



The
Black
Country
Geological
Society

NEWSLETTER NO. 90 DECEMBER 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

MONDAY 2ND DECEMBER

Lecture: Gold deposits of Southern Africa by Malcolm Callow.

The lecture will describe the pre-Cambrian gold deposits in southern Africa, and their importance for gold mining. It will also cover the greenstone belts and other sedimentary deposits.

Malcolm Callow, who is a member of this Society, studied geology at London University, taking his MSc in structural geology and rock mechanics. This was followed by several years in South Africa - with the Geological Survey, then at the University of Witwatersrand carrying out research on gold mining, and finally as lecturer at the Vaal Triangle Technikon.

WEDNESDAY/THURSDAY 4-5TH DECEMBER

Geological Curators Group AGM and Conference in Dudley. This will be an event for geological museum curators from all over Britain.

With this conference there will be a seminar entitled "Mining the heritage seam, a case study: promoting and conserving the geological and industrial legacy of the Black Country". This seminar, which is open to interested parties, will highlight the recent changes and look at some of the exciting new developments planned as Dudley's geological collection approaches its 150th anniversary. The meeting includes field trips including a mine experience "Into the Thick" and a narrow boat trip into the limestone caves.

Details from Colin Reid, Dudley Museum and Art Gallery, St. James's Road, Dudley DY1 1HU. Tel: Dudley (0384) 453574.

SATURDAY 7TH DECEMBER

5th Annual Rock 'n' Fossil Roadshow
Held at Dudley Museum & Art Gallery, St. James's Road, Dudley. 10.30am-5.00pm

This is an event for everyone. There will be stands and demonstrations by the British Geological Survey, ("Computer Mapping the Rocks of the Black Country"), by English Nature ("Conserving Britain's Geological

Chairman
A. Cutler B.Sc., M.C.A.M.,
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Hon. Secretary
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F.I.E.E., M.I. Mech.E.

Heritage") and by local companies and societies. Also a "bring your own specimens for identification" stand and other displays.

The film "Journey Into Time" will be shown at 11.00am and 3.00pm

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.

William Jerome Harrison was an important figure in Midlands geology, a friend of Professor Lapworth and other eminent Victorian geologists. His name was given to Lake Harrison, the glacial lake which formed during the ice age and covered a wide area of the Midlands, being some 50 miles across.

He was also an enthusiastic photographer, and Birmingham Library has some 600 of his negatives. He arranged to take his holidays near good geological sites - Dorset, Yorkshire coast - so while his family played on the beach he went off with his plate camera.

Peter James, the lecturer, has selected some of Harrison's best geological photos. He will outline Harrison's work and methods, and describe the geological interest. It will make an unusual and interesting evening.

Peter James not only located the collection of Harrison's negatives held in Birmingham, but also started a countrywide search for a national collection of some 9000 other negatives that was believed to exist. As a result of his initiative, this major collection of photographs was found, unrecognised, in a box at Southampton University; it has now been transferred to the Geological Survey archives, and forms a unique record of British geology.

FRIDAY 17TH JANUARY - 150TH ANNIVERSARY

This date marks the 150th anniversary of the Dudley and Midland Geological Society. The BCGS will be marking this event during 1992 - watch this space.

MONDAY 24TH FEBRUARY

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

Mount St. Helens blew its top on 18th May 1980. Paul was there in the summer of 1990 - ten years later - and will describe the history of the volcano over that period, together with other geological features in the Cascade Mountains of Oregon and Washington states. These include Lassen Volcanic National Park, Crater Lake, Mount Rainier and Newberry Crater.

MONDAY 23RD MARCH

Lecture: "Geology and the nuclear industry" by Nigel Monckton, UK Nirex Ltd.

UK Nirex Ltd are responsible for developing disposal facilities for certain categories of solid radioactive waste arising in the next few decades. The proposed disposal method is emplacement in cavities excavated in suitable geological strata at a depth of 200-1000 metres.

The lecture will outline the sources and quantities of wastes arising before discussing the research being carried out into radioactive waste disposal.

This work includes the development of mathematical models to predict the future behaviour of the disposal site, together with geological and laboratory studies to obtain data in support of these models.

SATURDAY & SUNDAY 4TH & 5TH APRIL

Local History Fair at Dudley Town Hall. 10.00am to 5.00pm.

APRIL - lecture to be announced

SUNDAY 17TH MAY

Field Meeting to Leckhampton Quarry, near Cheltenham.

Leader: Dr. Chris Sands.

Meet 11.00am at the car park at Leckhampton Quarry (grid ref: 949186). This is about 2 miles south of Cheltenham, off the B4070 road from Cheltenham to the "Air Balloon" and Birdlip.

