



The Black Country Geological Society

NEWSLETTER _ NO _ 86 _ APRIL _ 1991

Lecture meetings are held at the Saracens Head, Stone Street, Dudley 7.30pm for 8 o'clock start.

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.

FUTURE PROGRAMME:

SUNDAY 14TH APRIL

Field meeting to North Staffordshire.
Leader: Mr. John Armitage.

Meet 10.15am at the Natural Sciences Centre and Observatory, Newchapel, Kidsgrove (grid ref: 862549). This is about 1.5 miles east of Kidsgrove town centre.

A suitable route is to leave the M6 motorway at junction 16, then along the A500 eastwards for 3 miles, to its junction with the A34 (roundabout). Then north along the A34 (signed Kidsgrove) for 2 miles to traffic lights at its junction with the A50 (grid ref: 829552). At the traffic lights turn right (south-east) along the A50 (Liverpool Road) then follow the attached map. The Natural Sciences Centre is approached along a small track off Newchapel High Street.

Itinerary

The day will be mostly concerned with millstone grit and coal measure horizons of the Carboniferous.

10.15am meet at Natural Sciences Centre for a talk and demonstrations.

11.45am leave for Mow Cop area to study exposures of millstone grit, and barytes mineralisation. Also an old opencast coal site.

1.00pm lunch at the Mow Cop Inn.

2.30pm visit to the opencast coal site at Biddulph. This visit has been specially arranged with British Coal, who do not normally allow visits at weekends.

Hard hats are required for this visit; bring your own if you have one, otherwise the Society's stock of hats will be available.

John Armitage is well known in the West Midlands for his lectures, evening classes and field trips, and can be relied on to provide a really worthwhile day out.

This is a joint meeting with our friends of Shropshire Geological Society.

Chairman

*A. Cutler B.Sc., M.C.A.M.,
Dip.M., M.Inst.M.*

Vice Chairman

J.E. Gollidge M.A.

Hon. Treasurer

Mrs J. Shilston

Hon. Secretary

*P.D. Shilston M.A., C.Eng.,
F.I.E.E., M.I. Mech.E.*

SUNDAY 19TH MAY

Half day (afternoon) field meeting to Saltwells local Nature Reserve. Leader: Alan Cutler.

Meet 2.00pm at Saltwells Inn, Netherton (off Saltwells Road). Grid ref: 935869. It is about one mile east of the Merry Hill shopping centre.

This area has an interesting range of geological features, including Doultons Claypit with its sequence of Carboniferous strata, the canal section at Netherton showing Devonian and Carboniferous strata with an igneous intrusion, and Saltwells Wood with its old coal workings.

MONDAY 3RD JUNE

Lecture: "Earthquakes" by Dr. I.G. Stimpson, Keele University.

It is some years since the Society had a lecture on a geophysics subject, so we are glad to welcome Dr. Stimpson to update us on recent developments. His lecture will cover the subject of earthquakes in general and will review current developments.

Dr. Stimpson is an Earthquake Seismologist in the Geology Department at Keele University. He gained a PhD for his research on earthquakes and his particular interest is in studying the origin of deep earthquakes, visiting Turkey, Chile and Brazil in the course of his work.

FRIDAY 14TH - SUNDAY 16TH JUNE

Weekend field meeting to North Devon coast. Based at Barnstaple. Leader: Michael Bamlett, Birbeck College, University of London.

The field meeting will examine coastal rocks and scenery between Westward Ho! and Baggy Point.

Cost £20 (not including accommodation) for Friday evening to Sunday. An additional whole day with the leader for a surcharge of £5.

FURTHER DETAILS AND BOOKING FORM AT THE END OF THIS NEWSLETTER.

MONDAY 24TH JUNE

Evening field meeting - "The building stones of Birmingham".

Leader: Paul Shilston.

Meet: 7.00pm at the Hall of Memory, Broad Street, Birmingham.

A guided walk in the city centre, looking at the various types of building stones used in some of the important public and commercial buildings including recent buildings and the new Convention Centre.

SUNDAY 22ND SEPTEMBER

Field meeting to Cross Hands Quarry and Sharps Hill Quarry, near Chipping Norton, Oxfordshire.

