



The Black Country Geological Society

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October 2012

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**Copy date for the next Newsletter is
Saturday 1st December 2012**

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: 01384 370 188, mobile: 0797 333 0706 or email: fieldsecretary@bcgs.info**

Sunday 14th October (Field meeting): Charnwood Forest, led by Mike Allen. Meet at the services off the M1 junction 22/A511 at 10.00. We are going to visit several sites to see the Charnwood succession ending at Bradgate Park where Precambrian fossils may be seen at their best in low light at this time of day/year. Bring a packed lunch. Hi-vis jackets and hard hats **not** needed, but suitable footwear for possibly muddy paths advisable. Expected to end by 5.00.

Monday 15th October (Indoor meeting): 'The Geological Photo Archive of the Geologists' Association'. Speaker: Dr. Jonathan Larwood, senior palaeontologist, Natural England, Peterborough. The Geologists' Association has a long history stretching back to 1858. Throughout much of that history it has recorded its activities through written documents and captured its field excursions in many photographic formats including glass plates. This talk will delve into 100 years of geology and geologists captured on film. Photographs of field trips in and around the Black Country will particularly feature, as will the way in which fieldwork has changed - and the fashions in geologists' clothing across the century.

Saturday 3rd November (Conservation day): Springvale Park, Wolverhampton, vegetation clearance. Meet at 10:30 for 11:00 at Ettingshall Park Farm Lane. Wear old clothes, waterproofs and stout footwear. Please bring gloves and garden tools; loppers, secateurs, forks and spades if you have them. Also bring lunch. Finish at 14:30.

Monday 12th November (Indoor meeting): 'Next Steps for the Development of the Lapworth Museum of Geology'. Speaker: Jonathan Clatworthy, Director of the Lapworth Museum of Geology, Birmingham University. Over the last 5 years various ideas and bids have been put forward to develop and extend the Lapworth Museum of Geology. In June 2012 a large Heritage Lottery Fund (HLF) bid was submitted that has the potential to transform the Lapworth Museum and raise the profile of geology in the region, providing a new focus for public earth science in the nation's second city. This talk will provide an exciting update on the progress so far.

Saturday 1st December (Conservation day): Barr Beacon, vegetation clearance. Meet at 10:30 for 11:00 at the entrance on B4154 Beacon Road, opposite Bridle Lane (the southern entrance to Barr Beacon) Grid ref: SP 060 967. Wear old work clothes, waterproofs and stout footwear. Please bring gloves and garden tools; loppers, secateurs, forks and spades if you have them. Also bring lunch. Finish at 14:30.

There will be no conservation day at the start of January since it is so close to the New Year, but we will start again in February.

Monday 10th December: (Indoor meeting, 7.00 for 7.30 start) BCGS Members' Evening and Christmas Social. This is our annual chance for members to share their geological experiences in a sociable atmosphere with Christmas buffet provided by the Society. Please get in touch with Graham at the museum (meetingsecretary@bcgs.info tel 01384 815575) if you would like to do a short presentation, or show some of your specimens etc.

Monday 21st January 2013 (Indoor meeting): 'The Mineralogy of Scotland'. Speaker: Roy Starkey, President of the Russell Society and founder of the British Micromount Society. Roy writes: Rocks dating back over 3 billion years are found in some parts of Scotland and these rocks (Lewisian gneiss) were at one time many kilometres deep in the Earth's crust. We can ►

recognise five geologically distinct provinces in Scotland - Lewisian gneiss and Torridonian of the NW; Moine rocks of the Central and Northern Highlands west of the Great Glen Fault; Moine and Dalradian of the Central and Grampian Highlands; Midland Valley, and the Southern Uplands. These areas are separated by large faults: the Moine Thrust, the Great Glen Fault, the Highland Boundary Fault and the Southern Upland Fault. Glaciations have shaped the surface rocks, giving rise to varied scenery. The geological variety and differences in the ages of rocks mean that Scotland's mineralogy is diverse and interesting. This talk will highlight some of the key areas of interest and hopefully provide the impetus for members of the audience to go and explore for themselves.

Events at Dudley Museum and Art Gallery

Rock and Fossil identification. Bring your rock and fossil finds along to the Museum and Art Gallery and have them identified by resident experts from **11.00 - 1.00** on Wednesday 31st October, or the same time on Saturday 24th November.

Wednesday 12th December: 100 Years of Geology at Dudley Museum & Art Gallery

Anniversary event celebrating 100 years of geology exhibitions, collections care, conferences and research contributions of Dudley Museum and Art Gallery. The evening will begin with a reception and short presentation, reliving the opening of the original geology gallery by Professor Lapworth in 1912. Then there will be a social gathering and 'conversazione' to enjoy the new exhibitions and geological reminiscences of this special place, its special geology and those who have cared for it during the past 100 years. *Apologies, but I have not yet received full details. Ed.*

Other Local Events

Thursday 18th October: 'New Findings and Developments at the Wren's Nest'. Talk by Graham Worton for the Wombourne and District Scientific and Natural History Society. 7.30pm at Wombourne Library and Community Centre, Church Road, Wombourne, WV5 9EZ. NB: BCGS members will be welcome, but there is a charge of £1.00 for visitors.

Saturday 17th November 10.00-4.00: Wolverhampton Local History Fair, Molyneux Hotel Building, Whitmore Hill, Wolverhampton, WV1 1SF. BCGS will have a display stand at this event. **Volunteers are needed to help!** If you can spare any time on the day to help at this event, please contact the chairman, Gordon Hensman at: chairman@bcgs.info phone: 01384 256 423.

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

Wednesday 10th October, 19:00: 'Carbonate Deposition in the Cayman Islands' Talk by Dr Hilary Corlett, University of Manchester at 7pm. Refreshments from 6pm.

Saturday 10th November, 13:30: 'Some Early North-West Geologists':

'Jonathan Otley, Man of Lakeland'. Dr Tom Smith, Science Historian.

'The Bicentenary of the Manchester Geologist Edward William Binney (1812-1881)'.

Dr John Pollard, University of Manchester.

'John Cunningham & Robert Grant - the forgotten stars of 1838'. Dr Geoff Tresise, Honorary Curator Geology, National Museums Liverpool.

Further information about indoor meetings go to: <http://www.mangeolassoc.org.uk/lectures@mangeolassoc.org.uk> or email lectures@mangeolassoc.org.uk Visitors are always welcome.

Teme Valley Geological Society

Monday 22nd October: 'Geological Evolution of The Lizard Peninsula'. Georgia Jacobs. Contact: Ingrid Darnley, 01905 454417.

Saturday 17th November: All Day AGM (members); display; late morning local geo-walks. bring own lunch; 2.30-4.00 Silurian Morris Men; 7.30-10.00 Jurassic Park multi media talk. Contact David Cropp, 01886 888398

Meetings are generally held in Martley Memorial Hall, Martley. £3 non-members or join on day. For more details visit: <http://www.geo-village.eu/> or contact John Nicklin, 01886 888318, 0774 977 4432

Mid Wales Geology Club

Wednesday 17th October: 'Diamond prospecting'. Chris King, Professor of Earth Science Education, Keele University. Chris once spent five years as a diamond prospector for De Beers.

Indoor meetings are in Newtown, at Plas Dolerw. Meet at 7.15 for 7.30. Further information: Tony Thorp (Ed. newsletter & Hon. Sec): Tel. 01686 624820 and 622517 jathorp@uku.co.uk Web site: <http://midwalesgeology.org.uk> Visitors welcome.

