



*The
Black
Country
Geological
Society*

Committee

Chairman

Graham Worton

Vice Chairman

Peter Twigg

Hon Treasurer

Alan Clewlow

Hon Secretary

Linda Tonkin

Field Secretary

Andrew Harrison

Newsletter Editor

Julie Schroder

Other Members

Bob Bucki

Steve Hopkins

Alison Roberts

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

Newsletter No. 224

April 2014

Contents:

Future Programme	2
Other Societies and Events	3
Editorial	6
AGM Report	6
Rock Making Minerals	7
Cross Hands Quarry	8
Geoconservation Days 2013 -2014	10
Geobabble	11
Members' Forum:	
Letter from Dr Alex Liu	12
Bone Dusters Paleo-Ale!	12



<p>Linda Tonkin, Honorary Secretary, 4 Heath Farm Road, Codsall, Wolverhampton, WV8 1HT. ☎ 01902 846074 secretary@bcgs.info</p>	<p>Andy Harrison, Field Secretary, ☎ 01384 370 188 Mob: 07973 330 706 fieldsecretary@bcgs.info</p>	<p>Julie Schroder, Newsletter Editor, 42 Billesley Lane, Moseley, Birmingham, B13 9QS. ☎ 0121 449 2407 newsletter@bcgs.info</p>
<p>For enquiries about field and geoconservation meetings please contact the Field Secretary. To submit items for the Newsletter please contact the Newsletter Editor. For all other business and enquiries please contact the Honorary Secretary. For further information see our website: www.bcgs.info</p>		

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.**

Please let Andy Harrison know in advance if you intend to go to any of the field meetings.
If transport is a problem for you or if you intend to drive and are willing to offer lifts,
please contact Andy with at least 48 hours notice.

Saturday 12 April (Field meeting): Barrow Hill and other Geoconservation sites, led by Andrew Harrison. Joint trip with the Warwickshire Geological Conservation Group. Starting at Barrow Hill, we will then visit Springvale Park, Barr Beacon and Rowley Quarry. Meet on Vicarage Lane, Barrow Hill Nature Reserve, Grid ref: SO 915894, at 10.30. Bring packed lunch and stout footwear. From Barrow Hill we will need to car-share due to restricted parking at Springvale Park and Rowley Quarry. From Barrow Hill we will head to Barr Beacon Quarry first. Please contact the Field Secretary (details above) to show your interest in attending.

Monday 28 April (Indoor Meeting): 'Wine, Whisky and Beer: the role of Geology'. Speaker: Professor Alex Maltman, University of Aberystwyth.

Saturday 10 May (Field Meeting): Visit to the Oxford University Museum of Natural History. Led by Professor Paul Smith (Museum Director). Meet at the Museum at 10:00 for coffee/tea, and an introduction by Paul. The tour will take in: the main court displays; hopefully visit the archives to see the William Smith maps and papers; the Mesozoic vertebrate stores; the Palaeozoic collections, and the Huxley Room, where the Great Debate between Huxley and Wilberforce took place. For further information see the museum website - <http://www.oum.ox.ac.uk/> Lunch can be purchased in the Museum cafe. We will finish the visit around 4.00 - 4.30. Please contact the Field Secretary (details above) to express an interest in attending this event.

Tuesday 13 May (Indoor Meeting at Wolverhampton University at 6.30) 'Monitoring Active Volcanoes'. Speaker: Professor Hazel Rymer, Open University. This is a joint meeting with the West Midlands group of the Geological Society. Meeting room tbc.

Sunday 15 June (Field Meeting): Lickey Hills. Led by the Lickey Hills Geo-Champions. Meet at 10.30 at the Lickey Hills Country Park Visitor Centre, Warren Lane, Rednal, Birmingham, B45 8ER. Following our recent involvement in geo-conservation work in the Lickey Hills, this will be a chance to gain a better understanding of the geological formations of the Lickey Hills and their context within the wider landscape. In the morning we'll follow the Champions Trail (approx 1.5 miles). In the afternoon we will explore other sites of geological interest in the Lickey Hills area. Trip ends 4.00 - 4.30. Lunch at the Visitor Centre, snacks available, packed lunch advisable. Sensible footwear. Please contact the Field Secretary (details above) to show your interest in attending.