EDITORIAL

There's always something to celebrate with the Black Country Geological Society. The Geological Curators' Group have asked to hold their A.G.M. and Conference at Dudley this year and the programme arranged demonstrates how much the area, energetically promoted by Colin Reid, has to offer the public.

Next year should be another memorable year for us. 1992 marks the 150th anniversary of the Dudley and Midland Geological Society and our programme is to have a historical flavour. Picture the energy and enthusiasm of the gentlemen and ladies of 1842 who met at 12 noon on the 7th June to hear a lecture on the igneous rocks of the South Staffordshire coalfield, ate a cold collation at the Dudley Arms and then visited the Rowley Hills to inspect the quarrying operations. Alas, we have no record of their cold collation or description of their dress or transport.

We aim to recreate items from their programme in 1992 including visits to Rowley Regis and Shropshire, a boat trip with geological commentary through the soon-to-be-opened Dudley canal, a lecture on Silurian Geology and a major geological exhibition in Dudley Town Hall in November.

Sadly, to my knowledge, our membership no longer includes one, let alone thirteen peers, but we, like them, have been well served by eminent geologists.

No doubt the Treasurer will veto my suggestion that, in celebration, our annual subscription, like theirs, should be set at one guinea. However, I think our programme is sufficiently enticing to encourage people to renew their subscriptions at the prevailing rates.

REPORTS

Field Trip to Chipping Norton and Charlbury Areas, Sunday 22 September 1991

A slight coolness in the morning air and an abundance of blackberries told of the closeness of autumn, but members who assembled at Cross Hands on 22 September were to be favoured with a fine day for an examination of Middle Jurassic rocks near Chipping Norton.

The leader was John Crossling of the Warwickshire Museum, Warwick. Formally, John's bailiwick ends at Cross Hands, which marks the southern extremity of the county, but he appeared to have the necessary visa to take us on to Charlbury in the afternoon, deep in Oxfordshire.

Cross Hands Quarry is cut in flat-lying bedded limestones belonging to the Bajocian time sub-division of the Jurassic System (about 170-175 million years old). Six or seven metres of stratigraphic thickness are exposed.

The oolitic grainstone texture and soft, warm colours of the rocks, cream to honey-gold with touches of ochre, already suggest an origin in shallow tropical seas; but the fossils to be found enhance this notion to the level of proof. They are most common in the lower 3 metre thick marly limestone unit known as the Clypeus Grit. One or two almost complete examples of the eponymous fossil (a large flat echinoid) were found, though broken fragments of it are plentiful. Rhynchonellid and Terebratulid brachiopods are abundant and well preserved, as are also a range of lamellibranch genera - some of which are preferentially preserved as internal casts rather than actual shells. Corals reinforce the interpretation of these rocks as deposits of a warm shallow sea, and sizeable pieces of fossil wood point to currents coming from adjoining land or islands. High-spired gastropods, serpulid worm tubes, numerous burrows and trails further emphasise the high level of biological activity that went on on the floor of this wave-stirred sea.

The Chipping Norton Limestone has better qualities as a building stone or for walling than the Clypeus Grit, which it overlies. It is about 3 metres thick, thickly bedded, vertically jointed, harder and less marly. In fossil content it is not as fruitful, while yielding a similar assemblage of marine benthic organisms and fossil wood.

After an absorbing couple of hours picking over the rock debris in Cross Hands Quarry, John Crossling conducted the party to the central pub in Charlbury some fifteen kilometres to the south-east, where many enjoyed an outdoor lunch in a sun-trap in the back yard. Older buildings of Charlbury are of mellow local stone, with several examples of Stonefield Slate roofing.

Charlbury Town Quarry is a one kilometre walk from the pub. The sequence there begins with the Chipping Norton Limestone, which is the lowest level at present being worked. It is about 6 metres thick, hard, sparsely fossiliferous, and displays large-scale current bedding, with inclined foresets spanning at least 4 metres gross in beds individually up to 1 metre in thickness. This shows that the oolite grains of which this limestone is made behaved exactly like sand at the time of deposition. A layer of crystalline gypsum a few centimetres thick marks the top of the formation, apparently representing a brief episode of evaporation or even dessication before normal marine conditions were re-established.

The overlying unit is in strong contrast: a soft, crumbly dark grey shale, barely 2 metres thick and known as the Sharpshill Formation. It is richly fossiliferous, containing innumerable small oysters, some smooth-shelled bivalves, echinoid fragments and specks of plant debris. Twenty-six kilometres north west of Charlbury the remains of an early Stegosaurian dinosaur have been found at approximately the same stratigraphic level.

