Newsletter No. 213

June 2012

The Black Country Geological Society

Contents:

Copy date for the next Newsletter is

Wednesday 1st August 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.

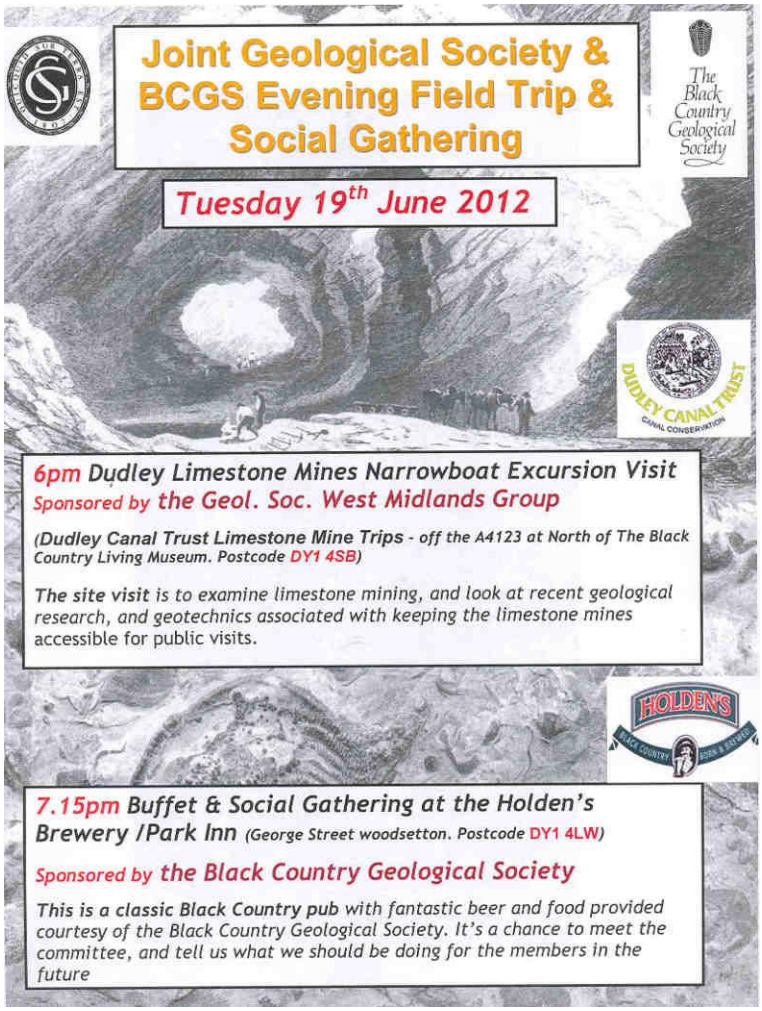
Hammering is seldom necessary. It is the responsibility of the hammerer to ensure that other people are at a safe distance before doing so.

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: 07973 330706 or email: andrewcfharrison@yahoo.com

Tuesday 19th June: *(Joint Field Meeting with the Geological Society)* Canal trip into Dudley Limestone Mine. Meet by 6pm at the car park for the Dudley Canal Trust Trips, off the A4123, DY1 4SB. This will be followed at 7.15pm by 'Grey Pays un Baercon' at the Park Inn, Woodsetton, DY1 4LW, sponsored by BCGS (see flyer on right). There are limited places on the Canal Trip, and places will be allocated on a first come first served basis. All are welcome to attend the buffet afterwards. To book a place on the canal trip and/or the buffet supper, please contact Mike Williams: email bungalowmike@blueyonder.co.uk or tel: 01902 822505 (**not** Andy Harrison for this event) **no later than Friday 15th June. N.B. This event is restricted to Geol. Soc. and BCGS Members only.**



Saturday 30th June: *(Field Meeting)* Visit to Haughmond Hill Quarry (nr. Shrewsbury) and The Ercall (nr. The Wrekin) Led by Bob Bucki. **Locality 1:** Meet at Haughmond Hill Quarry car park SJ 543 149 at 8.40am. All attending must have helmets, boots and Hi Viz jacket or jerkin as this is a working quarry and the manager will not allow access unless we follow the safety procedures. We will look at the Precambrian sediments of the Stretton and Wentnor Groups that comprise the Longmyndian Supergroup. **Localities 2 and 3:** Meet at Forest Glen car park on the south side of Lawrence Hill, SJ 639093, around 1.00pm after a lunch stop (at a local pub or packed lunch). We shall be looking here at the Uriconian Volcanics of the Upper Precambrian and the unconformity that marks the base of the Cambrian marine transgression.

Sunday 22nd July: *(Joint Field Meeting with the Warwickshire Geological Conservation Group)* Visit to the Clent Hills. Led by Andy Harrison. Meet at 11:00am at Nimmings Woods Car Park, GR SO 938 807. Trail length approx 2½ miles, (½ mile on foot). Starts on Clent Hill, includes St Leonard's Church and ends at the road cutting at Holy Cross. May include St Kenelm's Church and the source of the Stour if time allows. We will see the Clent and Kidderminster Formations, progressing into the Bromsgrove sandstone and various geologies of the surrounding landscape. (This is the trip postponed from 29th April due to bad weather.)

