



The Black Country Geological Society

NEWSLETTER No. 52 - August, 1985:

Editorial:

The committee members who organised the Tenth Anniversary Conversazione deserve very many thanks from the rest of us. So many members and guests were there that we feel there is absolutely no need to describe the events, exhibits, food and drink. I have certainly never enjoyed a party more, and greatly regretted having to leave early because of a clash of commitments.

I particularly enjoyed meeting founder members and distinguished guests, some of whom had travelled many miles to be there. We all suffered from insufficient time, unfinished conversations, and a desire for another similar occasion.

It was good to have a talk with Peter Oliver, my mentor and predecessor on the newsletter, who did so much to help to found the society. There is a letter in this issue recalling those happy evening classes which he held, from which it all began. He will understand my pleasure in this issue, because the topics for all the three main features were volunteered by their writers. And, yes, Peter, we will have another new writer in the next issue too!

Forthcoming Meetings:

Monday 16th September: (see inside)

19-21st September: (Thursday-Saturday)
Sixth meeting of the Geological Societies of the British Isles, at Birmingham University.

Sunday 6th October: (see inside)

Indoor Meetings are held at The Saracen's Head, Stone Street, Dudley - 7.30 p.m. for 8 p.m. start. Field Meetings from outside the Saracen's Head unless otherwise stated. Those who would like lifts for field meetings, please contact Nigel Bradley.

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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.

Programme 1985:

Monday 16th September: Talk by Professor Hawkes "Geology of the Midlands." He is Professor of Geology and Head of the Dept. of Geological Sciences at the University of Aston in Birmingham. Before coming to Aston, he held a number of overseas posts specialising in South American and Antarctic geology, but has since taken a keen interest in Midlands geology. This is an appropriate if not overdue subject for this Tenth Anniversary of the inaugural lecture, and one which will throw much light on the somewhat eventful geological history of our own region.

19-21st September: (front page)

Sunday 6th October: Joint meeting with Shropshire Geological Society. Meet outside Dudley Town Hall, St. James' Road, opposite the museum, at 10.30 a.m. Most of the day will be spent at Cotwall End, between Sedgley and The Straits, leaving cars at the Nature Centre (G.R. 9130 9295) The most interesting aspect of the area is its geological variety, some ten different series represented in an area about $1\frac{1}{2}$ miles long and $\frac{1}{2}$ mile wide. This variety is brought about by complex folding and faulting associated with the Western Boundary Fault of the South Staffs. Coalfield. To illustrate the geological succession exposures ranging from the Enville Beds (Permian-Carboniferous) to Sedgley (Aymestry) limestone will be explored. Time and weather permitting, a visit to Sedgley Beacon will be included, from which there is a fine view over the Black Country and neighbouring counties. Leader Alan Cutler.

Monday 11th November: "Geology and Soils." Lecture by Dr. Margaret Oliver. It is always pleasing when

members of the society are prepared to give a lecture, and especially so in the case of Margaret Oliver who was one of our original committee members. She decided, despite the rigours of being a wife and mother to return to university, to undertake research on the soils of the Wyre Forest, initially for an M.Sc. degree but later converted to a Ph.D.

There is more to soils than just weathered rock, as we shall hear in what promises to be an enlightening evening. For preliminary reading see Newsletters 28 and 29.

Sunday 17th November: Field trip to the Lickey Hills. Leader Dr. R. Hamblin.

Friday 6th December: A.G.M. of the Geological Curators' Group at Dudley Town Hall, hosted by B.C.G.S.

Monday 9th December: "The Eye of Faith in Geology." Talk by Dr. R. Bradshaw of Bristol University.

Friends of the Sedgwick Museum:

Open Day at the Sedgwick Museum, Cambridge. Saturday 5th October. Details from Paul Shilston.

21st January, 1985: "The Future of Coal."

The speaker was Mr. K. Vowles, who is manager of the Central Electricity Generating Board power station at Ironbridge.

Ironbridge is a large, modern, coal-fired, base load station, which takes about 14 hours to start up or close down. A hydro-electric station by contrast takes only three minutes. Ironbridge generates 1/30 of the country's electricity and to do this it burns 400 tons of coal per hour. The budget is £130 million per year, of which 86% goes on coal, and any day it is out of action costs £50,000. The miners' strike had little impact

Due to foresight, coal stocks were high, and the station received 60,000 tons of coal per week, almost as much as the 67,000 tons it usually burns. The main impact was the search for alternative fuels. NCB coal costs £40 per ton, but poor quality coal can be had for £10. The latter is made workable by mixing with residues of old car tyres. This technique saves money, which offsets the huge costs of keeping such large stocks.