Above the Sharpshill Formation follows a 1-2 metre thick unit of roughly bedded, light yellowish limestone containing decimetres-thick layers composed almost entirely of loose, broken oyster shells. Two fossils thought to be palatal teeth of sharks were found. This unit passes laterally a few kilometres away into the famous Stonefield Slate, although at Charlbury it is difficult to discern any of the platy splitting potential of the limestones so characteristic in the workings at Stonefield.

Uppermost in Charlbury Town Quarry comes the Taynton Limestone Formation which is a bedded, fossiliferous oolite showing current bedding and related sedimentary structures which may be infilled channels, or coalescing sets of foreset beds moving together from opposing directions. Some 4 to 5 metres of Taynton Limestone are exposed below the soil cover at the top of the quarry face.

Society members are indebted to John Crossling for his full and lucid account of what was to be seen and for a well organised enjoyable day in the field. It had the true taste of Cotswolds Jurassic at its best.

DAVID GOSSAGE

Field Excursion to examine the Upper Carboniferous Rocks of the Western part of the South Staffordshire Coalfield, Sunday 27th October 1991

Leaders: Dr. John Powell, Dr. Brian Glover, Dr. Colin Waters (British Geological Survey).

This trip would perhaps have been more aptly entitled "How to distinguish one red pebbly sandstone from another when you have limited outcrops and virtually no fossils whatsoever!", and is a testimony to the excellent work of the B.G.S. in this area.

The object of the day was to show how these "red beds" could be distinguished from each other and grouped into the following units:-

- The Kidderminster Formation
- The Bridgnorth Formation
- The Clent Formation
- The Enville Formation
- The Keele Formation

The day began at the site of the former Baggeridge Colliery (now Baggeridge Country Park) where we were shown how to "read the landscape" by noting features like valleys and small humps and bumps that "give-away" the faults and hard rocks which lie beneath.

The first stop was a small disused quarry in the Enville Formation in Baggeridge Country Park (GR SO 8913 9312). Here the rockface was composed of well-rounded pebbles of grey limestone and red and yellow chert (or silicified mudstones) in a coarse sandstone matrix. Poorly developed cross bedding suggested that the pebbles had been transported from the north. Dr. John Powell told of his discovery of a complete trilobite in a pebble in this Formation at West Bromwich. The trilobite was thought to have come from the Carboniferous limestones of the Skipton area, which must at this time have been uplifted. The presence of large pebbles and erosion surfaces indicated that these sediments were deposited in a high energy-flood type environment and the presence of calcite (cemented soil) deposits elsewhere in this Formation indicated an arid environment. We learned that the Enville Formation was 60-70% composed of mudstones but the conglomerates define it.

The next stop was to the north in Sedgley Hall Park (GR SO 912 940) to examine the Clent Formation in a small stream section. This horizon was seen to be much more sandy in nature, with "fish-eyes" (pale reduction spots) and bands of breccia. The breccias were quite different from the conglomerates of the Enville Formation as the casts were mainly volcanic rocks including felsites and rhyolites and were sub angular to angular in nature. These have been identified as Uriconian volcanics whose source is likely to be the Malverns are or north Worcestershire, indicating a clear change in the sedimentation.

A very pleasant lurch at the Glynne Arms "Crooked House", Himley, was followed by a visit to Wordsley Ridge. Here again the typical features of the Clent Formation were displayed in exposures in the valley. A climb to the higher land to the rear of Wordsley Hospital allowed a wide view across the open country beyond Wordsley and out to Ridge Hill. Again, we were encouraged to "read the landscape" and see how the sandstones of the Wordsley Ridge dipped away at about 23° to the south west and then rose again out of the landscape at Ridge Hill forming a wide downfold (The Stourbridge Syncline) in the landscape. The Western Boundary Fault made its presence felt by throwing down the Clent Formation in the valley below us against the prominent Wordsley Ridge composed of the Bridgnorth Sandstone and Kidderminster Conglomerate.

A closer inspection of the rocks of the ridge (GR SO 895 869) indicated that a well sorted, millet seed sandstone with very clear cross bedding formed the

ridge (Bridgnorth Sandstone) which was protected from the rigours of erosion by a crown of hard Kidderminster Conglomerate. The cross bedding indicated an easterly wind direction and was interpreted as a series of barchan type dunes which rapidly accumulated in a desert basin. These dunes range in size between 10 and 100m high.