Car Sharing for Field Trips

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

Sunday 5th August: Caer Caradoc and Comley Quarry, Church Stretton. Led by Keith Hodgkiss (Shropshire Geological Society). Meet at 10.15 for 10.30 start at GR: SO 47709 96199, near Botvyle Farm, Church Stretton. Bring a packed lunch. No toilet or pub stop. Hard hats and high visibility jackets **not** required. Visit will include a 5 mile walk to the summit of Caer Caradoc, following the Church Stretton Fault for much of the way. This will be followed by a visit Comley Quarry, which contains Cambrian limestone and trilobites. Finish around 15:30.

Saturday 18 August *(Field meeting):* Wrens Nest. Led by Graham Worton. A second opportunity to visit classic exposures in the Black Country. Walking (one mile); some rough ground. Full details tbc in the August Newsletter.

Field visits in the pipe line:

September: Visit to the Snailbeach Mines, Shropshire, jointly with the Shropshire Geological Society.
October: Visit to Charnwood Forest, Leicestershire, led by Mike Allen.
October to February 2013: Geo-conservation months. Site visits will take place on the first Saturday of the month. Details of the first days should be available for the August newsletter.

Monday 15th October: *(Indoor Meeting)* 'The Geological Photo Archive of the Geologists' Association'. Speaker: Dr. Jonathan Larwood, 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 reveal some of the forgotten images of geology through the last century with particular reference to the Black County and its surroundings.

Monday 19th November: *(Indoor Meeting)* 'Next Steps for the Development of the Lapworth Museum of Geology'. Speaker: Jon Clatworthy of the Lapworth Museum of Geology, University of Birmingham. During 2010 and 2011 the Lapworth Committee have been drawing up plans for a major re-fit and re-display of the Lapworth Museum. Jon will share this vision with us and focus on some of the new initiatives of the redevelopment, and will also give some insight into the gemstone collections on loan from the Birmingham Museum and Art Gallery.

Monday 10th December: *(Indoor Meeting, 7.00 for 7.30 start)* BCGS Members' Evening and Christmas Social. This will comprise the usual eclectic mix of short presentations, sharing of geological knowledge and experiences, members' collections to be envied, and pleasant conversations within a convivial festive atmosphere embellished with a lovely buffet.

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 **11.00am - 1.00pm** on **Wednesdays:** 1st, 8th, 15th, 22nd, and 29th August (Summer holidays), and 31st October (Half term), or the same time on **Saturdays:** 23rd June, 7th July and 24th November.

Saturday 22nd September 10.00am - 4.00pm: Magical Minerals and Fossil Fair. Admission free. This event will be held entirely in the Museum and Art Gallery, and will be a smaller event than the two day Festival held last September. Aimed at collectors, this is a chance to meet some of the country's leading fossil dealers and purchase from the amazing array of mineral specimens.

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.

Warwickshire Geological Conservation Group

Sunday 10th June: Henley in Arden: Building Stones & Beaudesert Walk. Leader: John Crossling. Meet 10 a.m. at St Nicholas Church.

Wednesday 20th June: Dark Lane Copse Quarry, Moreton Morrell Lane, Lighthorne. Leader: Jon Radley. Meet 7 p.m. at the quarry.

Saturday 7th July: Astley Castle, Church & Moorwood Trail. Leader: Brian Ellis. Meet 10 a.m. at Astley church.

Wednesday 18th July: Kenilworth Cutting and Common. Leaders: Brian Ellis and Ian Fenwick. Meet 7 p.m. at the footbridge. Park in Princes Drive.

For details of venues/times contact Ian Fenwick swift@ianfenwick.f2s.com or 01926-512531.The WGCG mobile phone (07527 204184) available on the day from 11.00. There is a charge of £2.00 for non-members. For further information visit: http://www.wgcg.co.uk/

Shropshire Geological Society

Saturday 9th June (afternoon Rockhop meeting, commencing 2.00 pm): Bridgnorth, led by Andrew Jenkinson and Mary Steer. An opportunity to see desert sediments around the town. Easy walking. Booking to reserve a place and obtain joining instructions from Eva Peringer; email: pertam@vaperinger.plus.com; telephone: 01746 764189.

Saturday 30th June (day meeting): Little Wenlock opencast coal mine, led by David C Smith. An opportunity to visit a working opencast coal mine. Booking to reserve a place and obtain joining instructions from David C Smith; telephone: 01952 591900.

Saturday 7th July (day meeting): Lower Levels, Snailbeach Mine, led by Chris Rayner. An opportunity to visit deep underground. Special insurance arrangements will apply and be aware that tight squeezes will be involved; bring your own refreshment, if required. Booking to reserve a place and obtain joining instructions from Chris Rayner, by email: chris.rayner@virgin.net; telephone: 01952 510463.