Sunday 13 July (Field Meeting): Snailbeach and the Stiperstones. Led by Andrew Jenkinson (Shropshire Geological Society). Joint meeting with the Woolhope Naturalists' Field Club, Geology Section. Meet at the Bog Visitors Centre (grid ref OS 356979) for a 10.30 start. The morning will be based around the Bog centre and involve a walk of about 5km. Separate walk (about 3km) at Snailbeach in the afternoon, going by car perhaps via Shelve, Roman Gravel and Hope. Lunch at the Bog Centre (cakes and drinks available, but not savouries). **Places restricted to 10**. Please contact the Field Secretary (details above) to show your interest in attending.

Mid August (Field Meeting): Worcester City Geology. Led by Andrew Harrison (BCGS). Joint with the Woolhope Naturalists' Field Club, Geology Section. (Date and full details tbc.)

Monday 22 September (Indoor Meeting): Forensic Geology (title tbc). **Speaker: Dr Haydon Bailey FGS**, Senior Vice President of the Geologists' Association.

Monday 20 October (Indoor Meeting): 'The Island of Rum, Diary of a 60 Million Year Old Magma Chamber'. **Speaker: Dr Brian O'Driscoll**, Keele University.

Monday 17 November (Indoor Meeting): 'The Galapagos - geology, fauna and flora'. **Speaker: Dr Les Riley**, Consultant Stratigrapher.

Procedures for Field Meetings

Insurance

The Society provides public liability insurance for field meetings but personal accident cover is the responsibility of the participant. Details can be obtained from the Secretary. Schools and other bodies should arrange their own insurance as a matter of course.

Health and Safety

If you are unsure about the risks involved or your ability to participate safely, you should contact the Field Secretary. Please take note of any risk assessments or safety briefing, and make sure that you have any safety equipment specified. The Society does not provide hard hats for use of members or visitors. It is your responsibility to provide your own safety equipment (eg. hard hats, hi-viz jackets, safety boots and goggles/glasses) and to use these when you feel it is necessary or when a site owner makes it a condition of entry. Hammering is seldom necessary. It is the responsibility of the hammerer to ensure that other people are at a safe distance before doing so.

Leaders provide their services on a purely voluntary basis and may not be professionally qualified.

Other Societies and Events

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

Teme Valley Geological Society

Monday 14 April: 'All about Chalk'. Speaker: Professor Rory Mortimore.

Mondays 12,19, 26 May: Geology Course - the Landscape of Britain with Dr Paul Olver. Venue: the Pupil Referral Unit opposite Maylite Trading Estate, WR6 6PQ, on B4197. Course fee: £35.00. For more information contact John Nicklin, 01886 888318.

Sunday 18 May: Fforest Fawr Geopark with Alan Bowring. Contact John Nicklin, 01886 888318

Meetings are generally held in Martley Memorial Hall, Martley at 7.30. £3 non-members. For more details visit: <http://www.geo-village.eu/> or contact Janet Maxwell-Stewart, 01886 821061

Shropshire Geological Society

11-13 April - Weekend meeting: East Midlands - the Precambrian and Cambrian of Charnwood and Nuneaton, and visiting the BGS at Keyworth. Led by David Pannett. Booking to reserve a place and obtain joining instructions from David Pannett: email: jessicapannett@hotmail.co.uk; telephone: 01743 850 773.

Anyone wishing to attend should telephone or email the co-ordinator for the meeting you wish to attend. A nominal charge is levied for attendance by non-members. Further info at: www.shropshiregeology.org.uk/

Woolhope Naturalists' Field Club - Geology Section

Sunday 13 April: Penarth Coast. Led by Dr Tom Sharpe, National Museum of Wales. Meet at 10.30 in the cliff top car park at the end of Cliff Parade, Penarth (Grid ref. ST 186 704). Toilets and cafe, parking is free. Bring a packed lunch. Boots with ankle supports needed for the beach. Clothing appropriate for the weather. Hard hats NOT needed.

