Lecture at Keele: 'Hydrogeology of Beer'.
Speaker Rick Brassington.

Wednesday June 13 at 6.00: Evening walk: Alderley Edge. Led by Eileen Fraser.

For enquiries: Steve Alcock, Longfields, Park Lane, Cheddleton, Leek, Staffs, ST13 7JS. Tel: 01538 360431 or 07711 501028. Email: steves261@aol.com More info: www.esci.keele.ac.uk/nsग्ga/

Open University Geological Society - West Midlands Branch

Saturday 28 April: Field Skills Day Bridgnorth. Leader Alan Richardson. Contact alanrichardson.geo@gmail.com

Saturday 12 May: Brown End Quarry and Froghall Wharf, Staffs. Leader Ian Stimpson. Contact sandra.morgan.13@gmail.com

For more details visit the OUGS web site here: <http://ougs.org/events/index.php?branchcode=wmi>

Mid Wales Geology Club

Wednesday 25 April: 'Rocks along Montgomeryshire Canal'. Speaker: Andrew Jenkinson.

Wednesday 16 May: 'Postglacial Environmental Change and Human Adaptation during the Mesolithic in Sussex'. Guest Speaker – Dr. Richard Carter.

Sunday 20 May: Coed-y-Brenin. Led by Dr. John Mason (Guest).

Further information: Tony Thorp (Ed. newsletter & Hon. Sec): Tel. 01686 624820 and 622517 tonydolfor@gmail.com Website: <http://midwalesgeology.org.uk> Unless otherwise stated, meetings start at 7.15 (tea/coffee & biscuits) with talks at 7.30 at Plas Dolerw, Milford Road, Newtown.

Lapworth Museum Events

Mondays 7 May and 4 June from 12.00-1.00: Guided tours of the Museum.

Wednesday 16 May 5.30-7.00 at The Birmingham and Midland Institute: 'The Chicxulub Impact - The End of an Era'. Professor Morgan will talk about her research into the asteroid impact that wiped out the dinosaurs 65 million years ago, and discuss findings from the Chicxulub drilling site in the Gulf of Mexico.

This event is free, but registration (on line) is mandatory. For more information: <http://www.birmingham.ac.uk/facilities/lapworth-museum/events/lectures.aspx>

Teme Valley Geological Society

Monday 16 April: Impact Earth with Dr Paul Olver.

Events are held in Martley Memorial Hall. Contact John Nicklin on 01886 888318. For more details visit: <http://www.geo-village.eu/> Non-members £3.

Annual General Meeting Report

The 2018 AGM was held on Monday 19 March at 7.30, chaired by Vice Chairman Andy Harrison in the absence of the Chairman, Graham Worton. This was followed by our social evening postponed from December (*see Editorial*). Below is a summary of the reports and election of officers.

Treasurer's Report

The Treasurer circulated the audited financial statement for 2017. There was little change from the previous year and the accounts remained in a healthy state. There was a slight fall in membership subscriptions. Extra income came from the sale of books, etc. donated by members. Slightly lower expenditure came from Room Hiring and the cost of refreshments for the Members' Evening due to the cancellation because of the snow. Another economy came from printing the Newsletter 'in house' now that most members receive their Newsletter by email. The Treasurer pointed out that the Society holds a building society account in reserve. The Treasurer and Committee extended their thanks to Davena Dyball for auditing the accounts.

Chairman's Report

The Chairman's Report had been circulated by email to Members, and the Vice Chairman summarised the main points. 2017 had seen a wide variety of talks, indoor meetings and geoconservation days and particular thanks were extended to Roy Starkey and Andrew Harrison for putting the programme together. Thanks were offered to the membership for their contributions to the newsletter, and to those involved in its on-going production. Thanks were also offered to all those who have created a new dialogue through social media; to the webmaster for the online photo archive; and to all members of the committee for their hard work.

2017 had been a challenging year involving the transfer from the former Museum and Art Gallery to the Archives and Local History Centre, which now has the added iteration 'Dudley Museum and Archives'. The Chairman reported that they were now well settled in and noted with satisfaction that the Society meetings were once again under the same roof as the geological collections. This venue should become the headquarters of the Black Country UNESCO Global Geopark, and the Chairman outlined the history and current status of the Black Country's bid to join the UNESCO Global Geopark family. A final report will be submitted to support the bid in spring 2018.

