



The Black Country Geological Society

NEWSLETTER No. 80

APRIL 1990

Meetings are held at The Saracen's Head, Stone Street, Dudley, 7.30pm for 8pm 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 insurance to the level which you feel appropriate. Schools and other bodies should arrange their own insurance as a matter of course.

FUTURE PROGRAMME

- (a) NO CHANGE TO MEETINGS 29 April, 11-13 May weekend (bookings still open) and 14 May.
- (b) JUNE - Evening field meeting cancelled due to delay in site works. Date to be arranged for later in the year.
- (c) SATURDAY JULY 21. Field meeting to Malvern Hills. Leader Dr David Bullard. Meet 10am at British Camp car park (grid ref: 762403) on the A449 Malvern - Ledbury road. Dr Bullard is an expert on Malvern geology and has written a geological guide to the area for the Nature Conservancy Council - "A Student's Guide to the Geology of the Malvern Hills". This is a joint meeting organised by our friends of Shropshire Geological Society.
- (d) SUNDAY 23 SEPTEMBER. Field meeting to Dovedale, Derbyshire. Leader Dr Paul Bridges of Derbyshire College of Higher Education. The meeting will visit the southern end of Dovedale, Thorpe Cloud and up to Milldale. It will study in particular clusters of carbonate mud-mounds of Lower Carboniferous Age formed in deepwater off the developing Derbyshire Platform and now exposed in Dovedale.
- (e) MONDAY 15 OCTOBER. Lecture: "Silurian RED beds - a geologist's view of the USSR" by Dr David Siviter of Leicester University.
- (f) Early NOVEMBER - Field meeting to Black Country sites led by the British Geological Survey team.
- (g) MONDAY 19 NOVEMBER. Lecture: "The Hornsleasow dinosaur excavation and sieving project" by Roger Vaughan of Bath Museum.
- (h) FRIDAY 30 NOVEMBER. 15th Anniversary Dinner with speaker at the University Centre, Birmingham University.
- (i) MONDAY 14 JANUARY 1991. Lecture: "Britain underground". Caves, caving and geology by John Smith, Dudley Rescue Team.
- (j) MONDAY 25 FEBRUARY. A.G.M. followed by a talk on the Hawaiian Islands "Geology in Paradise" by Paul Shilston.

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.

* EDITORIAL *

It has been my privilege to visit the site of geotechnical investigation on Wychbury Hill near Stourbridge, a locality well known to many members. The investigations are to determine and assess the difficulties and costs presented by the scheme to tunnel through the hill as part of the Western relief road for the East Midlands conurbation to link the Halesowen by-pass with the A54/M6 north of Wolverhampton.

The work is being done by Mandali Geotechnic, a subsidiary of Hi-point p.l.c.

Geologically, the tunnel will pass through difficult terrain with the fault zone of the Western Boundary fault, the Clent breccia, keel beds and the pebble beds of the Triassic. Investigations have proven the remarkable accuracy of the mapping of the geological survey I" sheet many years ago, a curving fault plane dipping steeply westwards with signs of considerable brecciation. A core taken whilst we were there showed Clent breccia overlying many keel beds at approximately 20m from the surface near the obelisk. Drilling difficulties were apparent as the Clent breccia provided a very fragmented core in great contrast to the keel beds. The tunnel should be no more than 2-300m long and is being assessed for minimal environmental damage, but being a six lane affair, it will certainly be visible! Monitoring of permeability and ground water depth will continue for many months. The public enquiry may well continue for many years!

My thanks to Mandali Geotechnic and the drilling engineers for a most interesting afternoon.

Finally, a reminder to all members that there are still some places on the weekend excursion to East Anglia. Please apply.

KENYA GEOLOGY AND WILDLIFE

An illustrated talk February 26
by Sheila Pitts, who was on a 16
day study tour in Kenya in Dec.
1988 with Nottingham University

"We began in Nairobi National Park with the animal orphanage, and a drive in our minivans around the park. The park and its animals come up to the city boundary. It was the first of

many thrills to see so many antelopes and gazelles, and to be subjected to the benign, tolerant gaze of giraffes. We spent the afternoon at Karen Blixen's house with her glorious view of the Ngong Hills on the edge of the Rift.

South to Amboseli on the Tanzanian border, we marvelled at how our drivers found their way across the lake flats, while we were still sorting out the mirages between us and Kilimanjaro. Our carpool faced this almost 20,000ft volcano, and we tiptoed over the damp grass at dawn to photograph its snowy peak and constantly changing necklaces of clouds.