Sunday 1 June: The Brecon Anticlinal - an exploration of the Upper Silurian north of Brecon. Led by Duncan Hawley. Meet at 10.15 in Felinfach village, just off the A470, on the old road (now a dead end) - just past the Felinfach Griffin pub and bus stop, where there is parking (GR SO 0904 3308). No facilities. Bring food and drink. Wear stout footwear and sensible clothing to suit the weather forecast. Camera, hand lens and binoculars would be useful.

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

Mid Wales Geology Club

Wednesday 16 April: 'Shropshire's Evolution: highlights of a journey through time'. Speaker: Prof. Mike Rosenbaum.

Sunday 27 April: Llanymynech Limestone Quarries and heritage site lime kiln. Led by Tony Thorp.

Sunday 4 May: Gaer Fawr, near Guilsfield (also has an Iron Age fort). Led by Tony Thorp.

Wednesday 21 May: 'Fracking: a hot topic, but what's it all about?' Speaker: Row McGurn.

Unless otherwise stated, meetings start at 7:15 (tea/coffee & biscuits) with talks at 7:30 at Plas Dolerw, Milford Road, Newtown. Further information: Tony Thorp (Ed. newsletter & Hon. Sec): Tel. 01686 624820 and 622517 jathorp@uku.co.uk Web site: <http://midwalesgeology.org.uk>

Geological Society, West Midlands Regional Group

Tuesday 8 April at 18:30: 'From Mantle to Mineralisation: The Diary of a 60Ma Magma Chamber'. Speaker: Brian O'Driscoll, Keele University. Venue: Lapworth Museum of Geology.

Tuesday 13 May 18:30: 'Monitoring Active Volcanoes'. Speaker: Prof. Hazel Rymer, Open University. Joint meeting with BCGS. Venue: University of Wolverhampton. Meeting room tbc.

For further details and enquiries, please contact the Group Secretary, Daniel Welch at: geolsoc_wmrg@live.co.uk

Manchester Geological Association

Saturday 12 April: Monsal Head. Led by Eileen Fraser. The re-opening of the tunnels along the route of the old London-Midland railway has revealed some interesting geology, especially at Headstone cutting. Known as the Monsal Trail, this travels high above the Wye valley through the heart of the Peak District from just outside Buxton to Bakewell.

Sunday 1 June: Fred Broadhurst Memorial Field Trip: Tegg's Nose. Led by Jane Michael. This is a half-day trip based round Walk No. 15 in Rocky Rambles in the Peak District

For further information about outdoor meetings go to: <http://www.mangeolassoc.org.uk/> or please contact Jane Michael by email: outdoors@mangeolassoc.org.uk Visitors are always welcome.

Geologists' Association

Friday 16 - Monday 19 May: 'Puddingstone and related silcretes of the Anglo-Paris Basin'. A joint meeting organised by the GA, the Geological Society of London, and the Society of Antiquaries. The one day conference will take place at Burlington House on Friday 16 May followed by a field trip to Hertfordshire on Saturday 17 and extension into the Paris Basin on 18 and 19 May. Bookings should be made through Georgina Worrall at the Geological Society. Tel: 020 7434 9944. email: georginaworrall@geolsoc.org.uk For full details of this event see the GA web site: www.geologistsassociation.org.uk

Warwickshire Geological Conservation Group

Wednesday 7 May: Saxon Mill to Rock Mill traverse. From Saxon Mill walk across the Avon terrace sequence towards Old Milverton, observe the recently cleared Bromsgrove Sandstone SSSI of Guy's Cliffe from across the river, and thence to another Bromsgrove site at Rock Mill. Leaders: Ian Fenwick & Jon Radley Meet at 6.30 at Saxon Mill (GR SP 2912 6707).

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.

'Wild About Perton' - Spring Festival

Saturday 12 April 10.30 - 3.00 at Perton Library. This is a community festival with a strong wildlife and environmental focus, organised in partnership with Staffordshire Library Service and South Staffordshire Council. BCGS will be represented along with displays and activities from: RSPB, Halfpenny Green Owl & Falconry Centre, Forest of Mercia, Butterfly Conservation, Bumblebee Conservation, Chainsaw Carver, University of Birmingham Biological Sciences - and more expected. The Festival, now in its 8th year, attracts a broad audience including young families, and in 2014 there is a special emphasis on attracting older teenagers and men.

