



# The Black Country Geological Society

## Forthcoming Meetings:

Indoor meetings are held at the Saracen's Head, Stone Street, Dudley. 7.30 p.m. for 8 p.m. start.

Those who would like lifts for field meetings, please contact John Easter (0384) 274916.

**Monday: 8th February: 'Canyons in Utah and Arizona'.** Illustrated talk by BCGS secretary Paul Shilston based on his recent geological holiday to the western U.S.A.

As well as having interesting geology, the canyons of the Colorado Plateau in the Western U.S.A. makes spectacular scenery. Paul Shilston's talk describing a geological trip last summer outlines the geology and includes photographs of the area's attractions. These include the Grand Canyon, Arches and Bridges National Park, Bryce and Zion canyons, the Petrified forest ... and not forgetting Monument Valley with its echoes of cowboy movies.

**Saturday: 12th March: A.G.M. and Chinese Dinosaur Exhibition,** the latter being at the National Museum of Wales. Coach will leave the Saracen's Head in Dudley at 9.00 a.m. Return - leaves Cardiff at 5.00 p.m. Cost Adult £5.25, students £3.95, child £1.25 + a small entry fee for the exhibition. Family and friends are welcome to this world-class exhibition. For the non-geologist there are plenty of attractions in Central Cardiff: excellent shopping centre, the restored Norman/Roman fort, docks, as well as other departments of the museum. Booking forms for A.G.M. and subscriptions and booking of exhibition trip are attached at the end of the newsletter.

**Sunday: 17th April: Field trip to the Abberley Hills:** in Worcestershire led by Dr. Peter Oliver, former vice chairman. The Abberley Hills are a Silurian Inlier involving Rodge Hill, Walsgrove Hill and Abberley Hill which form part of the extended Malvern Axis. Their main structural features are the overfold<sup>d</sup> anticline and reverse fault. Rocks of Wenlock and Ludlow age are exposed. Details of time and place of meeting will be included in the April newsletter.

**Sunday: 8th May: Field trip to attend the Open Day of the British Geological Survey,** based at Keyworth, Nottingham. A date not to be missed! Full details and travel arrangements in our next issue. Outline details were given in the October '87 issue.

**Monday: 16th or 23rd May (to be arranged).** Dr. David Vaughan of Aston University gives a lecture on Physical Resources.

**Sunday: 12th June: Field trip to Carsington reservoir,** an incidence of a dam collapsing, led by Dr. Aitken-Head of the B.G.S.

**Monday: 27th June: Evening field trip in the Stour-bridge area.**

Chairman  
Alan Cutler BSc M.CAM  
DipM MInstM

Hon. Treasurer  
Anne Harrison BSc MB  
ChB FFARCS

Hon. Secretary  
Paul Shilston MA CEng  
FIEE MIMechE

Field Secretary  
John Easter BSc

Monday: 11th July: Evening field trip to be arranged.

Monday: 19th September: 'Those Incredible Limestone Mountains of South China', illustrated talk by A.C. Waltham of Trent Polytechnic, Nottingham.

October: Field trip to Clee Hills. Joint meeting with Shropshire Geol. Society.

EDITORIAL:

It was very pleasing to hear of a fine turn-out to an excellent lecture on the Shropshire Mammoth last month.

Over the festive period I was in a position to make some observations from the other side of the channel. The interest in geology is no less strong than in this country although I doubt whether local geological societies are quite so active. Universities seem to take the lead in disseminating information to their local areas and provide opportunities for local amateur interest. They are only too willing, when approached, to open their doors to visitors. Dijon university in Burgundy is one example which allows visitors to view their extensive Jurassic fossil collection and will provide guided assistance. General interest has also led to the publication of an excellent series of field guides (U.K. authors and publishers take note) which I would well recommend to anyone contemplating visiting France. These are published by Masson of Paris and include over 20 regional guides plus a general 'Geology of France' edited in English. At around £15 they represent good value for (French) money! Accompanying these guides are maps on a 1:8,000 or the newer 1:50,000 scale. I include some further details later in this newsletter.

The general awareness of French people with regard to geology may stem from its widespread inclusion in 3rd year science courses in the Lycees. This contrasts with the U.K. where it remains a minority option. People also are well acquainted with their local resources - building stone, paving materials and other related products; something that I wouldn't say was true

here, despite the efforts of B.C.G.S.! In conclusion I have included some articles from the French press in our 'from the papers' section, one in which the local population became only too well aware of their regions geological peculiarities! Hope the strain of translation isn't 'trop fatigant.' A la prochaine.

September 14th, 1987. Talk by Professor Westbrook of Birmingham University on the Accretionary Processes in the Barbados Reef:

Professor Westbrook began his talk by using maps of results from different geophysical techniques. The first was of gravity anomalies over the Mid-Atlantic ridge and Caribbean. It showed the associated transform faults, and the strong anomaly related to the subduction zone in the Caribbean.

A geological terrain is a group of units of the same formation, such as fore-arc and back-arc basins, and accretionary complexes of the Caribbean. Panama is rising because of having a subduction zone on each side of it.