More than 100 elephants were eating the grass of the nearby swamp, and they posed for us just as tolerantly as the giraffes. Cheetahs and lions were much more difficult to find and photograph. Birds were so colourful and abundant that even I saw nearly all the species in my Kenya bird book.

At the coast around Mombasa, we sweltered in the humid heat, especially when we went out in glass-bottomed boats over the living reef. This Indian Ocean reef is second only to Australia's Great Barrier, and the fish and corals were like a T.V. documentary.

After the wildlife came the Rift geology. The pleasant climate of the Nairobi highlands, climbing up the Kenya Dome to the Rift grows coffee, tea and various vegetable crops. Dropping several thousand feet, the arid Rift floor grows three huge volcanoes. Suswa is a double caldera, Longonot has a parasitic cone and Menengai has a forest-covered caldera floor. To either side of the Rift here, forty miles apart, listric fault blocks look like a text book diagram.

The freshwater lakes of Baringo and Naivasha have a vast and varied bird life. Hell's Gate Gorge, an old overflow from Naivasha at a higher level, is cut through

comendite lava. This riebeckite rhyolite forms perfect columnar joints, just like basalt, despite its opposite chemistry.

The other lakes are alkaline, and have the famous millions of pink flamingoes. Magadi, the lowest and hottest lake we visited, has the I.C.I. soda works, and some very strange Tilapia fish. After being roasted by the furnaces in the afternoon, dusk by the lake shore was a very pleasant place to end a far too brief stay in a lovely country.

To the questioner who asked me something about ocean rift lavas and Kenya lavas - I think I didn't grasp the question at the time. To the one who asked the chemical formula for sodium sesquicarbonate - it is $\text{Na}_2\text{CO}_3 \cdot 2(\text{NaHCO}_3)_3(\text{H}_2\text{O})$!

SARILA PITTS.

GEOLOGY AND MINERALOGY OF THE CALDBECK FIELDS IN CUMBRIA

A lecture by Dr R.J. King, curator of the John Moore Museum, Tewkesbury, March 26

Dr King began with a retrospective view of early geological and mineralogical investigation in the Caldbeck Fells with the role of amateur interest being prominent. Men of note were Sir Arthur Russell, Arthur Kingsbury and Wilbert Goodchild, the latter being the son of the director of the Scottish geological survey, and a medical man at Inverkeith. Dr King's own visits to the region go back to the 1930s, when collecting was more selective due to the need to use train and walking as means of transport!

A new photographic record of minerals from the region has been produced by Mick Cooper and Chris Stanley of the Natural History Museum, entitled "Geology and Mineralogy of the Caldbeck Fells" - this could become a classic.

We were then shown views of the rounded treeless topography of the Caldbeck Fells, Dr King lamenting the over-populated nature of the region today with access so much easier, and reflecting with pleasure the primitive farstead accommodation and welcome back in the 1930s.

Ordovician rocks dominate the area - Skiddaw slates, Borrowdale volcanics (rhyolite and tuffs) in a complex anticlinorium, Duggill shales and the Jarrook Fell igneous complex and the biotite granite with its very limited outcrop (392m yrs). The complex pre-dates the granite proven by aureole relations. Later lower carboniferous limestones rest unconformably but with little mineralisation. An overblanket of Pleistocene tills and gravels completes the scene.

The mineralisation occurred in a pulsation system from hot to cold - Caledonian high temperature wolfram and molybdenum and late Variscan lead, zinc, copper further north along mineralised faults striking NE - SW. These two pulses have interacted to produce a remarkable array of exotic minerals.

In Grainsgill, the main lodes trend N - S and mix with younger ones.

Harving's Lode towards Bowscale town produced the most exotic assemblage and the lodes parallel to Branly Gill produced good lead, zinc minerals. Jarrook mine, worked until recently, produced tungsten ore and during World War II was worked by Canadian sappers, but later couldn't compete with imported ore. A bewildering array of minerals occurred, including wolframite, apatite, gilbertite, molybdenite, joseite, bismuthinite, arsenic pyrite and many more. The quality of slides of these spectacular and colourful minerals was remarkable and impossible to describe in words. A full list of minerals is available from the editor and was kindly provided by Dr King. To underline in short showed the influence of boron, accompanying the greisen and its fluorine, one occurrence of cassiterite in contrast to its Cornish abundance.