Monday 23rd July (evening Rockhop meeting, commencing 6.00 pm): Wenlock, led by Chris Rayner. An opportunity to see building stones around the town. Easy walking; bring your own refreshment, if required. Booking to reserve a place and obtain joining instructions from Chris Rayner, by email: chris.rayner@virgin.net; telephone: 01952 510463.

Thursday 9th August (morning Rockhop meeting, commencing 11.00 am): Dudmaston, led by Andrew Jenkinson and Mary Steer. Walking (one mile); some rough ground. Booking to reserve a place and obtain joining instructions from Chris Rayner, by email: chris.rayner@virgin.net; telephone: 01952 510463.

Anyone wishing to attend should telephone or email the co-ordinator for the meeting at least 48 hours in advance of the activity. A charge of £3.00 is levied for non-members. Further info at: www.shropshiregeology.org.uk/

Herefordshire and Worcestershire Earth Heritage Trust

Through the summer months the H&W EHT and their Geopark partners are running a wide variety of geology related events, with something for everyone. Below is a selected summary of forthcoming 'GeoFest' events. There's much more! **Full details of these and other 'GeoFest' events,** are on their website (see box below).

Guided Geology and Landscape Walks/Field Trips:

Saturday 9th June: 'An Ice Age River though an Ancient Desert'.
Sunday 10th June: 'A walk around a disused limestone quarry on Abberley Hill'.
Tuesday 19th June: 'The Mathon River'.
Sunday 24th June: 'Herefordshire Beacon and Broad Down'.
Saturday 30th June: 'Huntley, Longhope and Hobbs Ridge', Gloucestershire.
Tuesday 3rd July: 'Colwall Parish'.
Sunday 14th July: 'Geology of the southern Malvern Hills'.
Friday 20th July: Wilderness Quarry, Mitcheldean'.
Sunday 22nd July: 'The Wyche and Purlieu'.
Thursday 2nd August: 'The Severn Valley'.
Tuesday 7th August: 'Dudmaston Estate'.

The Three Counties Show - Family Event: Friday 15th June - Sunday 17th June. Gloucestershire Geology Trust and H&W Earth Heritage Trust will hold a joint geological display, plus information about projects.

Saturday 23rd June: Guided Industrial Archaeology and landscape Walk:
'The Broken Promise - the canal that was never completed'. Meet: 10.30 am at the Leisure Centre car park, Dunley Road, Stourport, DY13 OAA. The walk explores the landscape and archaeology of the proposed route of the **Leominster to Stourport canal** from the Rock/Abberley area to Stourport, via Astley. Cost: £5.00. Booking essential: 01905 855184. *(See also 'The Leominster Canal and James Perry', Members' Forum p.12 and refer to the EHT web site/GeoFest programme for other events featuring industrial archaeology and building stones.)*

Rock and Fossil Roadshows:

Wednesday 1st & Thursday 2nd August, 11 - 3pm. The Engine House, Station Rd, Highley. WV16 6NZ.
Friday 10th - Sunday 12th August, 11 - 3pm, Bewdley Museum, Load Street, Bewdley, Worcestershire. DY12 2AE.
Monday 27th August, 11 - 5pm, Worcestershire County Museum, Hartlebury Castle, Hartlebury, Kidderminster. DY11 7XZ.

To view or download the 'Geofest' calendar, and for further information about the Trust's activities visit the H&W EHT's web site: www.earthheritagetrust.org/ or phone: 01905 855184.

North Staffordshire Group of the Geologists' Association

Saturday 23th June: Dudley Museum & Wren's Nest. The trip should convene in the reception of Dudley Museum and art Gallery at 10.45am and we'll have a look at the new exhibits and handle some objects from the collection until about 12:45pm. Break for lunch. Re-convene at the Mons Hill College car park at 1:30pm where we'll have a walk around the new trails and features that have been installed as part of the 'Ripples Through Time' project.

Non-members pay £2 to cover temporary membership giving them insurance cover. A field fee of £2 per head is normally charged for members and non-members to cover leader's expenses. Further information at: www.esci.keele.ac.uk/nsgga/

Woolhope Naturalists' Field Club - Geology Section

Sunday 1st July: Walking the Malvern Hills. Led by Eddie Bailey.

Saturday 21st July: Croft Castle Champion sites.

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

Stamford and District Geological Society

Friday 3rd August: Middlegate Quarry, South Ferriby. Meet 10.00am.

Visitors are welcome on payment of £3.00. Contact Bill Learoyd: billlearoyd@aol.com
Further information at: www.stamfordgeolsoc.org.uk/

Manchester Geological Association

Saturday 9th June: Dangerous Dinosaurs and Fabulous Fossils: Tribute to Fred Broadhurst at Park Bridge Visitor Centre, Ashton-under-Lyne. Leader Chantal Johnson and the Broadhurst Family. Time 11.00 - 15.00. Family Fun Day.

