



NEWSLETTER NO. 142

AUGUST 2000

The Black Country Geological Society

The Society does not provide personal accident cover for members or visitors on field trips. You are strongly 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 in the Banquet Room (Dudley Suite) at the Ward Arms Hotel, Birmingham Road, Dudley. Phone: (01384) 458070. 7.30 p.m. for 8 o'clock start.

EXHIBITION: Tracking Dinosaurs 27th MAY TO 2nd SEPTEMBER at Dudley Museum

We can learn a lot about the biology and behaviour of dinosaurs from their footprints. Did they walk on two legs or four? Did they hop like kangaroos or crawl through the prehistoric earth's sludge or slime? Were they sociable or solitary? This is a touring exhibition organised by the National Museums and Galleries of Wales.

SATURDAY 23rd SEPTEMBER Walsall Local History Fair at Walsall Town Hall, Leicester Street, Walsall. Admission free.

MONDAY 25th SEPTEMBER Twenty fifth Anniversary Lecture Professor Mackay, Head of School of Earth Sciences and Professor of Hydrogeology, University of Birmingham.

EXHIBITION "The Rocks of Walsall" 3rd OCTOBER - 18th NOVEMBER in the access Gallery above Walsall Central Library in Lichfield Street, Walsall.

FRIDAY 13th OCTOBER - SUNDAY 15th OCTOBER History of Geology Group of the Geological Society . The Dudley Gathering: A Celebratory Event to Discuss and Relive Dudley's Role in the History of Geology.

Friday 13th October: Informal Gathering in Dudley Museum to view the Historical Collection.

Saturday 14th October: 10.00 am - 4.00 pm. A series of talks at Dudley Museum. This will be followed by a visit to the Black Country Museum, a boat trip through the canal tunnels and the re-enactment of Murchison's talk underground. in darkness, followed by food and drink.

Sunday 15th October: Field visit to Wrens Nest.

The programme is subject to confirmation. Although this is not a BCGS event members are invited to attend if they wish. See further details and booking form in this newsletter.

Chairman
G. J. Worton B.Sc., C.Geol.,
F.G.S., M.I.Env.Sci.
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A. Cutler B.Sc., M.C.A.M.,
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S. H. Worton B.Sc., PhD.
F.G.S., Grad. M.Inst.W.M.

MONDAY 23rd OCTOBER "Volcano: Subaerial and Submarine Volcanic Phenomena" Dr P Floyd, Department of Earth Sciences, Keele University. This lecture will concentrate on subaerial and submarine volcanic constructs produced by basaltic volcanism, as representative of the most common lava type. The global tectonic environment and the origin of basaltic volcanism will be briefly outlined to illustrate the differences between lava generation at spreading ridges (shallow mantle melting) and within lithospheric plates (deep plume-related melting). Examples from the Mid-Atlantic Ridge and recent research from the western Pacific Ocean will be used to illustrate the submarine environment, and the Hawaiian Isles for the subaerial environment. Also a look at basaltic volcanism on our closest planetary neighbours (Venus and Mars) as well as on the Jovian satellite Io.

SUNDAY 5th NOVEMBER Black Country Society 'Local and Family History Fair' in Dudley Town Hall. 10.00 a.m. to 4.00 p.m. The Society have been asked to have a stall at this event.

MONDAY 27th NOVEMBER "A Comparison of the mass extinction events at the end of the Cretaceous, Permian and Triassic periods" Professor A Hallam, University of Birmingham School of Earth Sciences.

MONDAY 4th DECEMBER Mini-lectures and Specimens A chance for members to bring along a few transparencies and/or specimens and talk about them. A form is enclosed with this newsletter.

MONDAY 29th JANUARY 2001 "Little Geophysics - looking at the top 100 metres" Dr I A Hill, Department of Geology, University of Leicester. The lecture is concerned with the common ground of engineering, archaeological, environmental and geological geophysics in the depth range 0.5 to 50 metres.

MONDAY 26th FEBRUARY 2001 "Quaternary Topics" Dr D. H. Keen, Department of Geography, Coventry University.

MONDAY 26th MARCH "Bringing Dinosaurs to Life" John Martin, Managing Curator, Leicester City Museum

MONDAY 23rd APRIL "A Walk across the Mid Atlantic Ridge: A geological Guide to Iceland" P F Regan, Division of Earth Sciences, University of Derby.