Warwickshire Geological Conservation Group

Wednesday 17th October: AGM and 'Historical Figures in early Geology'. Jim Passmore.

Wednesday 21st November: 'Mineralisation at Alderley Edge, Cheshire'. Dr Geoff Warrington (ex-British Geol. Survey).

All meetings will be held in The Lammas Room, Hill Close Gardens, Warwick CV34 6HF and start at 7.00 for 7.30 – coffee beforehand! For more details visit: <http://www.wgcg.co.uk/> or contact Ian Fenwick swift@ianfenwick.f2s.com or 01926-512531. There is a charge of £2.00 for non-members.

Shropshire Geological Society

Wednesday 10th October: 'Forensic geology and links with archaeology'. Dr Stuart Black.

Wednesday 14th November: 'Aspects of bentonite significance and correlation'. Dr David Ray.

Generally held at Shire Hall, Shrewsbury, commencing at 7.15 for 7.30. A nominal charge is levied for attendance by non-members. Further info at: www.shropshiregeology.org.uk/

Stamford and District Geological Society

Wednesday 10th October: 'Goldilocks Planet: 4 Billion Years of Climate Change'. Mark Williams, University of Leicester.

Wednesday 14th November: 'The British Geological Survey and the Work We Do'. John Ludden, British Geological Survey.

Meetings are held at Tinwell village hall, at 7.30. Visitors are welcome on payment of £3.00 visitor fee. Further information at: www.stamfordgeolsoc.org.uk/

North Staffordshire Group of the Geologists' Association

Thursday 11th October: 'How to find a diamond mine'. Prof. Chris King (Keele) -

Thursday 8th November: Wolverson Cope Memorial Lecture. Prof. John Underhill, Edinburgh.

All talks are held in William Smith Building Room 0.06, Keele University, at 7.30. Further information at: www.esci.keele.ac.uk/nsgga/

Woolhope Naturalists' Field Club - Geology Section

Saturday 13th October: Hampton Bishop Walk led by Moira Jenkins.

Friday 16th November: 'Listening to Oil'. Dr John Donato, Merlin Energy Resources Ltd.

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

Lapworth Lectures

Monday 15th October: 'The Wight Stuff: The diamond in Britain's geological crown'.

Dr Peter Hopson, British Geological Survey.

Monday 29th October: 'The Art of Suspension: Niche Pioneering in the Mesozoic'.

Dr Jeff Liston, National Museums Scotland, Edinburgh.

Monday 12th November: Title to be confirmed. Dr Phil Wilby.

Monday 26th November: 'Goldilocks and the origin of modern ecosystems - the Sirius Passet Lagerstätte and the Cambrian substrate revolution'. Professor Paul Smith. Director, Oxford University Museum of Natural History.

Lectures commence at 5.00 in the Dome Lecture Theatre, Earth Sciences, University of Birmingham and are open to all. For further info phone: 0121 414 7294 or visit web site: <http://www.lapworth.bham.ac.uk/events/lectures.shtml>

Herefordshire and Worcestershire Earth Heritage Trust

Lickey Hills Geo-Champions

Sunday 28th October: Walk led by Lickey Hills Geo-Champions. Follows the Champions trail along the Lickey ridge and then to Barnt Green Road Quarry. Learn about the geology of this folded ridge of Ordovician Lickey Quartzite, and its place in the local landscape. Meet at 11.00 at Lickey Hills Country Park Visitor Centre. Approx. 1.5 miles, ends around 12.30. All welcome.

Geological Societies and other groups are warmly invited to arrange guided visits to the Lickey Hills, tailored to their requirements and led by members of the Geo-Champions group. To contact the Lickey Hills Geo-Champions please email: lickeychampions@gmail.com

For further information about the Champions project and the work of the H&W EHT visit: www.earthheritagetrust.org/ or <http://champions-earthheritagetrust.org/> phone: 01905 855184.

The Dudley Bug

Stop press - World First Exclusive Report in this edition!

Welcome to the October edition of "The Dudley Bug". This summer has seen the return of a special geological figure at Wolverhampton Art Gallery bringing Black Country geology to the masses. Little has been known about this man of science... that is until now! Over the past few months we have tracked down this elusive character to explore his most intimate personal life stories and now we have produced a very special *Dudley Bug* exclusive report never before published revealing the life story of the most important geological figure in the world. "It has been a real challenge to bring this together. I scaled the highest mountains and the deepest gorge to find him, then was nearly eaten by him!" claims Chris. Sadly, during the making of this edition Chris suffered a horrific accident; thankfully after a change of underwear all was well. Enjoy!

Alison and Chris

The Life and Times of Dr Fossil

Over recent weeks a local geologist who has been dubbed Dr 'Bob' Fossil (known scientifically as *Bobbus fossilites*) by the gallery education team, has been let loose in Wolverhampton Art Gallery on Friday afternoons, to lure unsuspecting visitors into the gallery with a host of dead creatures and bones which are interpreted in the doctor's enthusiastic but slightly mad style. This is the story of how the doctor came to be...

Some say he feeds only on eutrophic bacteria, others say his only friend is a dead squid, but all we know is that the doctor is clinically insane! Legend has it that he came to Earth on a meteorite which impacted Earth 150 million years ago. Luckily for us he survived by jumping off the meteorite just before it hit the ground. Life was hard for the doctor as a baby, brought up by a herd of *Diplodocus* dinosaurs he ate nothing but regurgitated leaves. Geologists are generally considered to be carnivores so when the *Diplodocus* became extinct he was adopted by *Velociraptors* where he fitted into the family pack perfectly. Dr Fossil soon found out that being brought up on a diet of raw dinosaur meat had its drawbacks; for example, a geologist's compulsory beard was very awkward when he had his head deep inside a smelly, rotting carcass. Although his rock hammer came in very useful when hunting, it was so powerful that he could bring down a *Tyrannosaurus Rex* with a single blow; it was this that inspired the myth of Thor, God of Thunder and his mystical hammer, Mjölir. Little did the Vikings know that they were worshipping Wolverhampton's very own Dr Fossil.



Image by Salvatore Rabito Alcón, Wikicommons

By 65 million years ago Dr Fossil had made his way out into the big wide world, which was about to change forever! One fateful day an enormous asteroid impacted the Earth, sending the doctor into immediate peril but fortunately he was wearing his hard hat that day, which thankfully had protected him from the initial blast. The doctor was slightly bemused as to what had interrupted his volcano poking activities, but he scurried back to his cave anyway to watch the latest news reports on the home-made coal powered proto-television. He was warned about the impending firestorms and tidal waves. ►

Therefore the doctor was sadly forced to change his plans and stay at home to catalogue his fossil collection. Even the risk of dangerous radiation did not deter the doctor: well of course, why should it? Geologists are well used to radiation, especially when they lick Uranium just to see if their tongues glow in the dark.

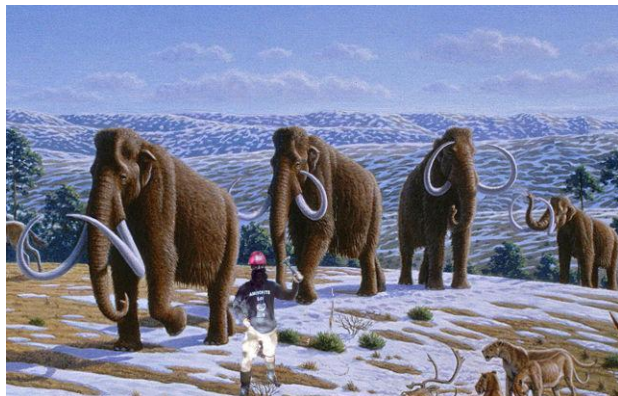


Image by Mauricio Antón, Wikicommons.