A very active year of geoconservation work had been co-ordinated by Andy Harrison, and the BCGS had again worked in partnership with various teams of friends and wardens across Black Country sites. The Chairman extolled the virtues of the conservation days for their sociability, and for the sense of purpose and achievement for the members who help.

The Chairman acknowledged the awards received by three BCGS members during the year; an MBE for Alan Cutler, the Marsh Award for Roy Starkey, and the Brighton Medal for Graham Worton. ►

Election of Officers

All members of the Committee had offered themselves for re-election, with the exception of the Meetings Secretary. The Vice-Chairman thanked Meetings Secretary, Roy Starkey, for his contribution to the Society and to the Committee. It was also agreed that the Committee Members be elected as follows:

Chairman: Graham Worton; Hon Secretary: Robyn Amos; Treasurer: Alan Clewlow;
Vice Chairman and Field & Geoconservation Meetings Secretary: Andy Harrison;
Meetings Secretary: **Vacant**; Newsletter Editor: Julie Schroder; Webmaster: John Schroder;
Social Media: Peter Purewal, Christopher Broughton, Robyn Amos;
Other members: Bob Bucki, Dave Burgess.

Davena Dyball was asked, and agreed to audit the accounts for next year's AGM. ■

Julie Schroder

Editorial

Following the AGM, those members who attended had the pleasure of participating in a quiz which had been devised by Graham Worton and Robyn Amos, originally for the cancelled December meeting. What a treat this proved to be! Divided into 4 teams, we put our heads together to answer questions in 5 rounds, very capably hosted by Robyn. The first round was on general questions about the Black Country, the second concentrated on Black Country geology, the third was a picture quiz with 20 images to identify, the fourth focussed on fossils, and finally a round on minerals.

As a background to the whole evening there was a superb display on the subject of dinosaurs assembled by Steve Birch. There were dinosaur models, detailed descriptive text and images, and a splendid assemblage of dinosaur-related fossils from Steve's collection. On behalf of the Society I'd like to extend a big thank you to Steve for the display, to Bob Bucki for organising a delicious buffet for us once again, and very special thanks to Robyn for the quiz.



Steven Birch's Dinosaur Display at the Social Evening

In this issue we bring the usual varied mix from our members. Alan Richardson's item on the Brierley Hill Road cutting in the last issue inspired a flurry of activity (see p8), and there is an interesting item from Peter Oliver on the Abberley and Malvern Hills Geopark (p14). Peter was one of the founder members of BCGS back in 1975, and in this item he introduces us to the newly extended boundary of the A&MH Geopark.

We have one more indoor meeting and a full programme of field trips for the summer. Please make every effort to take advantage of these great opportunities to learn more about geology! ■

Julie Schroder

More on the Brierley Hill Road Cutting

Following Alan Richardson's article in the February Issue about the sorry state of the Brierley Hill Road cutting, there's good news on the clearance front, and a fascinating response from Alan Cutler. Read on... (but note that Alan Cutler wrote before he was aware of the imminent clearance work). Ed.

Recent Developments

In the last issue of the Newsletter (February 2018) you will remember that Alan Richardson made a heartfelt plea for some action to improve the condition and status of this important geological site, a designated SINC (Site of Importance for Nature Conservation). Shortly after publication, at our Indoor Meeting on 19 February I learned from Graham Worton that the Council were about to start work on the site - the next day! A miraculously swift response to Alan's plea? Well, not exactly. Health and safety issues regarding a crack in the sandstone and dangerous obstruction of the pavement had been under discussion for some time, and the timing was a co-incidence. Fortunately the work was planned and carried out under Graham's watchful eye, and by the end of that week the site had been transformed (*see front cover photo, sent by Andy Harrison*).

Julie Schroder

A reply - and some history of the site

I was interested to see Alan Richardson's piece and the photo of the road cutting in Brierley Hill Road at Wordsley in the February issue of the BCGS Newsletter. I know the site well as I live only about half a mile from it and will normally pass it many times each week.

The site together with the neighbouring exposures of Permian, (Bridgnorth Sandstone, Clent formation) and Coal Measures (Etruria sandstones) at Buckpool, always made a good BCGS field trip location for geology, landscape and demonstrating the boundary fault structure (here split into two branches). I may still have the handouts if they haven't gone to Himley. Peter Whitehead (Walsall) and Chris Darmon also used to use it for their excursions, and may still do so.