MONDAY 21st MAY "The Geology of Eastern Europe" Dr Jan Zalasiewicz, Department of Geology, University of Leicester.

EDITORIAL

Recently my attention was drawn to a copy of 'The Geology of Britain, An Introduction' by Peter Toghil. (Dr Toghil led excursions for the Society in its early days and I recall one Sunday when more than seventy people showed up for a field trip in Shropshire. He is known to many of you through his work lecturing in the School of Continuing Studies at Birmingham University and for his work for Conservation and as founder of the Shropshire Geological Society.) The friend who showed me the book is a scientist but not a geologist and claimed that it was the only geology book that had really helped him to understand Geology! It is beautifully produced and illustrated with a multiplicity of diagrams and excellent photographs. Peter, my friend, was particularly pleased that it placed Britain in its world context in each geological period and kept to a consistent format that made reference easy. I found much in it that was familiar, including diagrams from many different sources. It is written in a very clear and concise style yet contains a wealth of illustrative detail. It is easy to detect Dr Toghil's many years in teaching in the lucidity of his explanations. It is published this year by Swan Hill Press at £29.95 and can be obtained, so I am informed, at a good price from Amazon.com. Do have a look at it and put it on your Christmas list! The illustrations reminded me of many happy days I've spent on field Geology.

REPORTS

Sunday 21st May Field Meeting: Black Country Geology Part 2. Leaders: Alan Cutler & Graham Worton. A dozen or so members of the BCGS and Shropshire Geological Society gathered at the summit of Barrow Hill to take in the scenery and geomorphology of the south-western side of the South Staffordshire Coalfield. A brief resumé of the history of the area from the Silurian seas to the steamy Middle Coal Measures swamps was given against the dramatic backdrop of the hills and valleys of the Black Country and its surroundings. The party then descended into the abandoned dolerite quarries below to look at some of the features of the igneous mass and its contacts with the Etruria

marls of Upper Coal Measures times (Westphalian D). A brief drive to Tansey Green Claypit ended in frustration as, despite permission to enter, new security fencing had been erected which prevented the group from accessing the site. With the aid of the handouts provided by the leaders, and the view into the quarry from the fence line, the features were described from afar. The rock faces were seen to consist of an upper red series of clays and mudstones of the Etruria Formation. The clayey deposits are thought to have been deposited in temporary pools and very shallow lakes when rivers overspilled at times of heavy precipitation onto the surrounding low lying lands (the floodplain). The red colouration, and the presence of a number of fossil soil horizons (identified by the BGS during their mapping of the area during the early 1990s) indicated that these rocks were deposited in an environment that was better drained than the boggy and swampy low lying lands of Coal Measure times. The red marls are cut by coarse greenish sandstones and gritstones (Espley grits) which represent the meandering channels of rivers which cut across the low muddy plains. Below the red layers in the quarry face is a distinctive thick grey band. This is volcanic ash that shows some layering and contains occasional volcanic bombs thrown from a once-active volcanic vent. Ash layers which contain the carbonised remains of very primitive conifers are now buried by the landscaping of the site. The BGS published a paper about these stating that they are the earliest anatomically preserved conifers known. They once grew as a stand of saplings on the flanks of a juvenile volcanic cone. Now they are preserved as carbonised stems in life position exactly as they died about 305 million years ago, scorched by the burning ashes raining down on them. These layers are also cut by vertical veins of disturbed materials which are interpreted as steam eruption vents. The ground at the time would have been steaming and smelling of sulphur for miles around.

Lunch was taken at the pleasant canalside pub of the Samson and Lion at Buckpool. The afternoon session was a gentle walk around the Buckpool Nature Reserve where red breccias of the Clent formation were examined. These represent a scree slope at the foot of a southerly emerging mountain chain. The final two stops were at the old quarry on Wordsley Ridge (where Permian dune sandstones defined a transition to a hot arid desert environment) and the Brierley Hill road cutting at Buckpool School (where pebble beds and sandstones of the Kidderminster formation told a story of vast rivers in semi-arid environments). A Ian Cutler finished the day with a brief outline of the final shaping of the land during the ice ages.

An enjoyable full day spanning 310 million years was had by all despite the minor setback of access to Tansey Green.

Graham Worton.