During Dr Fossil's teenage years, life in the Eocene, Oligocene and Miocene was easy. Global temperatures were warm and sea levels rose, meaning the doctor's cave was now by the beach where he could sit and pass the time by counting the grains of sand. This is the period when the doctor evolved from a dino-man to a primitive mammal, just as he is today. This evolutionary phase saw Dr Fossil lose his tail and webbed feet and he started laying tiny rocks rather like chickens lay eggs.

During the ice age the doctor roamed the wilderness on the back of a mammoth he called 'Fluffy' who he still keeps as his pet today. He showed early humans how to make fire, which he witnessed during the asteroid impact, the wonders of cave art and even how to make a wheel. He showed Bronze Age men where to mine for minerals, which he had witnessed being deposited millions of years earlier and explained how farming crops was far more appealing than eating regurgitated leaves or getting messy eating raw meat.

One drunken night in the 1600's Dr Fossil accidentally gave away all his coal and iron production secrets to a man he met in a pub called Dud Dudley, which eventually sparked a world changing revolution. It was in the 1800's that the doctor met a Shropshire man called Charles. They became good friends and Dr Fossil showed him his family photo album of his life growing up through history. A few years later his friend Charles Darwin published a book containing the theory of evolution.

This influential figure in history is little known, and few people know how Dr Fossil gave rise to the greatest civilization in history and created the world as we know it today. But now that story has been told, and the world will finally know the truth about the genius of Dr Bob Fossil. Over the years exposure to toxic minerals and radiation has made this man a complete fruit cake. Today the doctor resides deep in the geology stores of Wolverhampton Art Gallery, where he catalogues the geology collection and is occasionally let out to terrorize the public with displays of death through geological history, before being returned back to the stores for feeding time. Until next time... be aware of the geologists... they are among us! ■



www.geologymatters.org.uk

www.bcgs.info

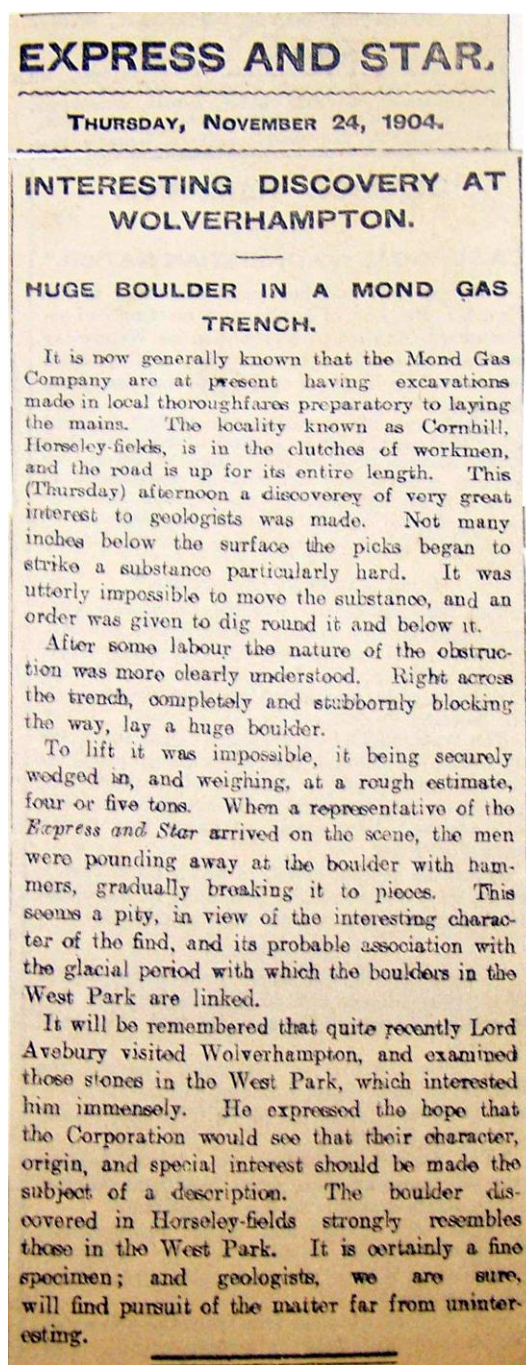


Geology
Matters



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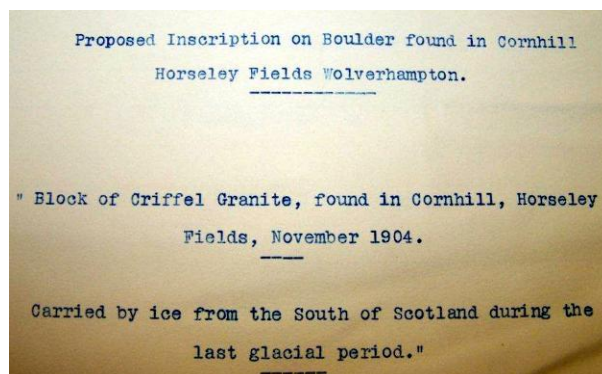
Discovery of the East Park Erratic Boulder



Following on from recent articles in our Newsletter regarding the Erratic Boulders in The West Park Wolverhampton. Details of the discovery of The East Park Erratic on Thursday 24th November 1904 which were reported in contemporary local newspapers at the time, have now come to light. The Express & Star in particular published a detailed account of the discovery and with memories of Lord Avebury's visit to The West Park on 5th November 1904 declared that "It is certainly a fine specimen and geologists, we are sure, will find pursuit of the matter far from uninteresting."

The Midland Evening News was a little more circumspect reporting the discovery some 24 hours later with a short article looking very much as if the information had been "cloned" from the Express & Star.

The discovery must have been considered as of scientific importance by Wolverhampton Corporation as is indicated by the fact that a plaque of similar nature to the ones to be provided for The West Park erratics was immediately included in the plans submitted to Lord Avebury for his approval (see article in Newsletter 212 April 2012, p.6). Since the original plaque is now also missing from this boulder then the opportunity exists to seek its reinstatement thanks to the copies of this correspondence which still exist in the archives at Molineux House.



Today the East Park erratic maintains a dignified presence surrounded by rose bushes, however the exact date of erection including the plaque, along with the discovery of other glacial boulders in the Chillington Fields area adjacent to the park are still under investigation and it is hoped to report these findings, as well as progress towards replacing the missing plaque, in future editions of the newsletter. ■

Mike Williams

Field Meeting Report

Sunday 22nd July: Geology of the Clent Hills. Led by Andrew Harrison (BCGS and Geol. Soc.)

In contrast to the deluge at the Lickey Hills in April which resulted in the Clent Hills field visit being postponed, the day couldn't have been more different. Meeting at 11:00am at Nimmings Wood car park we were blessed with blue skies and brilliant sunshine. The visit generally followed the trail outlined in the Herefordshire & Worcestershire Earth Heritage Trust's 'Explore' leaflet: 'Building Stones & Geology Trail - Clent Hills'. This includes the Topograph, the Four Summit Stones, the Toposcope, St. Leonard's Church and the Road Cutting at Holy Cross. Additionally we visited St Kenelm's Church, which is not included in the leaflet. Once again we were joined by members of the Warwickshire Geological Conservation Group (WGCG).