Natural History Museum Symposium

Wednesday 21 May: Woodward 150: fossil fishes and fakes. Flett Theatre, Natural History Museum, South Kensington. Open to everyone and free to attend, but places are limited and **you need to register in advance online**. The symposium will celebrate the life and work of Sir Arthur Smith Woodward on the 150th anniversary of his birth. He contributed widely to our knowledge of fossil fish, extinct animals and regional geology. Eminent speakers will discuss his influence on palaeontology, his involvement in the Piltdown Hoax, and the legacy of his work at the Museum. Fossil specimens and memorabilia will be on display and there is a post-symposium buffet for delegates (optional, at an additional cost approx. £10-15).

Full details are on the [Natural History Museum web site](#) including an on-line registration form.

Editorial

The AGM confirmed several changes on the committee. For their services on the committee we expressed our thanks to retiring members Gordon Hensman, Mike Williams and Alison Roberts in the last issue of the Newsletter, but a change of plans for Ali means that she will not be leaving us after all. We are pleased that she will be able to continue serving on the committee. I would also like to extend a warm welcome to Graham Worton and Bob Bucki who will be returning to the committee after a short break, and to Steve Hopkins who joins for the first time. Since the AGM, committee member Alan Clewlow has kindly stepped into the breach to succeed Mike Williams as treasurer. We thank him for agreeing to fill this vacancy. **Please note that any outstanding subscriptions for 2014 should be sent to Alan Clewlow (contact details on p7).**

In this issue we are pleased to feature an item on minerals from honorary BCGS member Spencer Mather, which we hope will be the first in a series. Spencer's expertise on this subject is legendary. We also feature a splendid article from Steve Birch on the Jurassic treasures to be found at Cross Hands Quarry (see front page and p8). Inspiration for a future BCGS field trip, perhaps?

We hope you will all note the forthcoming field meetings in your diaries. Support for our field meetings last year was sometimes disappointing, and we hope more of you will be involved this year. If transport is a problem, please don't hesitate to contact our Field Secretary, Andy Harrison (contact details on p2).

Finally, don't forget the Photo Competition. Full details can be found in the February Newsletter, Issue 223 pp 8 & 9. ■

Julie Schroder

Annual General Meeting Report

The 2014 AGM was held on Monday 24 March at 7.30 followed by a fascinating talk on 'Speleothems and Climate' by Ian Fairchild, Professor of Geosystems at Birmingham University. Below is a summary of the AGM reports.

Treasurer's Report

As he was unable to attend the meeting, our treasurer Mike Williams, submitted a written report which was circulated to members attending. Income and expenditure remained in balance with a small profit at the end of the year. Income from the highly successful recruitment at the Rock and Fossil Festival in 2013 was not included in these accounts and would be reflected in the 2014 balance sheet. There had been a steady increase in membership which now stood at a total of 95, however, there continued to be pressure on expenditure as room hire charges and subscriptions to the GA and Down To Earth magazine had increased. A change of venue may have to be considered. Mike Williams thanked the auditor, Martin Normanton for auditing the accounts. Mike thanked everyone for their support during his ten years as Treasurer and wished the Society every success for the future.

Chairman's Report

The Chairman, Gordon Hensman, reported that it had been another good year with an excellent programme of lectures and field trips. The Dudley Rock and Fossil Festival in September 2013 had been very successful for the Society. Some field trips had emphasised the importance of geoconservation, and the Chairman urged more members to get involved with this important work of the Society. Gordon thanked all the Committee for their support with special thanks to the retiring Treasurer, Mike Williams, for all his work for the Society and the Committee. Gordon had also decided to retire from the Committee after many years service, and Graham Worton offered a vote of thanks to the Chairman for all his work for the Society over the last 25 years. ►

Election of Officers

All members of the Committee had offered themselves for re-election, with the exception of the Chairman, Gordon Hensman and the Treasurer, Mike Williams who were standing down. Graham Worton was nominated to serve as Chairman. Proposed by Peter Twigg and seconded by Gordon Hensman, he was duly elected. There were no nominations for the post of Treasurer. Bob Bucki and Steve Hopkins were nominated to serve as Committee Members. Proposed respectively by Julie Schroder and John Schroder; seconded by Linda Tonkin and Julie Schroder, were duly elected.