The proliferation of vegetation on most geological and ecological sites everywhere has become a serious problem in recent years partly owing to warm, wet winters but also lack of site management. This particular site is no different and has needed attention for well over a decade, but the problem is exacerbated by the fact that the road is extremely busy and the footway is rather narrow. This means that H&S considerations suggest that traffic control would be needed, and possibly scaffolding and that requires Local Highways approval and involvement.

I believe the cutting is part of Highways land and that the boundary of the adjoining gardens is at the top of the cutting. Perhaps it needs a complaint to the effect that the footway is becoming narrower owing to the build up of vegetation at road level and therefore dangerous. The route is used by children who attend the nearby Wordsley School (aka Buckpool school). ►

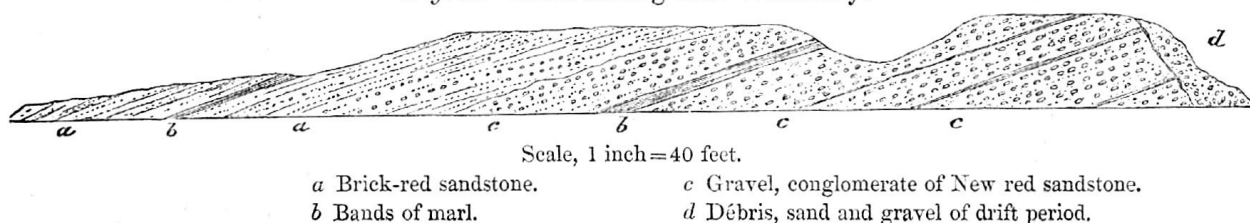
Over 25 years ago the Society was involved in a major clean-up of the Hayes Cutting at Lye with the blessing of Highways who also provided a skip for the trimmings/soil removal. I looked at the Brierley Hill road cutting site with Paul Stevenson from the Wildlife Trust five or six years ago when we were selecting sites for enhancement as part of the B&BC Nature Improvement Area project, which now feature in the regular BCGS geoconservation programme organised by Andy Harrison. We were hoping that the Barrow Hill/Fens Pool rangers would, with their internal Council contacts, be well placed to get things to happen. In the event the Society did some work on the adjacent quarry at the end of Watery Lane where the Bridgnorth (Dune) Sandstone is exposed on the western branch of the coalfield boundary fault. I also understand that some work is planned to make more of the Etruria exposure.

As regards Alan Richardson's entreaties, with which I do concur, I can throw some additional light on the site. The GCUK leaflet, although having a national audience, did have a local origin because I co-ordinated and produced it! I also used the same illustration (which was mine) on the cover of the last leaflet I produced in the Scorching Deserts and Icy Wastes series in 2010, subtitled 'Discovering hidden landscapes of Stourbridge'. This was the Dudley Borough version to complement those produced for the other Black Country boroughs previously, as part of the Geodiversity Action Plan project. The leaflets are stored at Himley, but a pdf version is on the BCGS website: <http://bcgs.info/pub/local-geology/geological-leaflets-and-guides/>

You will all be pleased to know that the site was one of the first designated non-statutory geological SINC's (Site of Importance for Nature Conservation) in the West Midlands region (Dudley-1987) and still has that protection through the planning system. Although it will be of little comfort, the site was on the original list of the best sites for the Black Country Geopark Application, but Graham and the management group were told firmly to reduce the number to 45 sites and include cultural sites in equal measure to geological. Norton Covert, strategically located right on the southern boundary of Dudley borough, which was mentioned in a recent Newsletter, is on the list as it is a joint geological/ecological SINC and has interpretative signs and a friends group who oversee it. However I believe once we have got the Geopark approval we may see the number of promoted sites gradually increase.

The list of sites on the BCGS website numbers only ten but that could be increased to around a hundred sites all of which are either SSSIs, SINC's or SLINC's. Some are brilliant, like the Brierley Hill Road cutting. However, many are less impressive, but are nevertheless designated because of their scientific, educational, historical, amenity or landscape importance. Some are worthy of enhancement but others are safer being left in obscurity.

Fig. 2.—Road cutting near Wordesley.