Leader: John Crossling, Keeper of Geology, Warwickshire Museum.

Meet 11.00am at Cross Hands Quarry next to Cross Hand pub. (Grid ref: 269290). The quarry is on the A44 road, about 4 miles west of Chipping Norton.

Cross Hands quarry is in the Middle Jurassic and shows the Clypeus Grit and Hook Norton limestone. Bivalve molluscs and brachiopods are the most common fossils. No hammering, but collecting is possible from loose or fallen material.

Sharps Hill quarry is in the Great Oolite of the Middle Jurassic. It is a classic site, being the type locality of the Sharps Hill beds.

Hard hats are required - bring your own if you have one, otherwise the Society's stock of hats will be available.

MONDAY 14TH OCTOBER

Lecture: The mass extinctions controversy
by Professor A. Hallam of Birmingham University.

Professor Hallam is an authority on the subject of mass extinction and will outline the present controversy between the different points of view.

Late October/early November - field meeting to Black Country Sites.
Leader: Dr John Powell, British Geological Survey.

MONDAY 2ND DECEMBER

Lecture: Geology in South Africa by Malcolm Callow.

WEDNESDAY/THURSDAY 4-5TH DECEMBER

Geological Curators Group AGM and Conference in Dudley.

MONDAY 13TH JANUARY 1992

Lecture: W.J. Harrison (1845-1908). Birmingham geologist and photographer. A historical lecture illustrated by Harrison's own photographs.

Lecturer: Peter James, local studies Archivist, Birmingham Central Library.

MONDAY 24TH FEBRUARY

Annual General Meeting followed by a talk "Mount St. Helens - ten years on" by Paul Shilston.

EDITORIAL

WELCOME TO NEW MEMBERS

We used to include this feature in our newsletters, to welcome new members, and to let existing members know that newcomers have joined. Recently we have somehow omitted to do this, but we plan to start it again. So in this issue we list those who have recently joined, and apologise to those who joined some time ago, and were not mentioned. Your membership is valued just as highly.

And to those members of many years standing, don't forget to renew your sub!

THE BLACK COUNTRY GEOLOGICAL SOCIETY

1990 ANNUAL REPORT

Membership

Membership has continued to grow for the third year in succession with increases in individual, family and junior/student categories. The overall total of 84 members is a new record for the society. The 1989 total of 75 was a record too which makes the latest figure all the more remarkable and very pleasing. The 1990 membership profile is as follows:- 50(48) individual members, 11 (9) pairs family members, 7 (4) junior/student and 5 (5) associates. (Figures in brackets denote 1989 levels)

Annual Programme

The increase in attendance levels at all meetings has been maintained throughout the year and the society has been most fortunate in attracting a wide range of exciting and informative speakers.

Thirteen meetings were held in 1990; six lectures, five field meetings, one excursion and one social. Several members also attended a weekend field meeting at Hunstanton, Norfolk.

Ten guest speakers and three members supported the society's programme during the year.

The dinner held at Birmingham University was highly successful being attended by over thirty members and their guests, who were entertained by the after dinner speaker, Dr Beverley Halstead, President of the Geologists Association.

Conservation

The groundwork undertaken by Graham Worton and Peter Smith in 1989 was completed in 1990 and formal recommendation to the Nature Conservancy Council for the designation of eight sites in Walsall and Sandwell as Sites of Importance for Nature Conservation (SINC) has now been made.

In December, three members attended the launch in London of the NCC's new initiative for the conservation of geological sites embracing SSSI's and second tier sites which are collectively known as RIGS (Regionally Important Geological Sites). This is the first time that sites below SSSI status have been formally recognised by the NCC. Our own scheme is cited in the strategy document as one of only five in the whole of Great Britain.

In 1982 Nigel Bradley painstakingly transferred the society's data of West Midlands sites onto the record cards of the National Scheme for Geological Site Documentation. Much of the information was necessarily limited and some is now outdated. Now that Dudley Museum is an official records centre, Graham Worton has commenced updating the records for Dudley sites as a voluntary service to the museum.

Other Activities

In January 1990 Judith Shilston had the distinction of having one of her photographs of Vulcano, off Sicily, selected for the cover illustration of the magazine Geology Today.