It was also agreed that the serving Committee Members be re-elected as follows:

Vice Chairman: Peter Twigg, Hon Secretary: Linda Tonkin, Field Meetings Secretary: Andy Harrison, Committee Members: Julie Schroder (Newsletter Editor) and Alison Roberts. ■

Linda Tonkin

Subscriptions 2014

Many thanks to those of you who have already renewed your subscription. If you haven't yet renewed then please send your subscriptions to our new **Treasurer:**

Alan Clewlow, 19 Manor Court Road, Bromsgrove, Worcestershire, B60 3NW.
email: alanjclewlow@aol.com

Subscription rates:

Individual	£20	per annum	Family	£30	per annum
Full time student	£5	per annum	Group/Company	£35	per annum

Cheques should be made payable to 'The Black Country Geological Society'.

Rock Making Minerals

Minerals are the building stones of the earth's crust, and they have pretty definite formulae and things that go into them. No matter where they are found in this world they all have the same formulae. I will now go into each type of mineral that make up the rocks of the earth's crust, and describe them in detail, starting in this issue with augite.

Augite - $\text{Ca}(\text{Mg, Fe, Al})(\text{Si, Al})_2\text{O}_6$

Augite is an aluminium pyroxene with Fe and Mg in variable amounts. It is the most widespread of the pyroxenes and an essential component of the darker of the plutonic rocks. Crystals of augite are often to be found in basalt and volcanic ash; the crystals can be up to 6cm long, but are more usually about 25mm in length, and belong to the monoclinic system of symmetry.

Characteristics: Colour: black. SpG: 3.2 - 3.4. Hardness: 5 - 6. Perfect prismatic cleavage and an uneven fracture, with aluminium substituting for both magnesium and silicon. The Al_2O_3 ranges from 3% to 9%. Magnesium and iron are present in varying percentages, as is calcium.



*Augite, Muhavura volcano, Rwanda:
Wikimedia Commons*

Occurrences: Augite is common in most countries, including America, Scotland, Canada, Italy and the German Eifel mountains where it occurs widely in the soil and in the rocks at Daun. It appears in large crystals up to 4cm in a light fine grained volcanic ash porphyry at Ontario, Canada. ■

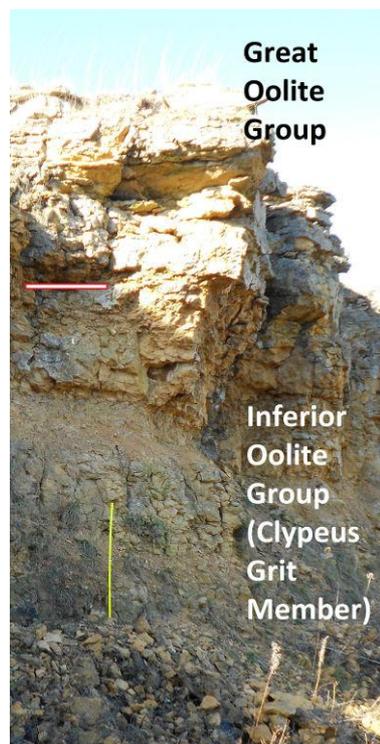
Spencer Mather

Cross Hands Quarry, South Warwickshire

There are many interesting rock exposures in the Midlands; some come from the Inferior Oolite and Great Oolite of the Jurassic. These sedimentary rocks date from around 180 to 164 million years ago respectively, ranging from the Aalenian to Bathonian.

My interest in geology began after reading the delightful book 'Fossils' by H. H. Swinnerton. By chance, the first fossil locality I explored was Cleeve Hill in the Cotswolds, belonging to the Middle Jurassic period. Cleeve Hill exposes an almost complete sequence of Jurassic rocks from the Inferior Oolite, ranging from the Aalenian and Bajocian stages. Cross Hands Quarry also exposes limestone and marl belonging to the Middle Jurassic Period, encompassing the boundary between the Upper Bajocian of the Inferior Oolite and the Lower Bathonian of the overlying Great Oolite Group. This is one of the best places to observe this stage boundary transition between the two Groups.