Sunday 24th June: Conwy Area. Joint with OUGS. Leader Jonathan Wilkins. Time tba. A trip looking at the Ordovician Conwy Rhyolites around Sychnant Pass (am) and more igneous exposures (Silurian tuffs etc) around Deganwy Castle (pm). There are limited places available so book early.

Saturday 28th July: Cefn Mawr and Moel Findeg. Leader Peter del Strother. Time 10.00. First to examine the Dinantian cyclic carbonate succession of the Loggerheads Limestone Formation and Cefn Mawr Formation. In the afternoon to examine the Minera Formation, which is a transition facies to the earliest Silesian.

Visitors are always welcome. Please book in with Jane Michael if you intend to come along to any of the field events:- Telephone 07917 434598, email: outdoors@mangeolassoc.org.uk
Further information about meetings at http://www.mangeolassoc.org.uk/

Mid Wales Geology Club

Wednesday 20th June: 'The pliosaurs of Westbury: Sea monsters from a clay-pit!' Talk by Dr. Judyth Sassoon.

Wednesday 15th August: *(Evening Field Trip)* 'Geology in the Park at Powis Castle, Welshpool'. Meet at 6.30 p.m. in the Castle car park. It will last about one and a half hours.

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

Information for members

From time to time, the Society is emailed copies of other geological societies' newsletters. If you would like to be emailed a copy when they are available please email the Newsletter Editor at the address below. You may, of course, ask to be removed from the list of recipients at any time.

Editorial

I'm pleased to be able to announce that Linda Tonkin is our new Honorary Secretary, and we are delighted that she has agreed to fill this vacancy on the committee. General queries should in future be addressed to her, and Newsletter business to me as usual (contact details on p.13).

Our summer programme of field visits is now more or less complete, with just a few details yet to be confirmed. I hope that as many of you as possible will be able to enjoy the Canal Boat trip on 19th June and the chance to socialise afterwards. Don't forget to contact Andy if you would like to attend some of the more distant field trips but don't have transport. Lifts can usually be arranged, given sufficient notice.

I'm sorry that we are unable to offer the 'Dudley Bug' pages in this issue, but hope that our Dudley Bug team will be back in action again for the next issue. Nevertheless, I hope you'll find an interesting mix of items in this issue, and I'll look forward to your responses to the queries posed in the Members' Forum, and to receiving any other items you have for our next issue. ■

Julie Schroder

Field Meeting Report

Sunday 29th April: Warren Lane & Barnt Green Road Quarries, The Lickey Hills Country Park, H&W EHT 'Champions' Project. Led by Julie Schroder (BCGS) with other members of the Lickey 'Champions' group.

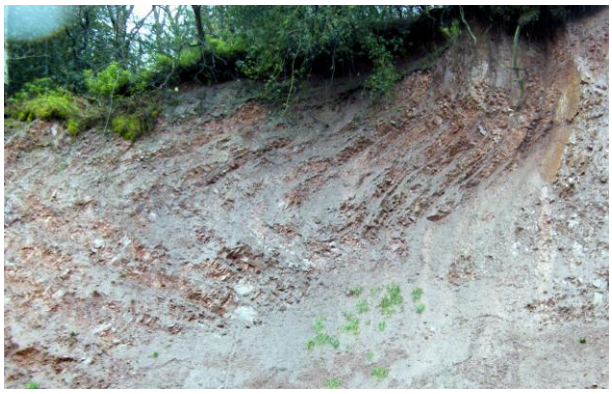
It was a very wet, cold and windy Sunday morning, reminiscent of university field trips, when we met around 10:15 in the Visitors Centre of the Lickey Hills Country Park. We were joined by members of the Warwickshire Geological Conservation Group (WGCG) and our leader was our very own Julie Schroder. Over the past two years Julie has been a member of the Lickey 'Champions' group, assisting the Herefordshire and Worcestershire Earth Heritage Trust (H&W EHT) with their Champions Project at the Lickey Quarries. Two sites, Warren Lane Quarry and Barnt Green Road Quarry come under the Champions project, which aims to protect and conserve the geodiversity they contain. The H&W EHT has also produced a 2 mile trail and guide as a part of the Lickey Hills Champions Project.

The park is dominated by the Lickey Ridge, a north-south trending horst comprising Lickey Quartzite. The ridge is faulted on both sides against Carboniferous Alveley member to the east and Triassic Kidderminster Formation to the west.

At the Lickey Hills Country Park, the Lickey Quartzite is believed to be the most easterly occurring Ordovician outcrop in England. The Lickey Quartzite is variable in nature. In Warren Lane Quarry it is grey, fined grained and forms a westerly dipping bedding plane. In Barnt Green Lane Quarry the Quartzite is orange brown, fine to coarse grained and interbedded with layers of mudstone. The Barnt Green Lane Quarry quartzite and mudstone layers are also feldspar and mica rich and show evidence of overfolding and faulting. On top of the Lickey ridge are what look like boulders of white brecciated Lickey Quartzite in a fine matrix. Rather than deposited boulders, they are believed to be re-cemented in-situ bedrock.