J. Beete Jukes's Geological Survey memoir (1853) 'On the geology of the South Staffordshire Coalfield'

Lastly, you may be interested to know that the cutting is featured, although not described, in the first chapter (New Red Sandstone) of J. Beete Jukes's Geological Survey memoir (1853) 'On the geology of the South Staffordshire Coalfield'. So this site ticks the historical box as well. Note the Victorian spelling of 'Wordesley'. ■

Alan Cutler

Field Meeting Report

Sunday 1 October 2017: South Malverns Field Visit. Led by John Payne of the Herefordshire and Worcestershire Earth Heritage Trust, and the Woolhope Geology Club.

Our final field visit of 2017 was joint with members of the Open University Geological Society, West Midlands branch, for a visit to the southern Malverns. This was a return field visit, following a similar route to our previous visit, also led by John Payne in 2007. We met John at the Hollybush car park on the north side of the Tewkesbury to Ledbury road at 10.00. Throughout the day, the weather was mild, fairly cloudy and windy with some light showers, which meant that our route was slightly altered.

Starting with an ascent to the summit of Raggedstone Hill, we then descended the far side into the Valley of Whiteleaved Oak. Wet conditions meant John decided to avoid Chase End Hill, so we circled Raggedstone Hill before returning to the Hollybush car park. After lunch we drove to Gullet Quarry.

John started with a summary of how the Malvern Hills and surrounding area formed, which generally follows the same tectonic history that we saw at Huntley Quarry in July. Forming deep underground approximately 700 million years ago, earth movements gradually brought the rocks of the Malverns Complex to the surface by the early Cambrian Period, approximately 200 million years later. Carboniferous earth movements during the Variscan Orogeny heavily influenced the area. A force from the south-east pushed up a slab of rock, approximately 1km thick, to form the present day Malvern Hills.



*Malverns Complex Thrust Fault
at the Hollybush Earth House*

Following the road east from the car park, our first stop was the Hollybush Earth House, which owner Simon Watts has been constructing since 2000. At the back of the property is a large exposure of highly fractured and rotted igneous rocks overlying less weathered rocks, both belonging to the Malverns Complex. Separating the two layers is a thrust fault dipping roughly eastwards which is an element of the East Malvern Fault system. The highly fractured overlying Malvern rocks are a result of multiple tectonic collision events.

Heading southwards we started the 100m climb to Raggedstone Hill summit, stopping part way up to admire the view eastwards. From the Malverns the ground dropped down to the Triassic Mercia Mudstone plains of the Severn Vale with its various Quaternary features resulting from the Anglian and Devensian glacial events. Forming the eastern horizon were the Jurassic outliers of Bredon Hill and the Cotswolds.

The Raggedstone Hill summit was a double peak of hard Malverns Complex rocks with a separating valley of softer Cambrian Hollybush Sandstone. The double peak feature is believed to result from complex fault movements and mountain building events at the end of the Carboniferous. Such double peaked hills are seen throughout the Malvern Hills range. West and southwards from the summit, low lying ground of Cambrian and Ordovician rocks give way to the periclinal-anticlinal axis ridge of May Hill, Ledbury Hill and the Woolhope Dome (Silurian limestone, siltstone and sandstone). This feature we observed during our Huntley Quarry visit in July. Beyond, in the distance were the Brecon Beacons and Black Mountains (Devonian Sandstone) and the Forest of Dean (Carboniferous Coal Measures). Together these strata represent the younger tilted Palaeozoic rocks that were disturbed as the older Malverns Complex rocks were thrust upwards and tilted. The closer Ordovician and Silurian strata ►

also exhibited a degree of folding, unlike the more distant Carboniferous and Devonian strata. Immediately south we could see the westward off-step of the Blaisdon Fault Malvern-Abberley Axis. Possibly a result of late Carboniferous listric faulting, we also observed this feature during July's Huntley Quarry visit.

Heading south from the Raggedstone Hill summit, we descended a woodland path into the low-lying valley of Whiteleaved Oak - supposedly named after an old oak tree. Leaving behind the Malverns Complex rocks, we passed into the softer and younger Hollybush Sandstone, a basal quartzite often seen at the base of the Cambrian. We also saw the contact between the Malvernian Complex rocks and the Hollybush Sandstone, which has been interpreted as an ancient shoreline where the sandstone was deposited.

Within the Whiteleaved Oak valley and overlying the Hollybush Sandstone were the tilted strata of dark Cambrian White-Leaved Oak Shale and Ordovician Bronsil Shale. Within the White-Leaved Oak Shale, fossil trilobites, corals and brachiopods have been encountered. At the fringe of the field we walked through, were small shallow excavations, believed to be the work of fossil hunting Victorians. The shale within the excavations was a pale brown colour indicating that these rocks had been baked and were close to an intrusive source.