Locality 1 - the Topograph and Locality 3 - the Toposcope provide excellent panoramas of the geology surrounding Clent Hill. On clear days the far horizon reveals a varied geological landscape including Bredon Hill and the Cotswolds (Jurassic limestone) to the south; the Malvern Hills (Precambrian, Silurian limestone and granites) to the southwest; Abberley Hill (Silurian limestone) and the Clee Hills (Devonian/Carboniferous sandstone and gritstone) to the west; Wenlock Edge (Silurian limestone) and the Wrekin (Precambrian volcanic deposits) to the north-west. The foreground landscape comprises Triassic sandstone sequences (Bromsgrove Sandstone, Wildmoor Sandstone & Kidderminster Formation) to the west, faulted up against South Staffordshire Coalfield (Enville Beds and Keele Beds) of Upper Carboniferous/Permian age. Clent Hill itself and Wychbury Hill, to the north, both comprise Clent Breccia, which is a part of the Enville Beds.

The Enville Beds comprise sandstone and calcareous conglomerate sequences belonging to several groups throughout the Midlands, including the Bowhills, Tile Hill and Breccia Groups. Rivers draining and eroding the Mercian Highlands during the period of continental uplift that followed the Variscan Orogeny are believed to have deposited the Enville Beds under arid conditions within an irregular series of interconnected basins. The Clent Breccia, unlike the other Groups, contains large, angular clasts of Precambrian Uriconian Volcanics as opposed to Silurian and Carboniferous limestone. These clasts make the Clent Breccia extremely resistant to erosion, hence the Clent and Wychbury Hills stand out as escarpments above the surrounding landscape. The size and shape of clasts within the Clent Breccia indicate that it was deposited close to its source, possibly as extensive fans of scree deposited during flash floods.



Locality 2 - the four standing stones at the summit of Clent Hill, are believed to have been erected by Lord Lyttleton of Hagley Hall around 1770, supposedly to annoy the Earl of Dudley who boasted that he could see no man-made structure from his Himley Hall Estate. The stones are believed to have come from a flooded quarry in the grounds of Hagley Park. Two of the stones are conglomerates containing white quartz pebbles, and the other two are sandstone. Both sets of stones belong to the Kidderminster

Formation that were deposited approximately 250 Ma in the channels of a major river system, the 'Budleighensis River', which flowed north from Devon through the Midlands. The variations in the composition of this formation reflect the changes in energy and sediment supply to the river channels.

Locality 4 - St Leonard's Church in Clent Village was built around the 15th Century and is constructed from the Bromsgrove Sandstone Formation. This is Triassic in age, also deposited in river channels, but is younger than the Kidderminster Formation. Over the years the sandstone blocks have suffered from weathering and have been replaced with stronger materials like the red Corsehill Sandstone from Annan, Dumfriesshire and a grey gritstone. The sandstone blocks also show evidence of tool marks and cross bedding. In the EHT leaflet there is a small trail around the churchyard to look at various headstones of pink and grey granite, other igneous rocks and sandstone. ►

Locality 5 - the Holy Cross Road Cutting. This is the final location on the trail and comprises exposures of Bromsgrove Sandstone Formation. These show good examples of cross bedding and channel cross sections. Finely laminated mudstone horizons can also be seen that represent lower energy conditions within the river channel depositional sequence.

St Kenelm's Church is a bit of an enigma. Although dating back to Saxon times, it is constructed of a variety of coloured sandstones, no doubt including the Bromsgrove Sandstone Formation, which show evidence of severe weathering, cross-bedding and Liesegang rings. Like St Leonard's Church, the churchyard also contains many sandstone and granite headstones.



St Leonard's Church

The church gets its name from St Kenelm, the son of a Saxon (Mercian) King who lived between 786 and 811 AD. Legend has it that he came to the throne aged seven and was murdered and beheaded on a hunting trip, by his foster father Askebert.



The Spring Well at St Kenelm's Church

A spring in the grounds of the church is supposed to mark the spot where Kenelm was murdered. Today it is better known as the source of the River Stour, which flows north-eastwards before dog-legging back on itself to flow west through Stourbridge then south until it meets the River Severn at Stourport. The spring appears to reach day-light at a clay/sandstone boundary within the Keele Beds.

I would like to thank members of the WGCG for attending this field trip and hope to see them again soon. ■

Andy Harrison

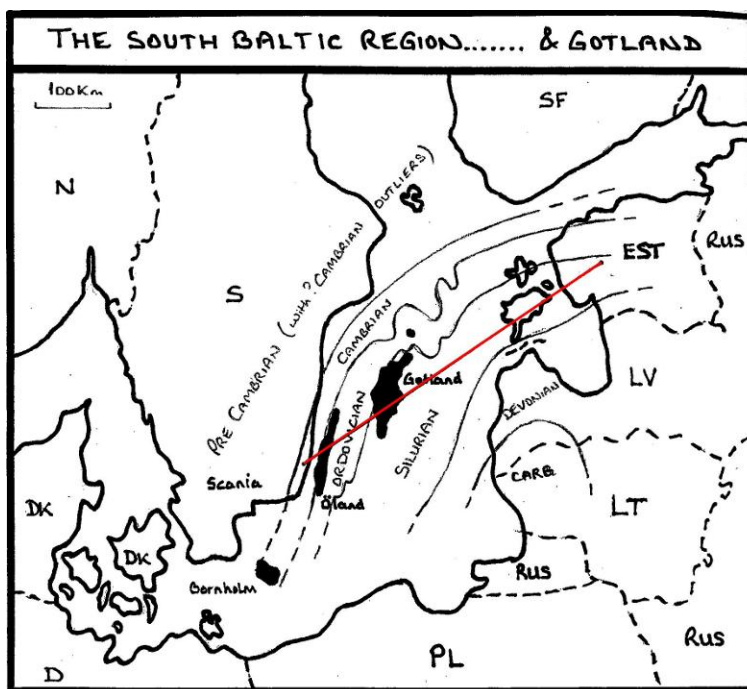
Wenlock-by-the-Sea or 'A Trip to Gotland'

O.K., I know someone out there will cleverly be pointing out that there's more to Gotland than just the Wenlockian. There's the Ludlovian and even a little bit of the Llandoveryan as well, but what kind of a title would 'Ludlow, Wenlock and, oh!, a little Llandovery as well-by-the-sea' make? Never mind, one thing that is perhaps better known is that if it hadn't been for a certain Mr. Murchison and an ancient tribe of Britons, we might well be far more familiar with a geological period called the Gotlandian. Don't ask me what we would have in place of the Ordovician, or even the Cambrian! Perhaps the Ölandian and Bornholmian respectively. Anyway, what all this waffle is leading up to is to try and increase the tourist figures for some of the Baltic islands that may not be on everybody's 'must do' list. Notwithstanding Scandinavian prices, which aren't actually as fearsome as you might imagine (except for alcohol), southern Sweden (Scania) and its offshore islands are a paradise for the casual geo-tourist. The ambience is one of relaxation. Nearly everyone speaks English (often better than the English!) and the general presence of wellbeing, not to mention 'rock' or 'fossil', is all around.