The variable nature of the Lickey Quartzite indicates a variety of depositional environments from shallow to deep and of high and low energy. The origins of the folding seen in Barnt Green Lane Quarry is uncertain, however it is anticipated that they relate to earth movements produced during the Caledonian and Variscan Orogenies. ►

In 1879 Charles Lapworth created the Ordovician System to separate the Cambrian and Silurian Systems. After his appointment to Mason College in 1881 he undertook extensive studies of the Birmingham area, including the Lickey Hills. Originally he classified the Lickey Quartzite as Cambrian age and it wasn't until much later that it was reassigned to the Ordovician.



Unfortunately there is no public access to Warren Lane Quarry. However, the Champions Project has cleaned up Barnt Green Lane Quarry for the public to see. The fire service was apparently called upon to wash down the quarry's rock faces with high pressure hoses. A boundary fence has been erected across the front of the quarry and interpretation boards put up to describe and explain the features seen.

The weather did not dampen the minds of those present and several ideas were put forward to explain the features seen in the quarry. As the weather showed little sign of improving the unanimous decision was made to postpone our Clent visit until the summer and we retreated to the Visitors' Centre for lunch.

I would like to thank Julie and the Champions group, and the staff of the Lickey Hills Country Park for their time and a very interesting day. I would also like to thank members of the WCGC for joining us and hope to see them in the summer for a visit to Clent. ■

Andy Harrison

To see some more photos of this event and others (taken in better weather!) go to the Lickey Champions Flickr site: http://www.flickr.com/photos/lickeychampions/ (Ed.)

William Jerome Harrison FGS.

Jerome Harrison was a well known geologist who operated in the Midlands during the last quarter of the nineteenth century. He published a great deal, much of it about the Ice Ages; indeed he has had a former glacial lake named after him. But others might say, surely you mean Harrison the photographer? He took photographs by the 'dry plate' method and there are collections in Birmingham Central Library and Birmingham University Earth Sciences Department. Many of his photographs were of geological subjects. There is even a third strand to Harrison's contribution to Science and that is as a teacher. In his early twenties he studied at Westminster Training College and gained outstanding marks in chemistry, physics, physical geography and geology. At this time he also studied at the South Kensington government science laboratories. His education was designed to enable him to become a scholar and a teacher and he was soon to become the Head Master of a large boys' school in Leicester.

HAROLD BAKER *Portrait of William Jerome Harrison, 1885.* **Photo:** *Birmingham Reference Library.*

W. JEROME HARRISON.

Harrison was a Yorkshireman, born in 1845 and in 1872 he became Curator of Leicestershire Museum and set up large and popular classes in all aspects of science, although geology was emerging as his main interest and where his expertise lay. Today these classes would be called extra-mural. He became a Fellow of the Geological Society and in 1880 at the age of 35, he was appointed Science Demonstrator to the School Board of Birmingham with back up buildings ►

and a large staff of assistants. He was responsible for the science education of thousands of young people and also young teachers.

Education in this country had reached a significant point, for in 1870 the Government set up the School Board system so that at last every child, from whatever background should be able to attend a school, and science was considered important, with geology at the forefront of the science movement. Harrison saw his role as bringing education to the masses. He started publishing in 1875 and up until 1908 he wrote 8 books and just under 60 papers. Although some of them were in academic journals, most of them appeared in more accessible publications; for example: *Midland Naturalist; Science Gossip; Knowledge;* there is also an 1877 paper entitled: 'On the Geology of the Charnwood Forest' from *The Proceedings of the Dudley Geological Society, Vol. III.* His interest in Glaciology becomes apparent in his later papers of the 1890s, and many of these appeared in the *Glacialists' Magazine.* However, of interest to those hunting erratics is a paper entitled: 'A Bibliography of Midlands Glaciology'* in *Proceedings of the Birmingham Philosophical Society, Vol, IX, p. 116 – 200.*

[Copyright]
FIG. 13.—BOULDER IN WOLVERHAMPTON PARK.
(From a Photograph by W. Jerome Harrison. Block lent by Messrs. Blackie & Co.)

When looking at Harrison's observations of erratics and the effects of glaciation in Birmingham and the Black Country, I have turned to a book written by Charles Lapworth in 1907† in which Harrison wrote the section entitled: 'The Ancient Glaciers of the Midland Counties of England' (pp 400-408). It is here that he prints his photograph of the boulder in Cannon Hill Park *(see Newsletter 210 p.14)* as well as that of the boulder in Central Park (now West Park), Wolverhampton. This is one of the last contributions he made to the study, and so presumably contains all the 'up to date knowledge'.