In the 1900s, Theodore Groom undertook work to map numerous volcanic intrusions associated with Raggedstone Hill. Believed to be Ordovician in age, these intrusions intersect earlier Precambrian, Cambrian and Ordovician strata. John had pointed out one such intrusion on the summit of Raggedstone Hill. In the floor of the Whiteleaved Oak valley the intrusions were visible as low ridges approximately 100 yards long. The presence of small pink flowers on these intrusions reflected their different chemical composition from the surrounding rocks. Intrusion of these volcanic rocks would account for the baking of the White-Leaved Oak Shale seen in the shallow excavations.

Leaving the Whiteleaved Oak valley behind, we headed north across fields to the Tewkesbury-Ledbury road and back to the Hollybush car park. After lunch we drove to Gullet Quarry, situated approximately one mile north of Raggedstone Hill. Gullet Quarry was worked for roadstone until 1977 and quarrying activities created a rock face around 60m high with a pool, which is approximately 5m deep. Today the pool is fenced off. Skirting round the pool edge we ascended the northern rock face to look at a number of exposures. Much of the exposed quarry face belongs to the Precambrian Malverns Complex, which includes diorite, microdiorite dykes, pegmatites, granite veins, mica schists and other mineralized veins.



The main feature at the quarry is the West Malvern Junction, which is also apparent at other locations within the Malverns. The Junction marks the boundary between the Precambrian Malverns Complex and the younger Palaeozoic rocks. At Gullet Quarry, the Malverns Complex is in contact with sandstone and siltstone rocks of Cambrian and Silurian age. Fossils, ripple marks and pebbles indicate that these sandstone and siltstone beds formed Cambrian and Silurian beaches with material from the Precambrian Malverns Complex rocks.

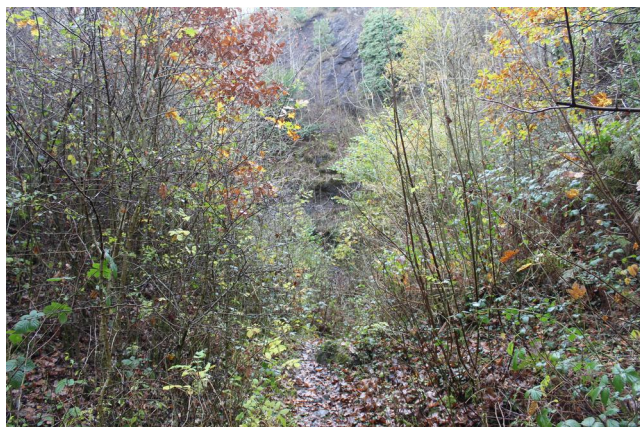
I would like to thank John and members of the OUGS for another very enjoyable trip and hope that we will see them again soon. ■

Andy Harrison

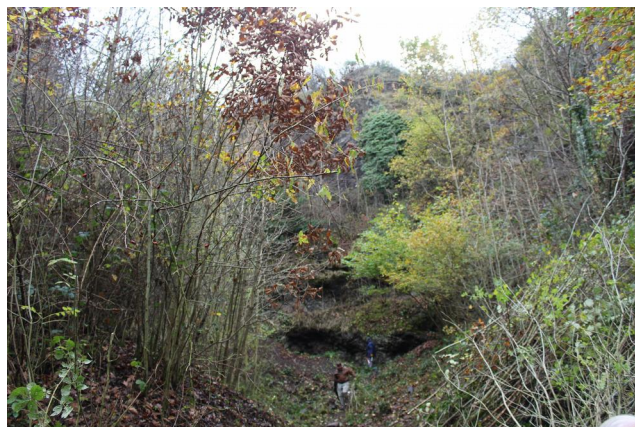
Geoconservation: November 2017 - March 2018

Saturday 4 November & Saturday 27 January: Barrow Hill LNR, Pensnett, Dudley

After several years' absence, BCGS members returned to the disused east quarry site of the 'Dudley Volcano', in November 2017 and January 2018. Our previous clearance session there was in October 2012. Little management in the intervening years had allowed heavy growth of trees, brambles and shrubs, which had all but obliterated the views of the dolerite and Etruria Marl exposures.