On June 1st the new Wrens Nest Trail was officially launched together with the new Geological Handbook and Trail Guide, co-authored by Alan Cutler, Peter Oliver and Colin Reid.

The chairman attended the official opening in July of the new Geological Gallery at Wednesbury Museum.

The society exhibited again at Dudley Museum Open Day in October.

Graham Worton and Paul Shilston have given talks on behalf of the society to Codsall and District Civic Association and Wolverhampton Ramblers respectively.

The Newsletter continues as a vital and buoyant link between all members. Earlier in the year Hilary Giltrap had to relinquish typing the master copy, a job now tackled by Sue Fairclough. We record our thanks to Hilary for her contribution of many years to the publication of the Newsletter. Sadly at the end of the year Andrew Rigby announced that he would be unable to continue as Newsletter Editor as he was taking up a new appointment in East Anglia. Andrew has been a valuable and enthusiastic editor and committee member and we record our grateful thanks.

In Conclusion

The society is in a very healthy state, and enjoying continuing success in all its activities.

Our grateful thanks and appreciation to the officers and members whose combined contributions make it so.

Alan Cutler.
Chairman.



THE
GEOLOGISTS' ASSOCIATION

FOUNDED 1858

BOOK REVIEWS

Wren's Nest National Nature Reserve; a geological handbook and field guide, 1990, A. Cutler, P. G. Oliver, and C. G. R. Reid, Nature Conservancy Council in conjunction with Dudley Leisure Services Department, ISBN 0 900911 26 3, pp. 1-23, £1.00

'Evolution continues-Official'. That would be the message we could take from the new edition of the guide to the Wren's Nest Nature Reserve at Dudley in the West Midlands. To some of us who have tried to trace the growth of conservation in this country, Wren's Nest will always occupy a special place, partly for what it is geologically (which is exciting), but partly for what it represents in terms of treatment and management of geological sites. First designated in 1956 in the days when there were but two geologists in the NCC, George Black and Alan Stubbs, the first full geological guide to the complex came in 1967 (Strachan, Stubbs & Warwick) doing valuable service to promote the use of the old quarries by parties who had previously used our GA Guide account by Bill Hardie (Guide No. 1, Birmingham, Itinerary 1, p.7).

The second, enlarged Guide from NCC came in 1978 (Hamblin, Warwick & White) and was accompanied by a Trail Guide which set out routes and posed questions at critical points along the way, prompting teachers how they could best use the site. All of this was obtainable for a modest 35p (20p the Guide; 15p the Trail).

When I say that the new Guide costs £1, I would quickly add that at that price, it is remarkably good value for money as the size has increased as has the skill in presentation which can go with printing in the 1990's. One useful increase are the three pages devoted to line drawings of the fossils you are likely to meet in the local Silurian strata; these are clear and straightforward and are just the kind of information which should help anyone lucky enough to find specimens as they pick over the scree mounds (the only areas where fossil collecting is encouraged on this historically important site). Another welcome change is an improved map of the whole site in the centrefold of the Guide. Deft touches by the cartographer have added to clarity and to the details compared with earlier versions in the older accounts. As with recently reviewed **Thematic Trails for Devon**, I must applaud the use of detailed sketches of views and of faces on the site in place of photographs. It is important to encourage the time-taking process of field sketching if only because it requires a full scanning of the scene and a series of decisions as to what is important and what is 'incidental' as opposed to looking one-eyed through a viewfinder and worrying about exposure readings. Murchison didn't carry a Pentax. One page is devoted to what is a Policy Statement on Fossil Collecting for the site. Here it is explained that such is the pressure of visitors keen to experience the fauna for which the site is world-famous, that the permanent warders at Wren's Nest have found it necessary to set out working arrangements so that the site can continue to be viable. Natural weathering is inadequate to replenish specimens taken too freely, so for this reason, collecting is confined to scree and tip areas where the fossils emerge as the material moves or is broken down. Clearly stated, there should be no uncertainty in the minds of visitors as to what they can do, and what they cannot do, which is good. Remembering the clearance operation in the 1960's, and the JCB which figures in one of the illustrations to the previous Guide, it might be something to consider that from time to time, short trenching or simple turnover of some screes might 'rejuvenate' the potential collecting pool.