Andesitic boulder in West Park, Wolverhampton

In modern geology we have the great advantage of having absolute age dating of rocks and geological events, but before the second half of the last century this was not available. Geologists did not use the terms Devensian, Wolstonian or Anglian; they thought of the period of glaciation as a single ice age. Interglacials were obviously being debated as Harrison says he could find "no proof of any 'interglacial' period". He identified three glaciers that had affected this area, the Arenig, Irish Sea and North Sea. The Arenig, now part of the Devensian, was from that district in North Wales and carried boulders from that area; distinctive feldspathic ashes and felsites. He mentions that the erratic high up on the Clent Hills *(see Newsletter 206, p.16)* is Arenig as is the boulder in Cannon Hill Park, but he believed that the Arenig was the first glacier to reach our area.

The Irish Sea Ice, which we now know also to be Devensian, produced the vast array of erratics we are familiar with, and Harrison recognises the ice front, which he calls the 'fringe', running through Bridgnorth, Wolverhampton and Rugeley. He also identifies the erratics as coming from the Lake District and Scotland. He mentions Wolverhampton Park, now West Park, with its monolithic boulder of andesite eleven feet long, which he believes came from the Lake District, together with the Criffel Granite boulder nearby. He recognised that in the Wolverhampton area the erratics number in their thousands.

His final glaciation was the North Sea Glacier or Scandinavian Glacier which is the Anglian glaciation, the earliest, rather than the latest, as he thought. He does not say much about the West Midlands in this context, calling on his considerable experience of the geology of Leicestershire and Warwickshire for examples. It would be easy to dismiss Harrison's work as having got it all wrong; he did not believe interglacials existed and he got his 'glaciers' in the wrong order, but there are hints in his writing that if he could have continued his work a little longer, (he died in 1909), he would have changed his view. Where the boulder clay (till) of the Anglian and Devensian were close to each other near Derby, he ►

tried to work out an age relation, but got it wrong. He also mentions that in many areas the drift deposits can be divided into three units, the Upper and Lower Boulder Clay, often with an intervening 'Middle Sands and Gravels' which he explains by streams on, in and beneath the ice. Only a bit more fieldwork and I believe his brilliant mind would have cracked it.

For the personal details of Harrison in the first part of this article I have relied heavily on a leaflet entitled 'William Jerome Harrison FGS, Pioneer Amateur Photographer', by Peter James from Birmingham Central Library, and also a Bibliography of Geological Publications from the same source for which I am very grateful. A collection of Harrison's photographs, many of them geological is held in Birmingham Central Library. ■

* It is of interest when the term 'glaciology' first became in general use. It has been said that the start of the study of glaciology was initiated by the findings of the Scott expeditions to Antarctica in the early 20th century. Harrison uses the term and in the 1890's there was a *Glacialists' Magazine.* *(See Bill's 'Geobabble' on p.11 for more on glacial terminology Ed.)*

† *Professor Charles Lapworth, with contributions by Professor W.W. Watts and W.J.Harrison. '*A Sketch of the Geology of the Birmingham District'. Cornish Brothers, Birmingham. 1907.

Bill Groves

Please send material for the next Newsletter to:

julieschroder@blueyonder.co.uk

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

Rare earth rarity could scupper 'greener future' plans

A recent report from the Joint Research Centre of the European Commission said that the shortage of rare earth elements and other metals could seriously hamper the development of greener energy technology. The report highlighted five metals that are both essential to greener energy technology and under considerable supply risk. They include the following: dysprosium; neodymium (both rare earth elements); gallium; indium and tellurium. The technologies studied for the report were nuclear power, solar power, wind power, bio-energy, electricity grids and carbon capture and storage (CCS). As an example, the large scale deployment of solar power technology would require half the current world supply of tellurium and a quarter of the supply of indium. Wind power relies on the use of very powerful permanent magnets, which incorporate the rare earth elements, neodymium and dysprosium. Clearly the widespread deployment of wind power technology in Europe will require large quantities of these elements.

A CdTe photovoltaic array, photo by NREL, Wikimedia Commons

Another recent survey pointed out that the chemical industry is particularly ill prepared for the 'ticking time bomb' of mineral and metal scarcity that it will face in the near future. Apart from the above elements they also highlighted other 'critical' raw materials and elements including beryllium, cobalt, tantalum, lithium and fluorspar. China currently has the largest known reserves of rare earth ores but has, not surprisingly, banned their export, at least for the time being. It is anticipated that the number of industries affected by the scarcity will triple in the next five years.