A later influx of carbonate produced antlerite and other carbonates, many of which helped in beneficiation of the ore. This pseudomorphed wolfram to produce scheelite - a far better ore than wolfram - a remarkable blue under UV light, deeper with more molybdenum. Also, galena, chalcopyrite,

marcosite, nail head calcite, goethite and native gold occur.

Rarities include palygonite (Cu,Pb arsenate), duftite (Pb,Cu arsenate), wulferrite (Pb MoO₄) - its first occurrence in the UK, vanadinite (Pb,Cu vanadinate) and stolzite (Pb WO₄).

Further north Houghton mine was located in an equally rich area, producing problems with explosive-bearing 'collectors', the road now being impassable to motor vehicles. Pyromorphite (Pb,Cu, phosphate) is a rarity from here. Dr King outlined the origin of the rape of these fells from 1947 onwards, when exported spoil found abundant buyers and high prices in the USA. Plumbogumite, hemimorphite, smitsonite, scotlandite and cerussite occur here with numerous others.

Dr King concluded an extremely enjoyable and well presented talk with some comments on the present situation caused by unscrupulous dealers who have scoured the area. Today, park rangers prevent any digging, and the days of the 1930s seem centuries away. Many thanks to Dr King for his excellent lecture. Good hunting!

BOGS

1989 ANNUAL REPORT

Membership

It is very pleasing to report that the membership levels have continued to grow for the second year in succession. Growth has been recorded in both individual and family membership categories, and the end of year total of 75 is a record for the society.

The 1989 profile is as follows: 48 (40) individual members, 9 (5) pairs family members, 4 (4) junior student and 5 (6) associates.

Annual Programme

The annual programme organisation has continued as a committee responsibility, although the brunt

of the work has fallen upon Paul Shilston in addition to his normal duties. The success of the programme during the year can be judged by the noticeable increase in attendance levels at all meetings.

Eleven meetings were held during 1989; six lectures, four field meetings and one social event. Several members also attended a weekend visit to Slapton Ley Field Study Centre in South Devon in May. The programme was quite wide ranging in subject, and we were once again very well supported by eight guest speakers.

A social event returned to the programme for the first time for several years, and the attendance proved highly encouraging.

Conservation

Conservation activity changed down a gear during 1989, principally through constraints on members' time.

However, a concerted effort by Graham Horton and Peter Smith in the late autumn produced the necessary information to support the provisional designation of both second tier (SILC's) and third tier sites in Walsall, Sandwell and Wolverhampton for incorporation into the Black Country Nature Conservation Strategy which was being prepared by the Green Wildlife Group.

Members will be pleased that Bromsgrove road, Halesowen exposure of the Halesowen Formation, and Ketley Quarry, Kingswinford (Astraria vari/halesowen unconformity) have now been designated as new SSSI's.

Other Activities

The society was one of the sponsors of Murchison Symposium, an international conference on the Silurian held at Keele University 28 March - 10 April 1989, that year of course being the 150th anniversary of both publication of the 'Silurian System' and the British Association visit to Dudley. On the evening of 31st March the conference visited the Black Country Museum first to view a special exhibition of Dudley fossils and Murchison ephemera, followed by a canal trip into the Singing Cavern for the audio visual presentation together with a short paper about Murchison and Dudley. The society mounted a display and sales counter which were judged highly successful.

The society again exhibited at Dudley Museum Open Day on 21st October.

During the year, three members- Alan Cutler, Pete Oliver and Colin Reid - have been actively engaged in writing a new trail guide for Wren's Nest RNR. The draft has been through a lengthy revision process after consultations with many interested parties, but should go to press in the near future.

Dudley Museum issued a second geological leaflet entitled "Exploring the Past" in which the society is prominently mentioned.

Additional publicity was gained for the society's activities, in particular conservation, in the Birmingham Post in February. The story was picked up by BBC Radio Birmingham and the chairman was interviewed live on the Tony Butler breakfast show the following day.

The Newsletter has appeared particularly buoyant during the year and is a vital link between members, especially those who cannot attend meetings regularly. We record our gratitude to Andrew Rigby, Hilary Giltrap, Graham Worton, Steve Hughes for their collective efforts.

In Conclusion

The continued growth in membership is very pleasing, and it can only be hoped that current levels will be maintained.