My main destination was Gotland, particularly since I seem to have seen a lot of the Welsh Borders of late, especially Wenlock Edge. It also isn't so long ago that I spent a couple of weeks up in Assynt - you'll see the relevance of that in a minute. But, since I was taking the car, I found myself having to cover quite a bit of ground beforehand due to a general lack of any ferry services across the North Sea. (If anyone has any influence in this area, could they lean on the necessary people to rectify this woeful state of affairs?) After crossing by the customary Blue Riband route to Calais, and traipsing ►

(does one traipse by car?) through the Low Countries and across the North German Plain, I finally got sight of Scandinavia in the form of Denmark, the island of Lolland to be precise, from across the Fehmarnbelt at a ferry terminal called Puttgarden. (By the way, it's a mistake to enter Holland on Pinkstermaandag. Holland is shut on Pinkstermaandag! You can't get a beer at any price in Holland on Pinkstermaandag!! But, to be fair, the Afsluitdijk across the mouth of the IJsselmeer is worth seeing, even on... yes, you're ahead of me... even on Pinkstermaandag.)

I didn't hang around in Denmark on this occasion, (I'd 'done' Denmark last year... Møns Klint, Stevns Klint, the K-T layer etc; and very good it was too), so on it was across the magnificent Øresund tunnel/bridge combo to investigate the area which has recently become popular on our TV screens through the (mis)adventures, of one Kurt Wallander. Yes, the first rocks I picked up were along the breezy beaches around Ystad (and not a dismembered torso in sight, I'm glad to say). I won't dwell for too long on what you do find on Scania beaches, but: I've never seen so much 'pipe-rock' (Skolithos burrows for the technical minded) even during that fortnight in Assynt. There was also much of archaeological interest: standing stones, burial sites, rock engravings/paintings and the like.

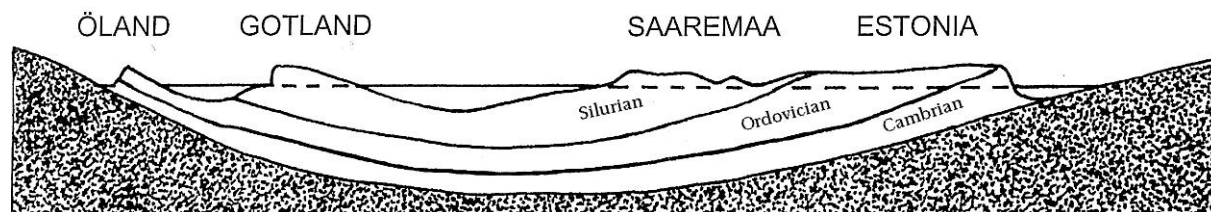


Proceeding round the coast, with a number of diversions inland to take in an Alum Shale quarry (with trilobites... hmmm), a volcanic pipe with columnar jointing, a 'fossil Cretaceous shoreline' and a rather disappointing meteor-impact crater lake, I came across another one of those bridges the Scandinavians are so good at. This one, over 6 kilometres long across the Kalmarström, links Öland to the mainland is free... so I thought, why not? Öland turned out to be a minor revelation. Almost the whole island (long and narrow) lies within the outcrop of the Arenigian (lower Ordovician) 'orthoceratite limestone'. Find an exposure and you'll find an armful of (mostly orthoconic) nautiloids. And the odd trilobite. A bit limited variety-wise, but what it does it does well! I'm still trying to track down some detail on the geology. The island has World Heritage status on the basis of the remarkable landscape known as the 'alvar', the development of which owes much to the cultural agrarian history of the island. The particular feature that underpins its character is a very thin soil profile over limestone with an unreliable, highly fluctuating water supply. Maintaining any kind of pastoral existence under such circumstances has always been a challenge for humankind. This also gives rise to an interesting distribution of plant life, much studied by botanists.

And so, at last on to the main destination. Looking out to sea from the northern shores of Öland I had been puzzled by the invisibility of Gotland to the east. As the ferry from Oskarshamn drew nearer, the reason finally dawned on me. The highest point of Gotland doesn't even reach 100m. and some of the cliffs are almost half that height. This, clearly, was going to be a doddle from the physical point of view! Geologically, Gotland is even more limited in the time dimension than Öland, consisting entirely of Silurian rocks ranging from very late Llandoveryan to late Ludlovian (if you exclude the tiny islet of Gotska Sandön to the north). These have been subdivided into a dozen formations that bear little relationship to the familiar British stratigraphy, but lithologically and palaeontologically the resemblances are far more striking. Superficially, at least, one might be in any of the many Welsh Border quarries from May Hill to Much Wenlock. Younger Silurian rocks continue beneath the Baltic to the south-east.

It might help at this stage to explain the general geology of this part of the Baltic region (see map and section). In the broadest terms we are looking at a Palaeozoic shelf sequence on the southern edge of the Fennoscandian Pre-Cambrian shield. This begins with scattered outliers of Cambrian resting ►

on the basement margin on the Swedish mainland, and offshore islets to the north. A simple younging towards the European mainland to the south-east introduces progressively younger beds until we reach Devonian and Carboniferous rocks in the 'Baltic States', followed by Murchison's 'Russian Platform' composed of his other contribution to the stratigraphic column, the Permian. (The man got everywhere!) The craftily chosen line of section (SE to NW) reveals a shallow synclinal pattern due to the curving nature of the outcrops. The slightly more resistant hard limestones show up as Öland (Ordovician) and Gotland (Silurian) 'escarpments', with counterparts amongst the offshore islands of Estonia on the other side of the Baltic.

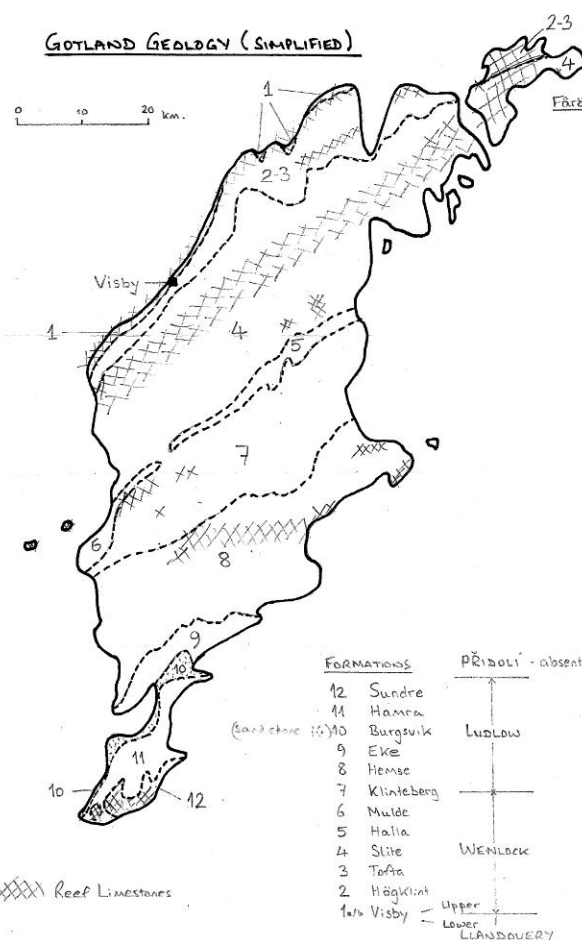


*Cross section of the Baltic Sea Basin from Kalmarsund to Finska viken.
The Cambro-Silurian sediments also emerge on the other side of the Baltic Sea.*

The whole of this 'sedimentary basin' very much repeats the section through Wales and the Welsh Borders. Or even more parochially try to imagine a walk from Caer Caradoc (take 'Murchison's viewpoint' as a starter) to the Clee Hills. This explains the very simple structure we find on Gotland with the dozen formations lining up neatly from the oldest along the north-west coast to the youngest in the south (see map), the dip seldom exceeding about 2 to 3 degrees. Their total thickness of some 500 metres consists of an alternation of marlstones, bedded and reef limestones, limey siltstones and lesser sandstones. As there is such a proportionately long coastline, exposure is generally good, especially on western cliffs. Beaches are piled high with eroded detritus, mostly of local origin, and fossils are available in abundance. Inland there are quarries, lines of reef limestone crags and many high and dry sea stacks known as 'raukar'. A bare limestone 'alvar' landscape occurs in some areas.