As an amusing (?) aside to this, when I was a research fellow some years ago I was involved with a group that were doing spectroscopic studies on certain tellurium compounds. Such compounds are toxic, but in those pre-formal health and safety days we just used common sense! Small amounts of ►

tellurium compounds when absorbed through the skin (below acute toxic levels of course) are metabolised in the body to form hydrogen telluride, H_2Te, which has an incredibly obnoxious and offensive odour even at very low concentrations in air (worse than the rotten eggs smell of hydrogen sulphide). Trace amounts of H_2Te in the body are exuded from sweat pores. Affected persons would have an offensive aura surrounding them for a few days, which limited one's social life and led to some strange looks in the students' union bar! We were none the worse for the experience (so far!). To help prevent unintended contact a notice was posted on the control panel of the spectrometer which stated *'please do not coat the instrument controls with tellurium compounds'*. In today's formal health and safety/risk assessment regime I very much doubt if this would count as an effective means of controlling risk! ■

Pete Stamper

Geobabble

The original idea behind *GEOBABBLE* was to highlight the bewildering new terms that appear in Earth Science, but old terms, now out of use can be equally interesting. When researching these now redundant expressions you often get led into new areas of historical geology. While I was looking at erratics and Harrison I came across the noun, '*Glacialist*'. He wrote in the 'Glacialists' Magazine' which was a publication in the 1890s. It was a quarterly record of glacial geology which included the Proceedings of the Glacialists' Association. This academic Journal was edited by Percy F. Kendall, F.G.S. who was Secretary of the British Association Committee on Erratic Blocks. Many of the above organisations no longer exist, although many will be familiar with the British Association, now rebranded as the British Science Association.

'Glacialist' was first used around 1850-55 when the concept of Britain having once been glaciated was becoming a well accepted idea. The definition of 'Glacialist' was 'one who attributes the phenomena of drift in geology to glaciers'. The phrasing of this definition seems to suggest that there were alternative views at the time. In 1887, Sir H. H. Howarth published a book entitled: 'The Mammoth and the Flood'. When looking at this book, Harrison says it 'endeavours to show that "a very great cataclysm or catastrophe occurred at the close of the mammoth period". This cataclysm being of the nature of a rush of "the loose watery envelope" of our globe over the land, this producing a deluge or great flood'. A 'Glacialist' was someone who did not believe that it was water that deposited the beds of drift; glaciers were a far better transporting and depositing medium. Once the ice ages were accepted by all, the term glacialist was superseded by glaciologist or glacial geologist.

The organisations mentioned existed at this time but I cannot find any reference to the Glacialists' Association outside the 1890s. The British Association had a very active Committee on Erratic Blocks from the 1880s into the start of the twentieth century. Presumably the 'Mammoth Period' was the horizon in which Mammoth teeth and bones were found, and as good geologists they would be trying to work out the succession, and the relationship between the existences of Mammoth to glacial drift. We know the complexities of Pleistocene stratigraphy.

This all looks pretty primitive to the modern geologist, but if I had a time-machine I would like to go back 120 years or so and tag on to the back of a field trip in our area led by Harrison and Lapworth. They were giants, and although our modern facts about glacial deposits would not be known to them, their scientific thought processes and imagination could not have failed to impress.

I am not an expert on the history of geological thought or geological institutions, and I am sure there is someone reading this who can enlighten us on some of the committees and organisations mentioned. There was a society in Dudley I believe; it may have been active in this area. I am sure the Editor would love to hear from you. *(Yes please! Ed.)* ■