Ironbridge produces one million kilowatts per hour. If all stations used coal, it would amount to six tons per person per year. Fuel usage in the U.K. is:- Oil 36%, coal 35%, gas 23%, nuclear 5%, hydroelectric 0.8%. It goes to consumers as follows:- domestic 36%, industrial 36%, commercial 21%, hospitals etc. 7%. The spread of domestic central heating and the decline of heavy industry means that the domestic share is rising. The coal burned at Ironbridge produces 20% ash. Powdered coal is blown through the burning chamber in less than one second. The steam raised passes through the turbine in about two seconds.

In 1972 coal constituted 62% of the fuel for electricity generation, but the oil crises of the 1970's have increased this to 81% in 1982. Nuclear fission also increased, from 8% to 13%. Gas and oil may level out in 15 years time, and decrease rapidly by 2025 A.D. Coal will last several centuries. After that we shall have to use nuclear fusion, solar, wind, or geothermal forms of energy. It is clear that coal will be of central importance, and the government sees it increasing slightly from the present 100 million tons per year. It may also become a chemical feedstock. Nuclear fission will still be important, and various developments were discussed. One ton of uranium is equivalent to 12,000 tons of coal, which means that the uranium fuel cost and fuel increases have very little effect. But increases

in coal prices produce electricity price increases of similar magnitude. In France, electricity prices are more stable because 60% is nuclear generated.

A discussion followed this interesting talk. One question was whether we needed more power stations (at £500 million each) or would the money be better spent on energy conservation. The use of waste heat is already practised, heating greenhouses and fishponds. Combined community heat and power schemes seem attractive but are fraught with very real difficulties. Burning rubbish is already practised, but requires special furnaces. Conventional burners are only 36% efficient and new designs might raise efficiency to 70%. The discussion could easily have continued, but we ran out of time. It was a very interesting evening, different from our usual topics. Now we need to visit the power station and then a coal mine or oil well, to see how these geological resources support our modern way of life.

John Gollege.

11th February, 1985: "Planetary Geology: Speaker Dr. R. Maddison of Keele University.

On a cold winter's evening some sixteen members braved the elements to attend a most interesting talk, beautifully illustrated by many slides.

Moon: The Moon shows evidence of faulting, plate movement, and of a tectonic grid system as mountain ranges end and then reappear miles away. As there is no water or atmosphere, craters, volcanoes and other features show no erosion.

Mercury; which has similarities to the earth and to the Moon, has craters, faults, mountains and lava flows. It is thought that Mercury was once much larger and that cracks and wrinkles on the surface are due to shrinkage.

Venus has a thick, opaque atmosphere composed mainly of carbon dioxide.

Radar pictures reveal active volcanoes, mountains and valleys, while photographs from the Venera spacecraft show sharp, angular rocks on the surface.

Mars, the red planet, which has a thin atmosphere, has polar icecaps, large volcanoes, valleys and canyons. Photographs from the Mariner spacecraft reveal great shield volcanoes, with calderas such as Mount Olympus and valleys such as Vallis Mangala, which bears every conceivable resemblance to a dried up river bed. There is some possible evidence of continental drift. Erosion patterns similar to those from glacial meltwater appear and it would seem there was once water on Mars, possibly oceans, but these have long since disappeared. Erosion and scouring due to immense sandstorms and winds, is also seen. Close up shots of the surface show red soil, as in Africa, rocks six inches long and volcanic bombs. Comparison was made between a slide of the surface of Mars and one taken in Iceland.

Mars has two moons, Phobos which is covered in craters and has crack marks on the surface, and Deimos which is cratered and has house size boulders. Jupiter: Made of gas and with a ring system, Jupiter has no surface in geological terms, but its moons are of some interest. Ganymede is a cratered snowball, as is Callisto, while Europa, also made of ice, must have been heated fairly recently as there are no craters on its surface, Io, which has no craters and is made mainly of sulphur and phosphorus, has active sulphur volcanoes and sulphur lava. One slide showed an actual eruption as the Voyager spacecraft went past.

Saturn: The most famous of the planets with a ring system is mainly composed of hydrogen in the form of ice. One of its moons, Titan, has a thick nitrogen atmosphere, but the

surface has not been seen. The other moons have craters, long faults, and cracks and scars which actually cut across craters.