An exciting programme again awaits our attention, and we can face the coming year with optimism. Our grateful thanks to officers and members whose contributions to the general running of the society make it all possible.

1989 TREASURER'S REPORT

A brief summary

1989 was a good year for the society's finances, due to an upsurge in membership and activities of three members producing an unexpected bonus. Subscription income has increased by £72.50. The use of building society accounts has produced £79.06 interest. The barbecue provided a small surplus and was well attended. Joint public liability insurance with Hampshire Geological Society has saved £25 per annum. The unexpected bonus came from the production of a new trail guide to Wren's Nest for the NCC who made a donation of £500, generously passed on to the authors Pete Oliver, Alan Cutler and Colin Reid. A worthwhile purpose is being sought for this money. No cost for photocopying due to generosity of local firms, and minimal costs for our speakers and field trip leaders who often give their services free of charge. The best way of showing our gratitude is in attendance at events as was the case in 1989. Stock of goods was reduced in value as some items are slow moving, and a more realistic appraisal of value was needed. The outturn for 1989 showed a surplus of £307.05 and with the £500 bonus, an overall gain of £807.05. Subscriptions for 1990 will remain as at present, but we do rely heavily on the free photocopying providing a substantial subsidy. Thanks also given to Geoff Hubbard who kindly audited our accounts free of charge.

A full copy of the treasurer's report can be obtained from the secretary.

A.R. for Juath Shilston

The existing officers and committee were re-elected and the auditor Geoff Hubbard was also re-elected and thanked for his services.

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British Lapidary and Mineral Dealers Association Gem and Mineral Fairs 1990

London - Holiday Inn, Swiss Cottage, 14-15 April (Oops! Too late for that, folks)

Bristol and West, Watershed Media Centre, Canon's Road, Bristol, 26-27 May.

Marrogate International, Crown Hotel, Marrogate, 20-21 August.

London International, Holiday Inn, Swiss Cottage, 20-21 October.

Rock and Mineral Fair (NSGGA)

Chatterley Whitfield Mining Museum, 28-29 April. Admission 30p, children free. Details from J.G. O'Dell, 27 Chapel Lane, Rote Heath, Stone-on-Trent. Tel: 0270 875133.

University of Sussex Day School

"How the World began" - recreating the past environment of the Sussex weald - flying reptiles, dinosaurs, dragonflies and all. Organised by Dr Jarzembowski, Principal Keeper of the Booth Museum of Natural History, who recently appeared on the BBC's "Nature" programme. May 19 at the Booth Museum, 194 Dyke Road, Brighton. Tel: 0273 552586. Cost £12.

Buxton Museum and Art Gallery

Wonders of the Peak District" - Geology, archaeology and history. Tuesdays - Fridays 9.30am-5.30pm, Saturdays 9.30am-5pm. Tel: Buxton 0298 24658.

New Text

'Geology in Shropshire' by Dr Peter Toghill. A/GCSE level £9.95 from Swan Hill Press, 101 Languon Road, Shrewsbury, Shropshire SY3 9ES. Tel: 0743 235651.

Post Sketchbook

Geological Society



Among the members attending the Black Country Geological Society meeting at the Saracen's Head, Dudley, were (from left): Mr Paul Shilston, secretary; Mrs Sheila Pitts; Dr Bob King, the curator of the John Moore Museum; and Mrs Judith Shilston, treasurer.



Also at the meeting were (from left) Mr Bob Fairclough, Mrs Sue Fairclough and Mr Graham Worton.

Museum speaker

The Black Country Geological Society: Dr R J King, curator of the John Moore Museum, Tewkesbury, was the guest speaker at the March meeting of the society. His lecture was "Geology and mineralogy of the Caldbeck Falls in Cumbria". Dr King was formerly with the national museum of Wales, and is a well-known authority on minerals.

MONDAY 21ST MAY

SPECIAL EVENING EVENT

Combined Visit to Black Country World Geochrom
and
Dudley Canal Trust, New Display
in the
Singing Cavern

These attractions were described by Colin Reid in the February Newsletter and both opened to the Public in March/April. Colin has kindly arranged a special private evening viewing for the society.

This will be a great opportunity to see these exciting new developments at first hand.

Meet at 7.00 pm. at Dudley Zoo Car Park

As a result of the special evening opening there will be a charge of £2.50 per person, which covers entrance to both venues.

Paul Shilston