Gravity anomalies recorded from ships showed the island arc in the Mont Pelee area, and strong negative recordings at the junction of the Caribbean and Atlantic plates. The new Royal Research Ship "Charles Darwin" was used for these studies. Instruments can be towed, such as hydrophones in airgun studies, and two ships can be used in tandem to give a bigger spread of results.

At the decollement horizon, where sediments are scraped off, this wedge can be shown. The Moho can be seen, and also folds, thrusts, sea bed irregularities, and the Caribbean-Atlantic plate junction to a depth of 12 kilometres.

Side scan sonar gives sea bed details out to 30 km. on either side of the ship, and can pick out thrust ridges of the accretionary complex. If the angle is suitable, it can pick out the trend of transform faults, rather like light picks out archaeological crop marks.

Heat flow decreases with thickness, but high heat flow is shown at thrusts, where water is squeezed up as mud volcanoes. There are hundreds of mud volcanoes on the accretionary complex. A series of thrusts are rotated up, then overridden up ramps. Out of sequence thrusts go through the whole series of sediments, and maintain the stability of the accretionary complex. The Tobago Trough fore-arc basin is being re-

duced by the advancing accretionary prism. In Barbados the Eocene turbidites have mud diapirs rising through them, including oil and other hydrocarbons.

Total magnetic anomalies reflect polarity changes in the oceanic crust. The changes are parallel to the Mid-Atlantic Ridge, and are truncated by transform faults. The Lesser Antilles arc has no trench, because the system is so filled with sediments. This can be deduced by seismic refraction, and computing the densities from gravity anomalies. In the Orinoco delta, vast sediments have been deposited since the Miocene.

Barbados sits on the junction of the two plates, on a thrust surface rather like the Moine. Movement is possible because of the high pore pressure in the sediments below. Ash bands and planktonic rocks above could also be seen.

This most interesting and stimulating talk was followed by questions. Answers to these included that the Cayman trough is a tiny area of sea floor spreading, the whole Caribbean plate moves eastwards at about 2 cm. a year.

Sheila Pitts:

November 16th, 1987. Lecture by Dr. Reg Bradshaw of Bristol University. 'Geology and Philately:

Yes, there is a connection as we soon found out. There are over 2,000 stamps alone related to the oil industry. Some have views, some have cross sections and many are capable of being used for study, or learning - particularly those which are in a set showing the exploration and development of a geology related industry.

Dr. Bradshaw gave a good, humorous talk - which was instructive and enjoyable. He suggested that there were over 5,000 stamps of geological or geology related subjects. There is apparently a Geology Philately Club in U.S.A. He had been collecting such stamps for 15 years, but whilst many stamps were cheap, others stretched the pocket somewhat.

We were shown stamps related to the Pacific Ring of Fire, the mid-Atlantic ridge, Iceland and Surtsey, the Antarctic, the Ascension Islands, St. Helena and Tristan da Cunha. There were stamps of spectacular

volcanoes at the subduction zone, in places such as Kamchatka, Japan, the Philippines, New Zealand, Antarctica, Ecuador - mud plains, and Martinique - where people were killed, not by lava, but by the gasses emitted.

Slides of the Great Geyser in Iceland and the precipitation of salts and terraces of minerals in New Zealand, the West Indies and elsewhere proved attractive.

Other subjects covered included a group of slides showing the origin of diamonds; the erosion of rocks in the Himalayas, Austrian Alps, Czechoslovakia by glaciation; and of the Grand Canyon, Iceland and Rhodesia by fluvial action. The Karst region of South China even produced several stamps. There was a series of Russian stamps on geophysical techniques. Airborne, ground based, and seismic techniques were included and were directed to mineral resources.

For devotees of the Prof. Challenger series, there was a stamp depicting 'The Lost World', one of Sir Arthur Conan Doyle's adventure stories.

Some countries we found, commemorated their famous geologists - not so alas, the U.K. There were many more stamps, but your Editor's space is limited.

This is probably an inadequate report, however suffice it to say that the fact that three of us present had at another place heard Dr. Bradshaw talk on this subject, in no way dulled our enjoyment of an excellent and instructive evening. The meeting was Chaired by John Gollidge who gave the vote of thanks.

Douglas Warren:

B.C.G.S. News:

A letter from Stoke-on-Trent museum has thanked us for our newsletters which they will keep as an archive. B.C.G.S. sent them all newsletters from issue 1 in 1975.

Books, mineral specimens, etc.

1. Mineral specimens are available from D.D. and D. Wilson, Stone Science, Bryn Eglwys, Llanddyfnan, Llangefni, Anglesey, LL75 8UL. Tel: 0248 70310. They are found to be good and helpful. Mr. and Mrs. Wilson are both graduates of Geology and have recently returned from Morocco with a range of specimens.

2. New text - 'Prehistory' dealing with

developments in palaeontology from its origins. 219 pages, fully illustrated, published by Burke of 14 Beccles Rd., Norwich, Norfolk NR14 6JD. This looks a very well produced book and retails at £25.00 per copy.