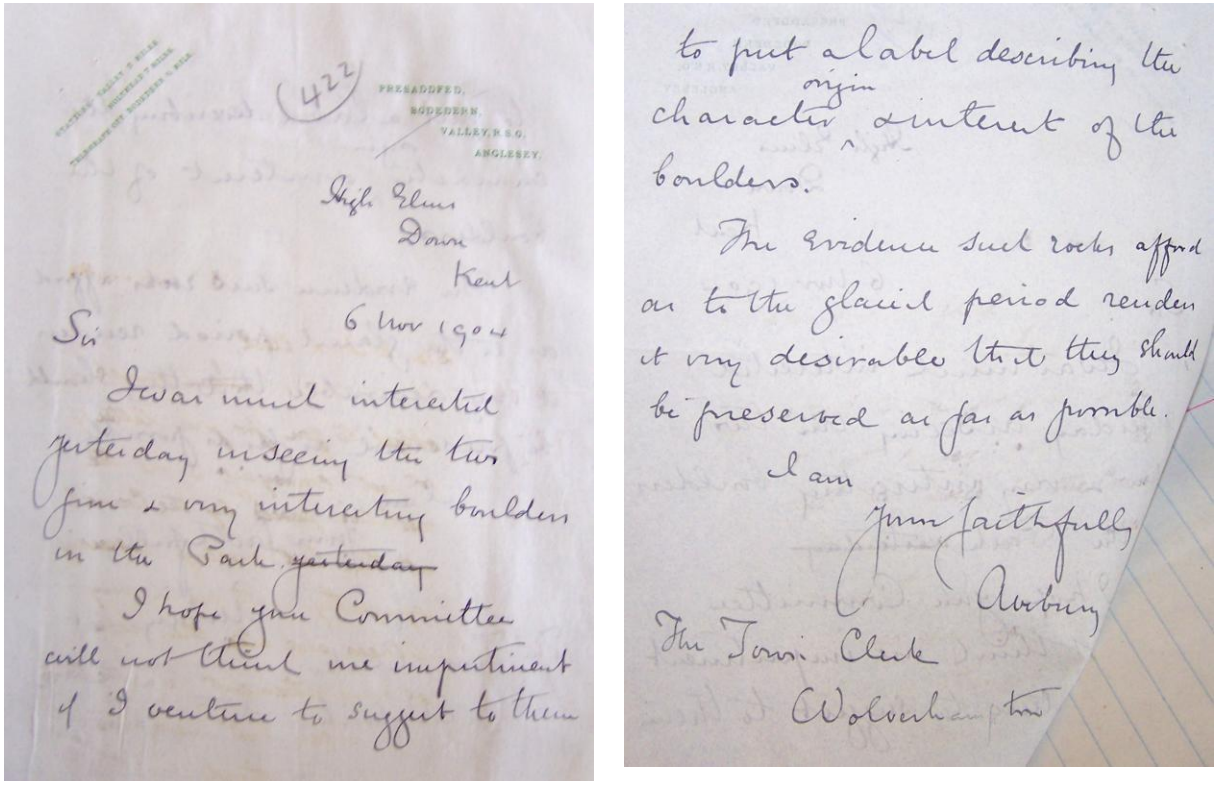
Bill Groves

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

Members' Forum

Lord Avebury and the West Park Erratic Boulders - a postscript

Mike Williams has sent the facsimile below as a postscript to his article in the last Newsletter (No. 212, pp. 6&7). It is the letter which Mike referred to from Lord Avebury to Wolverhampton Council, which precipitated the labelling of glacial erratic boulders in West Park. Now that he has the original text to hand, Mike is in the process of negotiating the possibility of replacing the missing tablet with a historically accurate replica, and we will keep you informed about this in the Newsletter. ■



High Elms
Down
Kent
6 Nov 1904

Sir

I was much interested yesterday in seeing the two fine & very interesting boulders in the Park yesterday

I hope you Committee will not think me impertinent if I venture to suggest to them to put a label describing the origin character & intent of the boulders.

The evidence such rocks afford as to the glacial period renders it very desirable that they should be preserved as far as possible.

I am

Your faithfully
Avebury

The Town Clerk
Wolverhampton

Lord Avebury's letter to Wolverhampton Council, 6th November 1904

Leominster Canal and James Perry - Can anyone help?

Gerry Calderbank is the Secretary of the 'Friends of the Leominster Canal' and wonders if there's anyone from amongst our members who can help him with the query below. If so, either let me know or contact him directly on: 01989 563740 or email: gandic@macace.net (Ed.)

"We would particularly welcome any new information concerning James Perry of Wolverhampton. Perry was a leading light, then Treasurer, with the formative Staffs. & Worcs. Canal and a contemporary of Richard Whitworth (Stafford) in the 1760s. His other main promotional connections were with the Birmingham Canal and the Severn & Thames Canal; however, Perry also meddled to some extent in the affairs of the Leominster Canal and we would like to know a lot more abut him. We think he eventually settled somewhere in Herefordshire?" ■

Leominster Canal aqueduct over the river Teme at Little Hereford. Photo by Andrew2606, Wikimedia Commons

For details of a walk to be led by Gerry, entitled 'The Broken Promise' exploring the landscape of a part of the proposed route of the Leominster - Stourport canal', please see p.5 above. Ed.

Clent Fossils?...

I live close to the Clent Hills, where my wife and I frequently go for walks. We park by the Hill Tavern and walk along the main path to the Four Stones. Like many people with an interest in geology I spend as much time looking down at the ground as I do at the surroundings. The path is mostly made up of breccia of the Clent Formation, with its typical angular rock fragments, of various sizes, set in a medium to fine grain matrix. Most of this material is sourced locally, I expect.

One day about four years ago I spotted a rock, imbedded in the path that stood out from the rest because of its rounded shape. I had no tools with me as we were supposed to be on a gentle Sunday morning walk. After much struggling I managed to remove the rock and placed it on the side of the path to collect on the descent. The rock was covered in mud so it was difficult to see anything. When we returned home I washed it and discovered to my surprise lots of fossil imprints imbedded in the rock, which appears to be hard, medium grained sandstone, dark grey in colour.

Obviously, such a rock is not native to the Clent Formation, but how it got there or where it could have come from is something of a mystery. I would be grateful for any suggestions as to its origin. ■

Pete Stamper

...and another rocky puzzle:

My nephew showed me this photo of some strange features in Torridonian sandstone. He was hoping that I might be able to offer an explanation, but I couldn't! Here's what he said:

"Here's that photo of the strange rock 'nodules' I found in Torridon. I'd love it if somebody could tell me what these are and how they formed.

I found them on the slopes of Beinn Eighe above Loch Coire Mich Fhearchair, grid reference roughly NG946603. There was a small area covered in large sandstone blocks and many of them had these formations on them".

If you have any ideas, please let me know. ■

Julie Schroder

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