Barrow Hill East Quarry before clearance



Barrow Hill East Quarry after clearance

Situated behind Russells Hall Hospital, the Barrow Hill site was declared a Local Nature Reserve (LNR) in 2015, due to its important geology and wildlife. The site also has high recreational value for local people. The dolerite exposures seen within the East Quarry intruded the Etruria Marl country rock towards the end of the Carboniferous period, approximately 315 million years ago. Examples of weakly developed columnar jointing, cooked blocks of country rock, carbonate mineralization and spheroidal weathering can all be seen within these exposures. The site has also been nominated as Geosite 5 within the proposed Black Country Geopark.

Under the instruction of Mark Williams, the site's local authority warden, we spent both days clearing trees and other vegetation from the accesses into the quarry, thereby opening it up. According to Mark, the site has been put into a council stewardship scheme which will hopefully provide funds for contractors to clear and treat larger and harder to reach vegetation. There are also discussions in place to construct low angle ramps and platforms up to the exposures to make observation easier. However, it is uncertain when such works might be undertaken. In the meantime a lot of work is required to maintain this site and keep the vegetation cleared and BCGS members will return in the autumn.

Saturday 2 December 2017: Saltwells LNR, Quarry Bank, Dudley

Our last geoconservation session in 2017 saw BCGS members spending a rather cool, cloudy and damp day helping at the Saltwells LNR. Meeting council warden Tom Weaver at 10.30 in the car park adjacent to the Saltwells Inn, we headed for the tub line cutting that connects Doulton's Clay Pit to the Dudley No.2 canal at Brewin's Cutting. It was via this tub line that the Doulton company transported raw materials from the clay pit to its final destination in the potteries. ►

The rocks exposed in the cutting are uppermost Silurian (Pridoli Epoch) strata, which includes the Downton Castle Sandstone Formation with the Ludlow Bone Bed Member occurring locally at the base. These rocks generally comprise yellow-brown muddy, fine sandstone; siltstone; and olive-green mudstone. They contain shelly fossils and show evidence of cross-bedding. Their nature suggests deposition in a shallow marine environment, but unlike the redder brown strata seen at Brewin's Cutting these rocks were not exposed to air. The Saltwells site is Geosite 4 in the proposed Black Country Geopark.



Saltwells Tub Line

With the aid of volunteers the site wardens have been making a real improvement to the features at Saltwells. Doulton's Clay Pit is coming along as a wildlife attraction and now includes some life-size metal Carboniferous dragonfly statues. They have undertaken a lot of clearance work within the tub line and we spent the day clearing more soil and vegetation from these exposures. The site still has its share of anti-social behaviour, is heavily used by dog walkers and the wardens are hoping to encourage a good relationship with the residents of the new housing estate on Saltwells Lane.

Saturday 10 February: Wren's Nest National Nature Reserve, Dudley

Following the clearance work within Daryl's Hollow in September 2017, BCGS members returned to this part of Wren's Nest for a day of fossil hunting. We met Graham and Ian Beech (Head Warden) at the warden's base at 10.30 and throughout the day weather conditions were cold, cloudy and breezy with some rain. Wren's Nest is Geosite 2 of the proposed Black Country Geopark.



Fossil Collecting at Wren's Nest

Daryl's Hollow is situated just south of where the Council attempted to blow up two of the Seven Sisters pillars in 1961. The reserve wardens and volunteers have been working hard to open up this area and create a view linking the existing Seven Sisters and the Caves pub on Wren's Hill Road. Since September the wardens have removed more big trees to reveal the trench that forms Daryl's Hollow.

Situated on the western edge of Wren's Nest Hill, this north-south orientated trench represents extraction of the Lower Quarried Limestone Member. The clay-rich Coalbrookdale Formation forms the eastern side of the trench and thinly bedded shale and limestone of the Nodular Member forms the western side.