Cross Hands is a largely back filled quarry located near Chipping Norton, directly off the A44, signposted as 'Newman Indemnifying Farm' and it can be visited with the permission of Steve and Paul Newman (and their dogs!). Permission can be obtained by writing to the address provided at the end of this article, including SAE!



Cross Hands Quarry



Clypeus Grit

At Cross Hands Quarry, the Upper Bajocian is represented by the Clypeus Grit Member and this is seen to underlie the basal unit of the Hook Norton Limestone of the Chipping Norton Formation of the Great Oolite Group.

A quarry section is shown in the photo (above) with the horizontal bar showing the approximate boundary between the two groups and the scale demonstrated by a 1 metre rule shown in the lower left of the picture. A typical geological section recorded by the author in February 2014 is shown in the table (below), which agrees reasonably well with the description given by M. G. Sumbler (Geological Conservation Review, 1997).

The Clypeus Grit comprises of ooidal-peloidal limestone and marl with plenty of well-preserved shelly fossils. The photo (above) is of a polished rock sample showing the ooidal-peloidal structure and the fine calcite mud of the Clypeus Grit (1cm scale subdivided into 0.1 cm units). The mud has been interpreted as evidence of deposition under calm conditions, whilst the peloids have been interpreted as being formed under periods of higher energy conditions; overall it is believed the sediments have been mixed up by the activity of burrowing animals such as Clypeus.

The Clypeus Grit is overlain by ooidal, sandy and flaggy limestones of the Hook Norton Limestone. By contrast to the Clypeus Grit, this formation shows abundant fossil woody impressions and carbonaceous traces. The Clypeus Grit shows many fossils weathering out in situ, particularly bivalves, brachiopods and the echinoid *Clypeus ploti* (see photo below), which gives its name to this rock member. Many of the bivalves occupy their life positions. By comparison, the Hook Norton Limestone shows fewer fossils but the lower levels show relatively large vertical burrows. ►



Hook Norton Limestone

Geological Section of Cross Hands Quarry, South Warwickshire				
Period / Stage	Group / Formation / Member	Estimated Thickness in metres or centimetres	Bed #	Description February 2014
Middle Jurassic / Bathonian	Lower Great Oolite Group / Chipping Norton Limestone Formation / Hook Norton Limestone Division	1.5 - 2.0 m	7	Buff - orange hard limestone, more massive bedding. Large burrows present in lower section. Unable to view most limestone in position, though becomes flaggy towards top. Scree indicates finer grained sandy shelly limestone and also some shelly ooidal - peloidal limestone, carbonaceous flecks and woody impressions.
		20 cm (Irregular)	6	Crumbly brown weathered mud at base, irregular thin 'iron' banded layer with calcite lined voids. Possible fine pale grey coloured mud layer also present. Buff - orange rubbly limestone, more sandy with shelly debris, ooidal - peloidal. Fossils present include: gastropods, oysters, bivalves and woody impressions. Many fossils appear worn. In other quarry sections the limestone unit above cuts into this bed with only a thin brown muddy seam between them.
Middle Jurassic / Bajocian	Upper Inferior Oolite Group / Salperton Limestone Formation / Clypeus Grit Member	50 cm	5	Buff - orange rubbly limestone, very rich in complete well preserved fossils e.g. Clypeus sp, brachiopods (terebratulids / rhynchonellids), bivalves. Up-turned Clypeus fossils present and possible indications of woody impressions at top of the bed?
		50 cm	4	Buff - cream coloured hard limestone, ooidal - peloidal, shelly debris
		50 cm	3	Pale cream coloured marl and soft limestone, orange banding present. Rock unit can be traced easily. Free ooids / peloids / limey mud / shelly debris. Complete fossils also present e.g. Clypeus, bivalves, brachiopods (e.g. Acanthothyris sp). Rests on sharp base with 10° dip
		1.25 m	2	Buff - cream coloured rubbly limestone, ooidal - peloidal, loose grit, shelly debris, complete bivalves present e.g. Pholadomya sp (assumed in life position).
		20 - 25 cm	1	Buff - cream coloured hard limestone, ooidal - peloidal, gritty, mostly covered by scree
		1.0 - 1.5 m	Scree slope	Part overgrown, abundant fossils, often complete including: echinoids, bivalves, brachiopods, gastropods, burrows, and woody impressions

A polished rock sample of Hook Norton Limestone (see photo above) shows the inclusion of woody fragments (voids originally filled with black carbonaceous material) and a significant change in sedimentation conditions incorporating sand grains derived from a nearby landmass. The orange-brown finer grained limestone from the Hook Norton Limestone contrasts nicely against the pale cream ooidal-peloidal limestone of the marl from the Clypeus Grit.