This is a useful new account, which, as I said at the outset, might have chosen to include something about the **history of the conservation** of the site (including the debate whether to dynamite the underground workings or back-fill the space with waste when the space was thought a hazard). What is welcome, however, is the progressive and continuing conservation which is possible locally through the activities of the wardens and the local Black Country Geological Society who are equally custodians. In this, they are fulfilling everything that the GA would ask for in regional conservation. At the same time, it would have been pleasing to have seen our Birmingham Guide or our Code of Conduct mentioned somewhere in the text.

One final point, this Guide was published as a joint venture by the Nature Conservancy Council and Dudley Council as an aspect of their Leisure policies. One might expect as much from an authority which boasts a coat of arms on which fossils are prominent, nevertheless this recognition, together with the work of the Dudley Museum who have produced two very good pamphlets (*Exploring the Past*, and *The Geology of the Wren's Nest National Nature Reserve*, from Colin Reid and his team) are to be applauded and held up as an example to others.

FROM G.A. CIRCULAR No. 882 OCTOBER 1990.

Sunday 28th October 1990. Field Excursion to new Black Country Sites.
Leaders: John Powell, Brian Glover, Colin Waters of the British
Geological Survey.

A large group turned out to get a privileged glimpse of the new geological findings in our home territory of the Black Country. The objective of the field excursion was to examine rocks of the Upper Coal measures sequences, that is, Westphalian C or Etruria (Old Hill) Marl formation. This being the series of rocks deposited after the swamp forests of the Middle Productive Coal Measures.

The morning excursion examined exposures in the quarry faces of Ibstock Brick Quarry, Stallings Lane, Kingswinford. The geology here was dominated by red marls and shales typical of the Etruria Formation which make it a valuable resource for brick making. "Espley" conglomerates and sandstones were occasionally present. The base of the quarry has yielded the Charles Marine band which indicates that this quarry is in the basal part of the Etruria formation.

The "espley" sandstones occur as channels cutting into the Marls. Their green colour was given by pebbles of chloritised volcanics. One of the channels was examined in detail and was seen to be capped by a fossil soil horizon (palaeosol)(gleysol) with concretions representing the roots of plants which once grew on the channel top (Rhizoconcretions). A number of fossil tree-trunks were present in life positions. Their upper parts had been cut off by an overlying channel showing that part of the sequence was deposited as a series of channels stacked one upon another. Low angle cross bedding was seen suggesting that the upper channels were of a low energy meandering type.

A brief visit to a local public house allowed the group to relax and socialise and was followed by the afternoon excursion to the Redland Brick Quarry at Smithy Lane, Tansey Green, Kingswinford.

The rocks of this quarry were a similar sequence of Marls and channel sandstone with fossil soils of a ferralic palaeosol type suggesting a better drained more oxidised environment. Possibly the most significant features displayed in this quarry however were the clear volcanic deposits, volcanic veins and beautifully preserved conifer stems. Beds of volcanic ash with "bombs" and vent agglomerates were clearly exposed. This evidence represents the first clear evidence of extrusive volcanic activity in the Dudley area and also dates the igneous activity of the Carboniferous to be of Etruria times (at least in part). The beds of ash contained a number of features including some surge folds and delicate preservation of conifer stems. The conifers were preserved by a gentle rain of ash and their upper parts cut off by a surge of ash, perhaps as a glowing cloud eruption. Breccia veins (volcanic) contained fragments of all underlying formations including coal. The B.G.S. found a slab within a vein which contained marine bivalves. The conifers were said to be some of the earliest known and of the best preserved with even the xylem intact.

This was a super field trip, where many of us familiar with the geology of the area learned how little we know and how much more there is still to discover. Our thanks go to John, Brian and Colin for the day.

GRAHAM WORTON

Monday 14th January. Lecture: "Britain Underground"
By John Smith, Dudley Cave Rescue Team

John Smith has a wide experience of caves and caving and he is also a keen photographer, so his lecture was illustrated by many magnificent photographs.