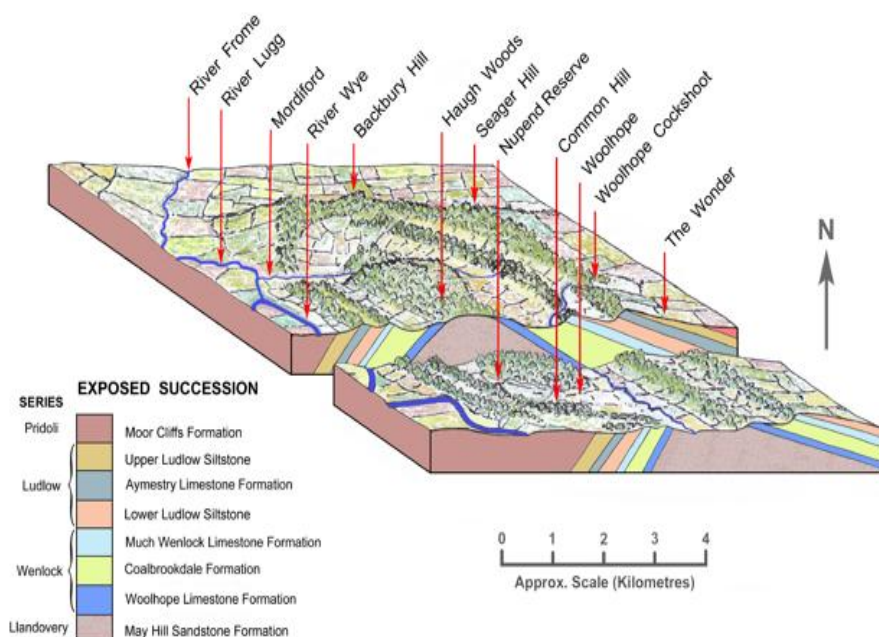
We spent the morning carefully collecting fossils from both sides of the trench and taking them back to the warden's base where they could be cleaned up. The intention is to identify differences in fossil species from both sides of the trench. Initial findings indicated more corals and complete fossils were associated with the western side of the trench, whilst the eastern side appeared to be muddier and contained more detritus. Further fossil hunts at Daryl's Hollow and other areas of Wren's Nest are planned to help gain a better understanding of how fossils change both in terms of time and location. ►

The planned conservation work at Portway Hill, Rowley on Saturday 3 March 2018 had to be cancelled due to the weather. I would like to thank the reserve wardens, Graham and our team of volunteers for their time and look forward to more productive work during next season's geoconservation sessions. ■

Andy Harrison

The Abberley and Malvern Hills Geopark

The Abberley and Malvern Hills Geopark has expanded further into Herefordshire. It now takes in the Woolhope Dome and Shucknall Hill, the impressive section of the River Wye between Hereford and Ross, more of the Frome valley and the northern edge of the Forest of Dean syncline including Penyard Park and Howle Hill. The Silurian stratigraphy is now to be seen across a vast swathe of the Geopark; a concentration worthy of international recognition. A new geology map has been produced, a little more simplified than geologists might appreciate but hopefully just right for the general public.



Woolhope Hills, diagram by Peter Thompson and Gerry Calderbank

This is a Geopark that can be enjoyed by all and provides the opportunity to experience and learn about its impressive landscape and all to be found within it – geology, wildlife, archaeology, art and heritage.

The Geopark is a Forum of 18 organisations and between them they have nearly 20 visitor centres, all with potential to encourage public interest in geology and landscape. These centres have over 2 million visitors each year. The locations of them are shown on a new map to be found on our website www.geopark.org.uk. You can also check our [Facebook](#) page to find out what our members are up to.

The website sets the scene with the following introduction:

The Geopark takes in parts of the five counties of Gloucestershire, Herefordshire, Shropshire, Staffordshire and Worcestershire. You will find outstanding geology that spans 700 million years of Earth's history. This, coupled with dramatic landscapes and a wealth of ecological, historical, and cultural gems, makes the Geopark a unique destination. To promote this, each year the member organisations of the Geopark Forum host GeoFest, a three month summer programme of events and activities. There is something for everyone. ►

The rocks tell a fascinating story of continental collisions, shallow tropical seas, hot deserts, tropical swamps, coastal lagoons, ice sheets and polar deserts. These changes in ancient depositional environments have produced the diverse landscapes that can be seen in the Geopark today.

From imposing Iron Age hill forts to the remains of 20th century coal mining; throughout the Geopark you will find evidence of how human activity has shaped our landscape. The unique landscapes in the Geopark have inspired artists and composers of past and present. Hills and valleys provide the backdrop for past and contemporary cultural events. The Geopark is a place where a range of passions from art to social history may be indulged.

Geology and ecology are inextricably linked. The often intimate relationship between geology and flora is an important factor in understanding the ecology of the Geopark. To enjoy this rich biodiversity, why not visit one of the national and local nature reserves or take a peaceful walk through diverse natural landscapes?