Rock and fossil collecting is permitted at Cross Hands Quarry, though site restrictions apply. Samples can be collected but hammers are not permitted on the exposures other than in areas designated for collection of specimens from scree material. Some of the common fossils from Cross Hands Quarry are: echinoids (e.g. Clypeus ploti, Nucleolites sp, Holoctypus sp); bivalves (e.g. Pholadomya sp, Gresslya sp, 'Oysters', Trigonina sp); brachiopods (e.g. Stiphrothyris sp, Acanthothyris sp); worms ►



Clypeus ploti (scale in cm)

(e.g. Serpulids); gastropods (e.g. Nerineid type); trace fossils (e.g. worm burrows); plants (e.g. ginkgo - see photo on front page); corals; bryozoans; and dinosaur bone!

Overall, Cross Hands Quarry represents a fine example of a fossiliferous locality for students of geology to explore. Finally, I'd like to thank Steve and Paul Newman for their generosity in allowing people to visit their quarry. ■

S. D. Birch

References:

1. Nature Conservancy Council, Cross Hands Quarry Geological Site Description
2. Sumbler, M. G. 1997, Geological Conservation Review, Volume 26, Chapter 3, Cross Hands Quarry
3. Smith, A. B. (ed.) 2012, Natural History Museum, British Mesozoic Fossils

Acknowledgements:

Mr. S. Newman, Indemnifying Farm, Little Compton, Moreton-in-Marsh, Gloucestershire GL56 0SL

Please send material for the next Newsletter to:

newsletter@bcgs.info

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

Geoconservation Days 2013 - 2014

The end of 2013 was quiet in terms of conservation work whilst a few organisational changes were underway. As well as the Wildlife Trust for Birmingham and the Black Country, we are beginning to work more closely with local authority country park wardens, and developing a steady portfolio of sites requiring work. 2014 has got off to a good start with clearance work being undertaken at Springvale Park, Rowley Quarry and Barr Beacon. March also saw more work being carried out with the Lickey Hills Geo-Champions in the Lickey Hills.

Sunday 2 February: Springvale Park, Wolverhampton

It was a cold day with patchy cloud when we met around 10:30 on Ettingshall Park Farm Lane just off the A459.

Since our previous visit there had been little regrowth of vegetation. The day was spent continuing to form a level platform adjacent to the exposure of Coal Measures strata at the top of the slope, and clearing the slope of any new vegetation. The view of the slope and exposure from the park was improved with the removal of some branches and saplings. These provided good material for constructing a temporary safety barrier along the platform edge at the top of the slope. ►



Saturday 8 February: The Rowley Hills Reserve



Under the guidance of Paul Stephenson (Wildlife Trust for Birmingham and the Black Country) a small group of volunteers met around 10:30 at the Tower Road end of St. Brades Close. The day was very windy but the group cleared an area of bramble to expose more of the dolerite quarry face with some great spheroidal weathering.

According to Paul, work has begun to build a cairn with an interpretation plaque on top, and adjacent stone seating made from the dolerite, situated close to the cleared exposure. Work started on 28 February and continued through March. Paul says that he will be only too happy to show BCGS members round the site should they be interested.

Sunday 2 March: Barr Beacon, Pinfold Lane Quarry

The day was cold and windy with light rain at times. We met Helen Sanger (Senior Countryside Ranger, Walsall MBC) at around 10:30 in the main Barr Beacon car park, prior to going into the quarry.

We spent the day clearing bramble and beech saplings from the floor of Pinfold Lane quarry in an attempt to open up the view of the exposures making up the eastern quarry wall. There is still much to be done and it is hoped that eventually we can produce enough of a view to see clearly the contact between the Hopwas Breccia and the overlying Kidderminster Conglomerate. Future plans will include improving the paths with material from the site and producing interpretation boards.