One of the earliest geologically minded visitors was Linnaeus who toured the region in 1741. An astute observer and interpreter of landscape, he was perhaps the first to correctly recognise the 'raukar' as former coastal cliffs now elevated by changes in sea level (due to isostatic uplift since the end of the glacial epoch). Just over a century later (1845), Murchison himself passed this way. He correctly noted the similarity between the stromatoporoid mounds, which are such a strong feature of the Gotland limestones, and the 'ballstones' he had seen in the Welsh Border Wenlockian limestones. His evaluation of the local stratigraphy, only poorly understood by the various Swedish palaeontologists of the time, has been broadly confirmed by subsequent work, particularly that of Hede who was the first to systematically map the island to 'survey standards' between the two world wars.

Topography and stratigraphy don't quite match up as it is rock type (rather than age) that dictates the lie of the land. In particular, it is the reef limestones that form nearly all of the highest ground (with giddy heights of around 80m!). Since reefs are present at several horizons (and at times seem to be diachronous), these tracts of higher ground run across the island in several lines and show up mainly in the lower Hogklint, middle Slite, lower Klinteberg, Hemse and Sundre formations. One interesting aspect of the



Hogklint reefs is that they show up clearly as circular structures in plan view on the wave-cut platform along parts of the north-west coast. These 'Philip structures', as they are known, mark the sites where massive reefs have sagged down into the underlying Visby beds. They have enabled the spatial distribution of such reef mounds to be mapped offshore even more effectively than on less well exposed inland areas.

The contrasting needs of the stone and cement industries are both catered for largely by the Slite Beds which include both thick-bedded, poorly fossiliferous limestone and marl rich limestones, in addition to the reef facies limestone. The quarry at Slite itself is one of the largest cement plants in Europe producing 2.3 million tonnes a year (75% of Sweden's total output).

The fairly consistent alignment of the present day outcrops along NE-SW lines reflects the equally persistent trend of the Silurian shoreline, borne out by sedimentary structures such as ripple-mark orientations throughout the succession. This shoreline also migrated south-eastwards, since the trend of the reef mounds is maintained on a roughly NE-SW alignment with intertidal indicators such as oolitic limestones occurring consistently on the north-west shallowing shoreline side.

Two sandy/sandstone horizons interrupt an otherwise exclusively calcareous succession. The first of these affected the upper few metres of the Slite Beds on the western side of the island. The second affected the whole of the Burgsvik Beds which consist of a varied mix of limey, muddy, shaly, as well as massive sandstones. Load casts and water-escape structures, oolitic limestone beds, cross-bedding and ripple marks all indicate mainly shallow water conditions. It has been suggested that these bursts of clastic input into an otherwise carbonate-shelf environment marked the culmination of Caledonian uplift and the beginnings of erosion of this new mountain belt. Spores from terrestrial plants have been found in these sandstones, placing them amongst the oldest land plants yet discovered.

One final landform of interest brings us back to the glacial epoch. Inland tracts of beach ridges left high and dry through the same isostatic uplift that produced the 'raukar' present an odd spectacle, but are not uncommon throughout the deglaciated shorelines of the northern hemisphere.

This all too brief account of the delights of Gotland hasn't dwelt on its familiar fossil wealth but it is probably the simple pleasure of such easy pickings that will live longest in the memory of a far richer experience all round. If you prefer a bit of history and culture, the capital town of Visby is well worth a visit. It retains an almost complete early Medieval wall, has plenty of cobbled streets, and is the best preserved of all the former towns of the Hanseatic League. ■

Mike Allen

Diagrams taken and adapted from 'Sunstones and catskulls: guide to the fossils and geology of Gotland' by Sara Eliason.

Volcano Adventure in Weather-beaten Italy

Part 2: Sicily

Following our volcanic exploration of the Bay of Naples (see Part 1 in Newsletter 214 p.10), our next destination was Sicily. As we approached the resort of Giardini Naxos, our Sicilian base, we knew that Etna was towering above us to the south west. But it was shrouded in cloud, and apparently experiencing blizzard conditions around the summit - could this really be our intended destination for the next day? In the evening we were introduced to Derek Rust, who had joined our group as Paul Olver's assistant for the next few days. He is a senior lecturer at Portsmouth University, and an expert in the volcanic geology of Mount Etna and the surrounding area. In the rain the next morning we weren't surprised to learn that we were on 'Plan B', re-scheduling another day's itinerary to some sites further south, on the coast below Mount Etna.

A Norman keep precariously perched on a small promontory immediately catches the eye at the little town of Acicastello. But it was the geological gems below the keep which were the focus of our attention. In the north face of the promontory ►



cliffs, and in the wave-cut platform below there are some spectacular pillow lavas, often showing columnar jointing inside and a glassy outer crust. These represent the earliest phase of Etna's activity from around 500,000 years ago. Rapidly cooled and highly brecciated hyaloclastites dominate the cliffs at the end of the promontory, and on the south face these join the pillow lavas in a nearly vertical junction which seems to suggest that a large block of hyaloclastite-capped pillow lavas broke away and overturned. Derek engaged us in some lively discussion about this controversial theory, but it seemed very plausible to me. There were some beautiful examples of radial columnar jointing in the basalt pillows high up in the cliffs. In the low cliffs to the south, a magnificently obvious fault in a recent lava flow reminded us that this dynamic landscape is ever-changing.

In Acitrezza a little further north, further examples of columnar jointed lava were visible in the cliffs of the small Ciclopi islands just off-shore. These lavas belong to a series of sills which were intruded into the local clays in the early stages of Etna's history. At the contact, the clays were baked hard into hornfels and this hardened, metamorphosed rock has survived erosion in places. It can be seen clearly capping the lavas on the islands. As we travelled northwards we saw the extent of the Chiancone formation. This is a vast delta made up of debris from repeated explosions and caldera collapses in the Valle del Bove high on the flanks of Etna above. Here we stopped at an inland cliff which marks the line of the Timpe fault system. This is a strike/slip fault extending towards Malta and Africa, with a downthrow to the east of approximately 3 km. Around here it meets the Messina strike/slip fault at an obtuse angle, but this is carrying the ocean floor in the opposite direction. These major structural tensions are probably responsible for the crustal weakness here, and the repeated collapses in the Valle del Bove.

Travelling northwards beyond Etna's lava fields, our final destination was the ancient Greco-Roman theatre of Taormina, perched precariously high up on a ledge of Triassic dolomitic limestone. From this gloriously romantic setting the views were stunning, in spite of Etna's summit remaining frustratingly shrouded in cloud. The following day, clear skies on the long coach journey to Agrigento afforded some wonderful views of Etna - from the awesome gash of the Valle del Bove on the east flank, to our first full view of the majestic snow-capped cone rising to 3,350m above sea level. A steady plume of smoke rising from the sparkling summit warned that this is no sleeping beauty.