3. A new magazine - 'Fossil Forum' devoted to the science of palaeontology. This should be of interest to all who are fossil enthusiasts. It is a quarterly with annual subscription costing £5. It is available from Palaeo-Enterprises Publications, 39 Drake Avenue, Torquay, Devon TQ2 6JU.

4. B.C.G.S. have received a book catalogue from E. S. Brill of Holland containing scientific works in many languages. Details from editor.

5. B.C.G.S. have a copy of the Geological Curators' Group leaflet RESCUE which details how to care for geological collections. Available from editor.

6. Guides Geologiques Regionaux, published by Masson S.A., 120, bd. Saint-Germain, 75280, Paris.

#### Courses for the Public:

1. Summer Academy '88 - courses at British Universities.  
The Geology of S.W. England at Exeter, Field Geology of N. Wales at Chester, Fossils at Sheffield, Natural History of the Gower at Swansea, the changing coast- coastal geomorphology at Swansea. Courses are for one week and cost £179 fully inclusive. Details from Summer Academy Office, School of Continuing Education, The University, Canterbury, Kent CT2 7NX.

2. University of Bristol,  
The Minoans and Santorini, 8-22nd Sept., 1988. Cost around £395. Details from editor or Dept. of Extra-Mural Studies, University of Bristol, Wills Memorial Building, Queens Road, Bristol BS8 1HR. Telephone 0272 303622/303624.

3. University of Nottingham.  
Geology tours 1988. Short holidays in N. Wales 6-8th May; S. Lake District 24-26th June; N. Devon and Cornwall 4-8th April; Brecon 7-9th October. Prices from £54 - £118.  
Foreign tours:-  
a) Volcanoes of Italy 21st Aug-1st Sept.

b) Geology and Wildlife in Kenya. 4th-20th December.

c) Iceland in 1989, 2 weeks.

Details from editor or Mrs. Sylvia Stephens, 14-22 Shakespeare Street, Nottingham, NG1 4FJ. Telephone: 0602 473022.

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#### From the Papers:

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BLACK COUNTRY GEOLOGICAL SOCIETY

Notice is hereby given that the thirteenth annual general meeting will be held on Saturday 12th March 1988 at NATIONAL MUSEUM OF WALES, CARDIFF.

A G E N D A

- 1. Apologies for absence.
2. Minutes of the AGM held on 16th March 1987
3. Statement of accounts and Treasurer's report.
4. Chairman's annual report.
5. Election of officers and committee.
(a) Chairman. (e) Field-secretary.
(b) Vice-chairman. (f) Four committee members.
(c) Hon. Secretary. (g) Hon. Auditor.
(d) Hon. Treasurer.
6. Any other business.

The retiring officers and committee are:

Table listing retiring officers: Chairman (A. Cutler), Vice-Chairman (J. Colledge), Hon. Secretary (P. D. Shilston), Hon. Treasurer (A. Sutcliffe), Field Secretary (J. W. Easter), Hon. Auditor (F. R. Grimes), and Committee members (S. R. Hughes, A. Rigby, G. Warton, one vacancy).

NOTICE

SINCE THE ANNUAL GENERAL MEETING IS NOT BEING HELD AT DUDLEY, AND SOME MEMBERS MAY NOT BE ABLE TO ATTEND -- ANY PROPOSALS FOR ELECTION AND ANY OTHER MATTERS OF COMMENT SHOULD BE GIVEN TO THE HON. SECRETARY BY 1st MARCH 1988.

SUBSCRIPTIONS 1988

Membership subscriptions are now due and should be paid at any meeting, or to the Hon. Treasurer:

A. Sutcliffe,
63 Riverside Drive,
Solihull, West Midlands B91 3HR.

SUBSCRIPTION RATES ARE AS FOLLOWS:

Table of subscription rates: Individual membership (£9 per annum), Family membership (£12 per annum), Student membership (£2.50 per annum), Associate/group membership (£25 per annum).

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BLACK COUNTRY GEOLOGICAL SOCIETY.

NAME ADDRESS

Telephone

I/We enclose for membership. DATE :-



Saturday 12th. March 1988

Visit to National Museum of Wales, for Members, Families and Friends.

The  
Black  
Country  
Geological  
Society

To see : Dinosaurs from China  
- a world-class exhibition.

Also available are the other departments of the Museum which is in the centre of Cardiff. Those not so interested in geology can visit the excellent shopping centre, restored Roman fort / Norman castle, Docks etc.

A coach will run from Stourbridge @ 8.30am and Dudley @ 9am. Other pickups could be arranged. We will leave Cardiff at 5pm, arriving back at 7.30pm.

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 insurance to the level which you feel appropriate.

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Booking Form

Please return to John Gollidge, at 62 Red Hill, Stourbridge.  
( tel. 396907 )  
or at any meeting.

Name

Tel. no.

Address

I wish to reserve seats on the coach as follows :-

..... adults @ £5.25 each;  
..... students @ £3.95 each;  
..... children @ £1.50 each. } non-members 50p extra.

(Cheques payable to Black Country Geological Society)

There is a separate entry fee to the exhibition.