The final stop of the day was at Clent Visitor Centre (SO 938 807) where a gloomy grey day defied spectacular views across the landscape. At this location the Keele Formation was examined in a tiny overgrown quarry (the uppermost Keele beds) which were brownish sandstone. The centre stands approximately on the boundary of the Keele and the Clent Formation and the Enville Formation is absent.

To close the day core from Wychbury Hill tunnel project was handed around and a glimpse into the future was provided with Dr. John Powell telling us of a new borehole project of the BGS in the Romsley area to examine the sequence of Upper Carboniferous rocks in much more detail.

Our thanks go to John, Colin and Brian for a fully enjoyable and informative day.

GRAHAM WORTON

ITEMS IN BRIEF

1. Geology Today

Geology Today is a lively magazine for amateur and professional geologists, with articles and shorter features on a wide range of geological topics.

Members of the BCGS are entitled to a 20% discount on the magazine subscription - for 1992 the subscription with discount is £19.60 covering six issues.

Details available from the Secretary (Paul Shilston) or from the publishers:
Blackwell Scientific Publications Ltd
Osney Mead, Oxford, OX2 0DT.
Telephone: 0865 791155

2. Earth Science Conservation Conferences

Details from - Chris Stevens, Head of Earth Science, English Nature,
Northminster House, Peterborough, PE1 1UA
Telephone: 0733 340345

(a) "Conserving our landscape; evolving landforms and Ice Age heritage". 14-17th May 1992 at Crewe. Registration required by 30 November 1991.

(b) "Conserving Britain's mineralogical heritage". 31 March-2 April 1992. Based at Manchester. Registration required by 3 Feb 1992.

3. University of Birmingham Courses

(a) Dawn of the Dinosaurs. 11th & 25th April 1992. The second meeting is held at Leicester Museum. Course fee £20. Advance booking essential.

(b) Weymouth Bay to Lulworth Cove - a classic geological section. Weekend 15-17 May 1992. Based at Weymouth.

Details from School of Continuing Studies, University of Birmingham, Edgbaston, Birmingham B15 2TT. Phone 021 414 5607.

4. H.M.S.O have produced a leaflet advertising their geology book. B.G.S. memoirs are available for areas from Falmouth to Greenock via the Northern Pennine orefields. However, our members are so well travelled they may require the Geology of Southern Peru or the Geochronology of the Sudan, though the fourth edition of the British Regional Geology of the Northern Highlands of Scotland will probably be of more general interest. A complete listing of B.G.S. books can be obtained free from HMSO Books, Dept B St Crispins, Duke Street, Norwich NR3 1PD.
5. It was good to see Eileen Bakewell at the field meeting on 22nd September. Eileen was a founder member and an early treasurer of the Society. It was a pity that, despite a large turnout, there were so few of her former friends to greet her. Now resident in Banbury we hope she will be able to attend meetings more often.
6. Commiserations to Steve Hughes on his car accident returning from the Chipping Norton field trip. We hope it will not be too long before his M.G. is back on the road.
7. Welcome to new members:
 - Lucy Burgess - Bewdley
 - Les Drinkwater - Oldswinford Hospital School
Geology Club
 - Mrs Patricia Hadley - Wombourne
 - Mrs Aileen Healey - Kidderminster
 - Martin Jackson - Wednesbury
 - Dr. Roy Thompson - Codsall

Editor

Kate Ashcroft
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Secretary

Paul Shilston
16 St. Nicolas Gardens
Kings Norton
Birmingham

BLACK COUNTRY GEOLOGICAL SOCIETY

NOTICE IS HEREBY GIVEN that the seventeenth annual general meeting will be held at 7.45pm on Monday 24th February 1992 at Saracens Head, Stone Street, Dudley.

A G E N D A.

1. Apologies for absence.
 2. Minutes of the AGM held on 25th February 1991.
 3. Statement of accounts and Treasurer's report.
 4. Chairman's annual report.
 5. Election of officers and committee.
 - (a) chairman.
 - (b) vice-chairman.
 - (c) secretary.
 - (d) treasurer.
 - (e) four committee members.
 - (f) hon.auditor.
 6. Any other business.
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NOMINATIONS for any of the posts of society officers or committee members should be sent to the Hon.Secretary or can be declared at the AGM.

SUBSCRIPTIONS 1992

Membership subscriptions WILL BECOME DUE on 1st January 1992 and should be paid at any meeting or to the Treasurer :

Mrs.J.Shilston
16 St.Nicolas Gardens
Kings Norton
Birmingham B38 8TW.

SUBSCRIPTION RATES ARE AS FOLLOWS :

Individual membership	£9	per annum.
Family membership	£12	per annum.
Full-time student	£2.50	per annum.
Associate/group membership	£25	per annum.