Mount Etna, from the south

The Greek temples at Agrigento are built out of the local Mesozoic calcareous sandstone and stand resplendent on a prominent ridge. The warm, honey-gold colour of this soft, crumbly rock compensates aesthetically for its inadequacies as a building stone. Although several of the temples are surprisingly well preserved, at close quarters it is evident that the relentless forces of erosion have played havoc with the structure. But this soft sandstone was ideal for carving numerous catacombs into the bedrock along the route of the 'Sacred Way' which links the temples. Fossils can be found in the bedrock, with some notable examples of large bivalves similar to modern oysters and scallops.



The Temple of Juno, Agrigento

Etna glowed invitingly in the evening sunlight as we made the long journey back to our hotel, and the skies were encouragingly clear the next morning as we drove up the tortuous road to Rifugio Sapienza at 1900m on the south flank of Etna. This is a centre for exploration of the summit region, and the station for the cable car which we hoped was going to take us up to see some high vents at around 2500m. We stopped to inspect a recent 'aa' lava flow en route, and learned that Etna's lavas are mainly basaltic, originating from the upper mantle. These basic (mafic) lavas tend to flow faster nearer their source, forming 'rope' or 'pahoehoe' lavas. Further away from the source they become more viscous, solidifying into the sharp jagged landscape characteristic of 'aa' lava. ►



Cinder cone at Sapienza

At Sapienza we were greeted with gale force winds and unusually deep snow for the time of year, two reasons for the cancellation of 'plan A'. It was too windy for the cable car, and there was too much snow up there anyway. On the rim of a nearby cinder cone one of our party lost her hard hat irretrievably in a gust of wind, and this provoked a hasty retreat to the relative safety of the crater bottom. Here we had first hand experience of distinguishing between 'accessory' products, represented by numerous broken fragments of the vent walls, and 'essential' products solidified from the magma itself. We also learned that some notable red and yellow patches around the side of the cone were the remains of defunct fumaroles.

Continuing on a high road around the east flank of the volcano, there were some magnificent examples of pahoehoe lava with massive lava tunnels, and at Zafferana we saw how the village was saved from almost certain destruction during an eruption in 1992, by the erection of massive earth barriers to divert the lava flow. At a point between the villages of Milo and Linguaglossa the extensive strike/slip Pernicana fault system is conveniently manifested in the road. Here, Derek brought our day's excursion to an end with a graphic and illuminating demonstration of the mechanics involved in this fault. Showing his true colours as a geologist, he threw caution to the wind by crumpling and stretching his fleece on the ground in the middle of the road to show that the small parallel cracks running across the road did not actually represent the main line of the fault. Fortunately, none of us got run over, and it's a salutary thought that the frisson of a lesson learned in such bizarre circumstances does wonders for the memory!



Etna's summit had eluded us, but we'd learned much of its tumultuous history through first hand experience, and had seen many of its different faces. Now the volcanic wonders of the Aeolian Islands beckoned as we made our way by hydrofoil to the island of Lipari, the final base for our volcano adventure... ■

(The Aeolian Island chapter will appear in the December issue.)

Julie Schroder

Memories of the Dudley Earthquake, 22nd/23rd September 2002

I had not been a member of the Black Country Geological Society for long and was enjoying my first Dudley Rock and Fossil fair on the weekend of the 21st/22nd September 2002. However, what happened as Sunday night passed into Monday morning made the weekend most memorable.

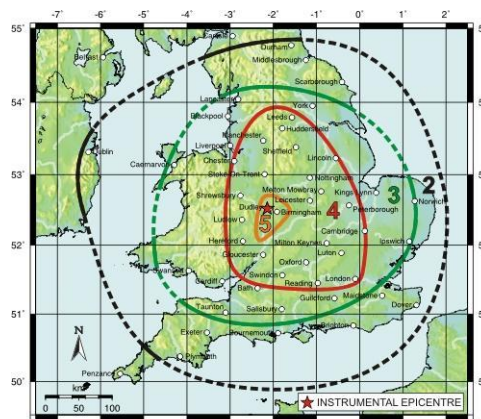
During the night I sensed a deep rumbling noise and was jolted awake to the sound of falling plaster behind the cavity wall of the flat I was renting at the time in Tettenhall, Wolverhampton. At first I thought the next door boiler had blown up, but I soon realised that in actual fact I had probably just witnessed my third 'earthquake'. Next morning the radio confirmed my suspicions that indeed an earthquake had struck the Black Country.

Occurring at 23:53 Universal Time Coordinated (UTC), on Sunday 22nd September 2002 (or 00:53 local time, Monday 23rd September 2002) the earthquake measured 4.7 magnitude. A small 2.7 magnitude aftershock was also felt locally throughout Dudley and in Birmingham on 23rd September at 03:32 UTC (04:32 local time).

During the earthquake seismograph stations belonging to the British Geological Survey (BGS) and scattered throughout the UK gathered data. This showed that the epicentre was at mid-crustal depth (approximately 14km down) and at approximately 1km west of the Western Boundary Fault. On the ground surface this placed the epicentre approximately 3km northwest of Dudley town centre, at the junction of High Arcal and Himley Road. ►

The Western Boundary Fault is a major north–south striking fault zone, which has downthrown Triassic rocks to the west, against older Upper Carboniferous rocks to the east. These belong to the South Staffordshire Coalfield. The fault zone stretches from the Bristol Channel to Lancashire passing to the west of Dudley and to the east of Stourbridge.

The BGS data indicated that the earthquake was due to strike-slip movements along the Western Boundary Fault zone. These movements were probably a response to regional stresses built up through dominant north-west compressional forces from the spreading of the Mid-Atlantic Ridge. Earthquakes of such magnitude are not uncommon in the UK, which experiences around 300 earthquakes a year, with one around 5.0 magnitude occurring approximately every ten years.



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Before the Dudley earthquake I had experienced two others, which included the Llyn Peninsula earthquake of 1984 and the Bishops Castle earthquake of 1990, which measured 5.4 and 5.1 magnitude, respectively.

The next day and over the following weeks the Dudley earthquake was on the lips of most people and the brunt of several humorous e-mails. Many BGS accounts collected after the event spoke of objects, such as CDs, books, plant pots, candlesticks, picture frames, mirrors and clocks, being thrown about. Other accounts spoke of violently shaking furniture and children and parents being thrown out of bed or off chairs. There were no recorded major injuries and only three minor ones involving banged heads and a broken toe. Minor structural damage was also reported to buildings including cracks in walls, plasterwork, mortar and window sills and dislodged roof tiles.

The event was felt mostly across the West Midlands, but also over an area of 260,000 square kilometres (100,387 square miles), reaching as far as Wales and Southern Ireland, Liverpool, Carlisle, Durham, Yorkshire, Wiltshire, Cornwall, London and The Netherlands.

Over the past ten years there have been several Rock and Fossil fairs in Dudley, but no more events like that of September 2002. So what do people remember about it? Readers of the BCGS Newsletter were asked to send in their memories of that night. Many of these were similar to the accounts the BGS recorded back in 2002.

Like many at the time, BCGS member Chris Broughton recalled how he slept right through it, “and never felt a thing”. Messages left on the Dudley Museum website, *Geology Matters*, included an account from Paul Goodrich who lives in Manchester: “I thought I had left the handbrake off my car and it had rolled gently down to the house, but rather than the first single jolt, there was also a brief low rumble and the doors rattled”. Christine Hawthorne, from Perton was sitting in her lounge at the time, “...when the chair moved!” then, “My friend rang to ask if I felt it too! Could not believe it”.