BCGS Twenty fifth Anniversary Conversazione Friday 30th June at Dudley Museum

The evening opened with a quick 'pat on the back' for the Society's first 25 years, then - good wine and food and company in an excellent location. Should you not have wished to converse, there was plenty to look at around the museum but judging by the decibel level the 'conversazione' was a great success. An enjoyable and pleasant evening! Our thanks go to all those who made it possible.

John and Margaret Collins.

Many displays were put on by national organisations including the British Geological Survey, English Nature, The Geological Society of London, Birmingham University and local organisations including the Dudley Canal trust, Johnson, Poole and Bloomer, and Wrens Nest National Nature Reserve and we are grateful for their participation.

Field meeting to the Lickey Hills. Saturday 1st July Leader: Paul Shilston.

This field meeting was held as part of the 25th Anniversary weekend to mark 25 years of the Black Country Geological Society 1975-2000 - the Society held its inaugural meeting on 3rd July 1975.

The Lickeys are not far from the centre of Birmingham but they show a good range of geological features and are well worth a visit. They are particularly useful in demonstrating how the underlying geology influences the landform, the higher ground being caused by the presence of harder rock.

The field meeting started at the Visitor Centre (GR.998754) and visited most of the important localities. The important Lickey Quartzite (now dated as Ordovician) is a sedimentary (rather than a metamorphic) quartzite. It is a very hard rock much used in the past for roadstone and it forms the backbone of the Lickey Ridge. The quartzite with its anticlinal dip was seen at the nearby disused quarry, while from the lookout at the wheelchair trail there was a good general view of the countryside to the east, mostly Mercian Mudstone. The morning walk, finishing at the 'castle' on Beacon Hill (988760), showed a range of features including a good view of the Lickey Gorge, an Ice Age glacial overflow channel, exposures of Bunter Pebble Beds (Kidderminster formation, Triassic) and Keele Clay (Carboniferous) as well as views of the surrounding countryside.

After lunch the party walked northwards to see further exposures of Lickey Quartzite, which for a time dipped below ground level and then reappeared to form the face of a disused quarry some 7 metres high. The walk finished at the celebrated unconformity (992774) between Rubery Sandstone (Silurian) and Lickey Quartzite (Ordovician). This point is reputed to be the most easterly exposure of Silurian in England, though one of the participants (Alf Cole) put in a claim for exposures at Walsall as being marginally further east.

So ended the Anniversary Field Meeting, which had visited one of the classic geological sites in the West Midlands.

Paul Shilston

CONSERVATION COLUMN

Hay Head Geological Trail

Further to the opening of the Hay Head Geological Trail, Alf Cole (BCGS) and Diana Miles (Walsall Countryside Services) are now looking into possibilities for linking the trail with other nearby sites such as Barr Beacon and Pinfold Lane Quarries. Given the success of the Hay Head work it should not be difficult to demonstrate achievement and ability to deliver a project to any potential funders. Alf and I have also been looking at temporary excavations in Walsall in order to assist Brian Haines who's been closely observing and collecting from the works.

Dudley Borough Geological Trail Leaflet

Text has now been drafted by myself and Alan Cutler for the new 'Walk Through Geological Time' trail leaflet which makes use of the borough's network of geological sites. Discussions are now taking place with respect to the format and media of the published leaflet. We hope to have something ready by the end of the year.

Change of RIGS Staff at RSNC.

I am happy to report that Ruth Capper has succeeded Vicky Mason as the RIGS Development Officer for the Royal Society for Nature Conservation. Ruth has been involved in the RIGS work of the RSNC for a number of years alongside Vicky and we look forward to working with her as the movement develops.

UKRIGS update

We have just received a draft copy of the UKRIGS strategy which represents the outcome of discussions at various regional meetings. It outlines the way the organisation will function and sets out provisional priorities and objectives. I will give you a better description of this document if space allows in the next edition of the CC.

Earth Alert, Brighton.

Alf Cole and I attended the Earth Alert conference and exhibition in Brighton. This was a unique millennium geological event on a substantial scale at the Brighton Conference Centre and featured a wide range of geological subject matter. We both felt that the Rockwatch 'Discovery Room' was wonderful. This was where the kids got the chance to make fossil casts, to drive remote controlled calymene trilobites (Dudley Bugs on wheels!) and do all sorts of other fun things. The associated conference covered fairly hefty topics like the sustainability of geological resources and the changing state of the environment, so there was certainly something there for everyone. Watch out for more complete articles about this event elsewhere.