The coming of spring has brought to an end the current season of conservation works until the end of the summer / autumn. I would like to thank those who have taken part so far and hope to see more members on future days out. In April, our first field trip of 2014, along with the Warwickshire Geological Conservation Group, will include a walk round some of the sites we been working on, including Barrow Hill, Barr Beacon and Rowley Hill. ■

Andy Harrison

Geobabble

I thought that there might be some geological interest in the Sochi Winter Olympics, perhaps good structures in the background mountains, or glaciated landforms, but these were not apparent. I was



left to think about the petrology of the curling stone. The mineralogy is well known: alkali feldspar, quartz and the amphibole riebeckite. The rock, microgranite, comes from Ailsa Craig, an island in the Firth of Clyde, and is used for curling purely because it can be polished to a very high degree, which may or may not have something to do with the mineralogy. Riebeckite is a sodium rich amphibole, and the magma that produced the island, part of the Tertiary Igneous Province, has resulted in other sodium rich minerals with interesting names. Arfvedsonite, another amphibole, caught my eye. The Ailsa Craig quarry is now closed, but in the 1890s it would be exporting

about 1000 pairs a year. If you want more information I recommend the BGS Geoheritage site. ►

If I was inspired to take up curling I would have to buy a pair of stones and I was surprised to see that they are available on Ebay, although postage is high. The other events in the Winter Olympics and Paralympics looked very dangerous, but we did well and won medals. Our women competitors were very successful and their skill and efforts were rightly recognised. However, in geology, the skills and efforts of women in the nineteenth and twentieth centuries are only now beginning to be acknowledged. Mary Anning leads the way and I have always wondered about the role that Charlotte Murchison played in Sir Roderick's career. It is said that she introduced him to geology, went with him on fieldwork, collected fossils and sketched landscape features for his publications. They must have talked about geology but we have no way of knowing what sort of contribution Charlotte made.



The Walcott family's camp site in the Canadian Rockies, 1910.

Charles Doolittle Walcott is famous for his work on the Burgess Shale. He was Director of the US Geological Survey and worked out of the Smithsonian Institute. All the interpretation of the fauna of the shale was his; he was the expert palaeontologist. The Burgess Shale with its fossils was found on 2 August 1910 by Walcott and his wife Helena. It is a difficult exposure to get to, steep on a mountain side and it involved a long trek. However, once it was found and its importance was recognised there was an annual summer camp there to split rocks and collect fossils, and it was not just Walcott and his wife but his whole family. He had four children, and they also took a friend of the family, Mary Vaux, who was a botanist, photographer and explorer. Helena was killed in an accident in 1911, but the work continued and eventually Charles married Mary who became Mary Vaux Walcott. Her skill as a photographer is evident in the wide coverage of these expeditions. It is not suggested that the family made a great geological input, but it is said that one of the qualities geologists have is the ability to work in teams and interact with other people. This certainly was the case with the Walcotts.

One of the best reference websites for Walcott and the Burgess Shale is that of the Royal Ontario Museum: www.rom.on.ca ■

Bill Groves

Members' Forum

Letter to the Secretary from Dr. Alex Liu, our speaker at the February meeting:

Dear Linda,

Thank you once again for inviting and hosting me. I thoroughly enjoyed my visit, and meeting with your group members, many of whom raised some very interesting points. Yours is probably the most enthusiastic and one of the largest geological societies I've spoken to, and I hope that it continues to be a thriving and successful group.

Best wishes, Alex

Bone Dusters Paleo- Ale!

In view of the upcoming lecture on 'beer and geology', Graham (Worton) may wish to see if he could find a fossil bacteria which could be used to brew a new beer, as shown in this web link:

<http://www.scientificamerican.com/blog/post/bone-dusters-paleo-ale-brewed-from-real-fossils/>

Would you rather a pint of 'Trilobite' or 'Woolly Mammoth' ?

Bernard Duggan

This reminds me that in honour of the 50th anniversary of the Wren's Nest SSSI, the Dudley Winter Ales Festival in November 2006 featured a special brew from the local Holden's Brewery: 'Wren's Nest Trilobitter'. Does anyone have any recollections of this auspicious brew? (Ed).