I hope you get time to enjoy it. ■

Peter Oliver

Mike's Musings No. 14 - Disasters are nothing new!

History, as one character in Alan Bennett's play 'The History Boys' puts it, "is just one damned thing after another"! A litany of ghastly acts committed by ghastly people. Why, then, are we surprised that Nature is any different? We are, after all, just a small part of Nature. Whatever Creationists or anyone else might think!

Archaeologists are probably quite attuned to this fact. Every time they dig a trench they seem to unearth the relics of tragedy, of either natural or human action.

As science progresses we understand more and more the power of nature, whether it be climatic, volcanic or tectonic, but what really turned my mind to the grim subject of natural disasters came about while researching the geology of the eastern coast of Scotland for an excursion to 'Aberdeenshire'. One feature kept cropping up time and again, and on digging deeper (pun intended) through the literature, this same event reveals itself all the way from Northern England to the Shetland Isles, and indeed well beyond our own shores from Jutland to Arctic Norway, the Faroes, Iceland and perhaps even the eastern shores of Greenland.



Storegga tsunami deposits (grey upper layer), bracketed by peat (dark brown layers), taken at Maryton on the Montrose Basin, Scotland, Wikimedia Commons

I am referring to little more than a thin bed of sand, locally with larger pebbles and rip-up clasts, interbedded with layers of peat, all of which have been consistently dated to around 7,300 years ago, sometime during the Mesolithic Period. By now, you may have worked out that this refers to the so-called 'Storegga Slide' event, in which a huge volume of unstable sediment, triggered by a seismic tremor, slipped down the continental slope off the coast of Norway generating a significant tsunami that spread across the northern Atlantic. One can only presume that this caused devastation to coastal communities, much as the accursed Aceh tsunami did just 14 years ago in south-east Asia. ►

The big difference, of course, is that the latter event was 'of our time', affected a much larger population and stimulated a media frenzy, filling all the headlines across our much more inter-connected world. The 'Storegga' event is merely recorded in mute sediment, and requires deeper insight and understanding, as well as a lot more imagination, to truly comprehend. But I'm quite sure it was equally devastating to those unfortunates who lay in its path. The magnitude of such a past event is very much lost to our present day perceptions unless, as in the case of, say, Pompeii, we have plenty of corpses upon which to dwell!

Our perceptions are also perhaps very much reduced when the evidence ends up in the prosaic, and faintly absurd, present-day reality of being buried beneath the development of a new supermarket, as is the case with this Mesolithic sand deposit at 13-24 Castle Street, Inverness. The location of such a devastating event in such a trivial modern context seems to pay scant respect to its actual impact. It all happened too long ago to resonate with our sensibilities. Too distant in time to be commemorated in any way.



And this is equally true of many other natural disaster scenes preserved only in the geological record. We tend to have short attention spans, and equally short memories. But occasionally the record is sufficiently vivid to end up elevated to a museum of some sort, where excavations are preserved, left open on public display, where the story is explained in varying degrees of detail. The record of the AD79 eruption of Vesuvius is perhaps the highest profile example (in western Europe, at least). But that particular event was just yesterday in geological terms.

Boat perched atop a house after the 2004 tsunami, Wikimedia Commons

How many other Vesuviuses have never made it into the scientific record, and likewise how many other disasters are forgotten or unknown? History, archaeology and geology have done their best to make us aware of what a dangerous world we inhabit. Perhaps it is for the best not to dwell on these things, lest we never sleep well at night again! ■

Mike Allen

Members' Forum

UK Onshore Geophysical Library - www.ukogl.org.uk

This resource was brought to my notice by Moira Jenkins from the Herefordshire and Worcestershire Earth Heritage Trust and I thought it may be of interest to some BCGS members. Moira had attended the recent launch of the new UKOGL Academic Hub 'Beneath Britain' to be based at Oxford University, and shared her impressions:

"I went to Oxford University to the launch of 'Beneath Britain'. I would like to help publicise the large amount of useful information which has been made freely available by the charity 'UK Onshore Geophysical Library'. This is not well enough known but is being used by universities as well as oil companies. I have used the website in the past and will explore it more in the future. The conference was interesting and I met a variety of people from the oil and coal industry as well as academics. Please do have a look at it (*the website*) yourselves. I feel that the work of UKOGL is something that more people should know about". ■

Julie Schroder and Moira Jenkins