The Black Country Geological Society Collection

At the 25th anniversary Conversazione, the BCGS geological collection was formally established at Dudley museum. Three donations have been made to initiate this collection. Sheila Pitts, a former editor of the newsletter and a very enthusiastic and active member of the Society, who died in 1998, left a collection of books, maps and specimens to the Society which have now been placed in the museum for entry into the BCGS collection. The second donation is from one of our inaugural members, Peter Parkes, who has donated a number of very fine specimens of locally collected marine fossils from the Wenlock Limestones of Dudley. Thirdly, the best material collected by members during numerous conservation, collecting and recording trips to local sites has been donated. Some of the finest fossils collected in recent years have come from our conservation work and a selection of these was put on temporary display in the museum at the Conversazione. They illustrated the quality of finds that members are still commonly extracting from local rocks. The BCGS collection is taking shape. It is set to become one of the most important collections in the museum (particularly with respect to the superb and well recorded local material). If you have material that you think might be suitable please consider bringing it to one of our meetings or to the museum. More news on this next time.

Recording basic information about specimens collected

If you have been on a field trip to local sites with me, Alan C, or the Wrens Nest Wardens you will know that we get quite animated when encouraging people to record basic information about the fossils they collect. I've now taken this one step further. From the end of July, all trail leaflets given out by the museum, by the nature reserves in Dudley and, where possible, by the BCGS, will contain some of the yellow record slips sent to you with this newsletter. All school children will be asked to fill one in before going on to the Wrens Nest Reserve so that anything they find will be put into the bag with the label. For those new to geology, therefore, we can encourage good practice from the outset. If you have any other simple ideas that you think may be helpful, please drop a line to the editor

Until next time..... Graham

NEWS IN BRIEF

Welcome to new members - Paul Costa, of Bordesley Green, Birmingham and Susan Turner of Worcester.

Adam Stinton, a regular attender at our meetings and at present working producing geology and landscape trails of Worcestershire for the Hereford and Worcestershire RIGS group, is departing for the United States to embark on a PhD in vulcanology. We wish him every success and hope he will write to us with news of his progress. Can we book him for a lecture in 2006, I wonder?

I have received a copy of the very impressive newsletter of the Herefordshire and Worcestershire RIGS Group. They appear to be making very rapid progress in site recording, (1200 sites), SSSI maintenance and survey work and in obtaining funding from the Heritage Lottery Fund. Six new trail leaflets are being produced and these will provide attractive routes for field trips. Please ask if me if you would like a copy of their newsletter.

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Mini-lectures and Specimens Evening - 4th December 2000

I am willing to contribute to Members Evening on 4th December by bringing a few slides/or specimens (delete as necessary) which I will discuss with the group. Please give details below.

I have an alternative proposal:

Name
Address

Phone No.

Please send to the Editor or give to Gordon Hensman at meetings.

August 2000

BLACK COUNTRY SITES NO 7 : BLUE ROCK QUARRIES, TIVDALE

Situated on the eastern slopes of the Rowley Hills approximately 1km to the southeast of Dudley town centre is a long low rockface of dark crystalline igneous rocks of late Carboniferous age. Formerly the high northern highwall (quarry face) of a large working roadstone quarry, now only the top few metres of rock remain. The remnant exposure is approximately 100m in length and can be found at National Grid Reference SO 975 893. It is the best and most easily accessed example of the top of the basaltic intrusive igneous rocks that form the Rowley Hills that can be seen outside the active quarries on their western side. Superb examples of vertical columnar jointing and 'onion weathering/ onion skinning' (exfoliation) can be seen here. Excellent examples of soil sections passing down from topsoil through weathered basalt in to unweathered rock below can also be seen. These basalts and dolerites were intruded in a hot ($>1000^{\circ}\text{C}$) molten state into strata of the Coal Measures and Etruria Marls late in the Carboniferous period (in Westphalian D times) as a result of major earth movements of the Hercynian mountain building episode that were occurring at this time. The magmas slowly cooled at depth and formed the hard crystalline rock that is locally called today the 'Rowley Rag'. As the molten mass cooled and solidified it contracted and formed the cracks that create the columns that we see today. There is open access to the exposures from footpaths leading from Bluestone Walk and associated estate roads.