To start with, he outlined the way caves are formed - they are virtually always in limestone strata and they need groundwater percolating through to dissolve the rock. Although rainwater collects some carbon dioxide on its way down through the atmosphere, and this forms a weak acid that attacks limestone, normally this process is relatively slow.

But if the rainwater passes through a peat layer, with its high acidic content, this makes the groundwater much more aggressive, and this is the normal condition for cave formation.

Caves are excavated by exploiting weaknesses in the strata, along bedding planes (horizontal) and joints and master-joints (vertical). Where there are faults in the rock, which can be at any angle, groundwater will attack along the fault plane.

There are two main types of cave and channel formation underground:

PHREATIC - which occurs when the rock is below the water-table and is therefore saturated by groundwater. This condition makes channels which are circular in cross section, like a tube.

VADOSE - when the rock is above the water-table and is therefore dry, with groundwater running through the cracks and fissures. This results in stream erosion in the bottom of each channel, cutting vertically down.

A common situation in cave systems is for the formation originally to have been in phreatic conditions, forming tubes, and then for the water-table to have fallen so that vadose conditions took over and erosion continued vertically downwards. The result is the "keyhole" section typical of many cave passages.

John Smith then showed many of his own slides illustrating caves throughout Britain. These showed a range of cave features including stalactites and stalagmites, columns when these had joined together, and spectacular curtains where limey water had percolated along a fissure.

The photos also showed some of the cave geology, in particular indicating where caves had been developed along joints or bedding planes, and where the presence of a fault had led to erosion along the line of weakness. Scallop shapes on the cave sides, corresponding to the ripple marks found in geological strata, indicate that there were rapid water currents at some time during cave formation, and the direction of flow could be deduced.

Most British caves were formed in the period from 2 million years to 100,000 years ago, so some were also affected by ice age glaciation. In particular, much glacial debris is found in some caves, and this often causes problems to cavers trying to follow their routes.

Among John Smith's photos, of special interest was the Ogof Ffynnon Ddu cave systems in the Carboniferous Limestone of South Wales. This system is known to extend for over 40 kilometres, plus an unknown further distance still to be traced. A limestone quarry is working close to the system entrance, and there is something of a battle going on between the two interests.

There were photos of Yorkshire caves, Wookey Hole in Somerset, Eldon Hole in Derbyshire and Porth-yr-ogof in South Wales, included in a BCGS field meeting in 1988. But his favourite was clearly the Otter cave system near Chepstow, which has a special challenge because the water inside is tidal, so cavers must watch the tides as well as the rainfall.

Finally when we thought all slides had been shown, John found another box. This was of man-made caves and featured our own Wren's Nest! Also there were many shots of the mines at Box near Bath, where the Oolite was buried as Bath stone, for use as a building stone for the many beautiful buildings in the city.

This lecture was enjoyed by a large audience, though several members indicated that they had not been persuaded to follow John down one of his wet and dark holes!

B.C.G.S. NEWS

1. DUDLEY CANAL TUNNEL TO BE RE-OPENED

(an extract from British Waterways News Release, Jan 30th 1991)

Work will begin in two week's time on the main part of a £1 million scheme to reconstruct and restore Dudley's historic 200 year old canal tunnel and reopen it to pleasure traffic.

Today, British Waterways Midlands Region announced that the firm of Fairclough Civil Engineering Ltd of Egham Surrey, had been awarded the £700,000 main contract for the work, which is expected to be completed by November.

Although the Dudley Canal Trust have continued to operate their trip boats through part of the tunnel into the limestone caverns from the Black Country Museum, the remainder of the tunnel has been closed to navigation since November 1981, when a 130 metre length of the tunnel's lining near Park Head, Netherton, began to collapse.

Total collapse of this section of the tunnel was prevented by emergency action by British Waterways who installed extensive shoring.

Dudley Tunnel - when reopened it will be the longest navigable canal tunnel in the UK - consists of two short lengths leading to the main one, 2657 metres long. Some repairs to the short tunnels and part of the main tunnel were funded by Dudley Metropolitan Borough and Dudley Canal Trust and carried out two years ago. In early 1989, exploratory work was carried out to establish the size of the problem in the failed section of tunnel and this, together with earlier studies, enabled British waterways to put forward a scheme to save the tunnel from the permanent closure.