BCGS assistant Newsletter Editor, John Schroder, working in Kyoto at the time had wondered if he would experience an earthquake while away touring in Japan. Disappointedly he recalled how, “The earth didn't move for me in Japan”, but he was surprised, on phoning his wife Julie in Birmingham, “to be told that I had missed one in Dudley!”

John Radley, Curator of Natural Sciences at the Warwickshire Museum Service, remembered how the Dudley earthquake occurred exactly two years after one in Warwick. That night, up late watching the television John heard a noise: “Something like a train, moving rapidly closer (sounded like it was travelling up the garden towards the house) culminating in a rumbling and mild shaking”. Having experienced the Warwick earthquake he knew exactly what it was and was soon texting friends and listening to reports on local radio. ►

Dr Colin Prosser, Principal Specialist in Geodiversity at Natural England, was staying with his mother in Dudley at the time before travelling to a meeting in Bournemouth the next morning. He remembers vividly: "...the rumbling of the quake as it woke me, like a tube train approaching, and my mother and others in the street popping outdoors in dressing gowns to reassure each other". The next day at his meeting, pleased at the chance of feeling the event, Colin was introduced as "English Nature's geologist", who had been "shaken out of bed in Dudley by an earthquake".

BCGS Chairman Gordon Hensman was having a nightcap in his sitting room when the earthquake struck and remembered how: "The drinks trolley and the china cabinet both shook and clinked as glasses and precious ceramics hit each other. Constable's 'Hay Wain' swung to and fro, and Millais' 'Last of England' moved an inch from the wall and back again, while the shade on the standard lamp joined in the general animation. What on earth was happening? That nightcap in my hand was certainly powerful stuff, and I had to down it in one to prevent it spilling as the armchair lurched from left to right and back again".

After two coal blackened miners walked through his sitting room wall, speaking deepest Black Country, Gordon checked his empty glass as it slowly dawned on him that, "there had been an earthquake - no other explanation!" A few days later he heard from some friends who told him of their experience in Brittany when the stone building they were staying in was subject to strong shaking from the earthquake.

Margaret Rodway, from the Herefordshire and Worcestershire Earth Heritage Trust, recalled how having experienced three earthquakes since living in Malvern she was unfortunately, "in Bath at the time of the Dudley one". However, her father who lives in Rowley Regis remembered the shaking: "Afterwards he found that most of the mortar on the outside of the damp course of his bungalow had fallen out, so he assumed that the house must have shifted slightly on its foundations".

Local walking group members also offered their memories of the Dudley earthquake. Many slept through it; however some remembered the event, like Steve Tustin, from Tipton, who recalled how a large rumbling sound woke him up: "...my house also felt like it was slightly shaking. As I had been in a deep slumber I was totally unaware of what was happening!" Then the neighbour was banging on Steve's front door, worried about what was going on and fearing that the nearby Midland metro had derailed. Outside they noticed several other people out on the street in their night clothes all wondering at what had just occurred. Steve discovered that it was an earthquake the following morning on the radio. Three days later he noticed, "a crack in the concrete floor of the garage that hadn't been there before", and that "two roof tiles had been dislodged and slid into the guttering".

Another walking group member was woken up by the sound of the earthquake rattling furniture. Whilst another thought from the noise that: "the garage had collapsed". One member living in Bedford at the time only felt a minor shudder, but was surprised on waking the next morning to hear people talking about his home town of Dudley. Another group member, living at home in Dudley, was up working late when she felt the earthquake and saw her computer shaking. Her parents however, "woke up, believing it to be the dog". ■

Andy Harrison

Geobabble

'There is some controversy over the pronunciation of controversy'. I hesitate in writing anything about pronunciation of geological terms, for when I look up technical words online, there is usually a link to a voice which comes back with the correct pronunciation. I am not referring to dialect which in itself can produce problems. I moved to the Black Country from east London over 50 years ago and the problems of differences in the words used would be exploited by my geology students. On one occasion I showed them a small collection of igneous rocks that I had collected after fieldwork on the Isle of Skye, and at the end a lad said, 'Thanks, I like your bibbles sir'. I smiled without knowing what he meant and assuming he was not being rude. (My non-Black Country spellcheck wants to change 'bibbles' to either bibles or bubbles). The only way I could get my own back would be to drop in to cockney rhyming slang so that if a specimen went missing, asking, 'Who's half inched the trilobite?' ►

In geology we can cope comfortably with regional accents, all using the same words but with a way of saying those words that will allow people to recognise where you come from. I still use the southern long 'a' and we can easily recognise various regional accents. What really interests me is how geological terms are pronounced; terminology has evolved as has the spelling of those terms in line with the progression of the science. Many of us can remember when feldspar was 'felspar', the change in pronunciation was minimal and the 'd' was easily accommodated verbally. But if we take another common mineral 'augite', how are you now pronouncing that in your head? I would suggest that your pronunciation has nothing to do with regional accent or dialect but more about who introduced you to the term.

My very first geology teacher pronounced the word in the most common and accepted way. Two syllables, 'au' as in 'cow' and 'gite' as if it is spelt with a 'j': '**owjite**'. If you consult online dictionaries with sound attached, that is the most common pronunciation, but it is not exclusive. Sometimes the first syllable is pronounced 'or' as in the word aught, so we get '**orjite**'. I have also heard some use a hard 'g' in the second syllable as we do in 'go' or 'got'. Potentially we have four different possible pronunciations, **owjite**, **owgite**, **orjite**, **orgite**. Of course it does not matter one iota how it is pronounced as long as we are communicating about our science.



*Augite from Muhavura volcano, Rwanda.
Photo by Didier Descouens*

Another difference I have noticed comes with where you put an emphasis on a word. The first sentence of this article is about which syllable in the word you emphasise. How are you pronouncing 'Calymene' in your head right now? This has four syllables, I pronounce all four syllables with a slight emphasis on the 'lym': so it comes out as '**ca-lym-me-ne**'. The 'me' component is said with a very short 'er', so that the last two syllables sound rather like 'many'. However, others put the emphasis on the first syllable, and run the last two together, '**cal-ym-ene**'. In this version the 'ene' is pronounced 'ean' as in 'clean'. I have always been conscious of how we pronounce our terms, but have come to the conclusion that it does not really matter as long as we are understood, but we must resist the use of 'bibble' in our literature.

NB: *Bibble* is a Black Country word for 'pebble'. I do not know how widespread is its use, but an elderly friend of mine who has lived all his life in Dudley, uses it constantly. *Half-inch* is Cockney rhyming slang for 'pinch' meaning steal, and was in constant use by young people in east London when I was there. However, the phrase has to be said very quickly with dropped 'h', so it sounds like '**arfinched**'. ■

Bill Groves

Editorial Postscript

There's just room in this bulging issue for me to thank our contributors for some very meaty and interesting articles. We hope you've enjoyed the mix of local news and geological impressions from abroad. Please! Send some short items for the Members' Forum which we've had to omit this time.

Remember that **volunteers are wanted for 17th November**, and we hope to see as many of you as possible at our conservation/clearance meetings. Can you give a short presentation at the Members' Evening on 10th December? Let Graham know if so (see p.2), and please put the **evening of 12th December** in your diaries, when we celebrate **100 years of geology at Dudley Museum and Art Gallery**. (see p.3) We hope to have full details of this event for the December issue. ■

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