The reconstruction works are being carried out in an area known as the "Goal", where distorted brick lining and mining subsidence have resulted in restrictions which mean that some pleasure cruisers could not travel through the tunnel.

Included in the work to be carried out by the contractors will be the removal of those sections to give more headroom. They will also remove 130 metres of badly distorted brick lining though still retaining the shape of the original tunnel.

The whole of the design work and contract management will be carried out by British Waterways' Central Engineering Department's Gloucester Office.

When the tunnel is re-opened, boats will again be able to use the tunnel between Netherton and Tipton - saving a several hour detour from Park Head through Netherton Tunnel to reach Tipton.

Because the tunnel has only one air shaft, boats will not be allowed to use their own engines. To avoid any danger from fumes, "trains" of boats will be pulled through at regular intervals by a dual diesel electric tug.

2. Welcome to recent new members

Paul Duffy, Wordsley
Stuart Homer, Aldridge
John A.G. Jones, Great Barr
Amir Kanawar, Walsall
Julie Morris, Newport, Salop
Robert Smallshire, Cradley Heath

3. Medway Mineral and Fossil Fair

Upstairs Community Hall, Hempstead Valley Shopping Centre,
Gillingham, Kent. Saturday 29th June, 10am - 5pm.
Minerals - fossils - gemstones - jewellery - books etc.

4. University of Wales, Extra Mural Dept.

Geology and Scenery of South-east Wales. 6-13th July 1991. Based
at Cardiff £250.

Details from: Dept of Extra Studies, University of Wales, College
of Cardiff, 38 Park Place, Cardiff CF1 3BB.
phone: Cardiff (0222) 874832.

5. EDITOR WANTED

We are still in need of someone to edit this newsletter. If anyone
is willing to undertake this - not very onerous - task, would they
contact the Secretary.

Secretary

Paul Shilston, 16 St. Nicolas Gardens, Kings Norton,
Birmingham B38 8TW Tel: 021 459 3603

BLACK COUNTRY GEOLOGICAL SOCIETY.

WEEKEND FIELD MEETING TO NORTH DEVON.

14-16th June 1991 Based at Barnstaple.

Organised jointly with University of London, Centre for Extra-Mural Studies.
Leader: Michael Bamlett - Birkbeck College, University of London.

This weekend field meeting will give an opportunity to look at the geology of a beautiful stretch of the Devon coast, well-known to holidaymakers.

The weekend will be spent examining coastal and coastal-zone rocks and scenery between Westward Ho! and Baggy Point, with possibly a bit of Exmoor. The area comprises rocks of Carboniferous and Devonian ages, with a predominance of sedimentary and structural interest, close to the northern margin of the Variscan (= Hercynian) front.

There will be a briefing meeting on the Friday evening (14th June) followed by a full day on Saturday. The weekend will conclude after lunch on Sunday.

ACCOMMODATION.

There is a range of hotels, guest houses and B & B addresses in Barnstaple. There is also a Youth Hostel at Instow, about 5 miles from Barnstaple.

If requested, Judith Shilston will help in arranging accommodation.

FEE.

Members of the BCGS can join this weekend meeting, Friday evening to Sunday afternoon, at the reduced fee of £20.00 (accommodation not included).

If any members wish to join the group on Thursday evening (13th June), a whole extra day on the Friday can be spent with the leader at the small extra fee of £5.

BOOKING SLIP. WEEKEND FIELD MEETING TO NORTH DEVON. 14-16th June 1991.

Fee (not including accommodation) £20.00 Supplement for whole day Friday £5.00

Please book.....places on the field weekend.

Cheque for £.....enclosed, payable to "BIRKBECK COLLEGE" and crossed A/C Payee.

Name..... Phone.....

Address.....

ACCOMMODATION - please tick ONE of the following boxes :

- I/we will make my/our own arrangements.
- I/we will stay at the Youth Hostel.
- I/we would like to stay at a guest house with other BCGS members (Judith will arrange this if there is a demand).

Please return to :

Judith Shilston, 16 St. Nicolas Gardens, Kings Norton, Birmingham B38 8TW.