Uranus and Neptune: Little is known of these two planets although a ring system around Neptune was recently discovered. Further information from the Voyager spacecraft is eagerly awaited. In conclusion Dr. Maddison pointed out that there are few recognisable craters on Earth because of continual erosion, and that the significant difference between Earth and the other planets was that water can exist as a solid, liquid or vapour on Earth. When water freezes it expands and floats allowing life in water to continue. The expansion of water on freezing also causes frost shattering of rocks, while liquid water continually erodes away the Earth's surface. The Earth is a living planet, and it is thought that Venus might be the same.

A lively discussion followed the talk.

Chris Jowitt:

Letter to the Editor:

Bracknell,
Berks.

Dear Sheila,

Please extend my belated congratulations to the BCGS and its hard working committee, on reaching its tenth anniversary in such fine fettle.

I am writing to apply for the BCGS award for the member with the worst record of attendance at meetings. I was at the inaugural meeting on the 3rd July, 1975, but I don't think I've attended another meeting since! My excuse is firstly being away at college taking my geology degree, then working for a few years in Libya, and finally moving to work and live in Berkshire. During the last ten years I have maintained my membership of the

society, partly to keep track of geological goings-on in my old stamping ground, but also from a desire to give some measure of support to an important part of the Black Country geological scene. Being born in Sedgley, my interest in things geological was first sparked around the age of ten by fossil collecting from the Aymestry Limestone on Sedgley Beacon. I quickly discovered the Wrens Nest was a far more profitable hunting ground, and recall many happy days there pulling my long suffering and fossil laden father up precipitous slopes. Later, at the High Arcal Grammar School with a fine view of the Wrens Nest across the playing fields, I was given the opportunity to take geology A-level. My A-level studies led me to enroll on the Birmingham University Extramural classes in British Stratigraphy at Dudley Technical College. These classes were led by Peter Oliver, and as early members of the society will know, were the foundation on which the BCGS was built.

I will never forget my first class at the "Tech", mainly because I hit the speed humps at the college entrance on my motorbike and flew through the air for some considerable distance. Fortunately I landed upright on two wheels to a ripple of applause from watching passers by. The twitching person at the class that evening was me!

During the course a group of us went to the Forest of Dean and the Wye Valley on a very enjoyable day's field trip. One person I particularly remember was Peter Parkes. He taught me a great deal about the Wrens Nest fossil faunas. My best wishes to you, Peter! I also recall another course member whose name escapes me. He was a keen bird watcher and I once visited

Walney Island and Leighton Moss bird reserves with him. Does anyone remember his name?

Now, working as a geologist in an office environment, I still regularly try to get into the field to study rocks and collect fossils. An American professor once told me that it was almost possible to reach Ph.D. level in geology at certain universities in the States without ever needing to go into the field. I hope that this was something of an exaggeration. Geology is first and foremost a field science, and I strongly believe that the best geologists are those who've seen the most rocks, ideally in situ.

I will try to keep my promise to Alan Cutler to write a "Letter from Bracknell" on a more regular basis for the newsletter, and I would like to extend my best wishes to anyone in the society who still remembers me.

Perhaps some of the society members would be interested in leaving the Black Country for a day and coming to explore some of my fossil localities. I would be pleased to show you around, either as a party or in smaller groups.

Yours sincerely,

Keith R. Allden:

Thank you very much, Keith. You will be glad to hear that we still have Peter Parkes. And I too was at those early classes - but somehow I must have missed the flying motor bike!

Sheila.

Dudley Limestone Workings - Progress Report Seven:

At the Dudley Sports Centre the trial infilling scheme is now well into the full scale injection of rock paste, after the usual teething and initial learning phases. As this is a trial, of course the learning will be carried through the whole of the contract, and embrace a wide range of issues. Amongst the foremost of these are the type, sources, preparation, transport,

consistency of the colliery shales suitable for injection, and the mixing, pumping, injection and distribution of the paste within the mine itself. Observations are being carefully made and recorded including the use of closed circuit television and video tape recorders, and the effect of the infilling on the stresses and strains on the overlying and adjacent strata is being measured.

As so often seems to happen by coincidence, a crown hole occurred in the adjacent cricket ground over the spring bank holiday weekend of the 25/26th of May. The hole at the surface was some ten metres deep. The crown hole was immediately fenced off and filled the following week. Further minor settlement has occurred since. The location of the crown hole is close to a faulted area running NW-SE across the Sports Centre, where over the years a number of crown holes have occurred. In view of this tendency and to comply with legal obligations, the Council has been obliged to close the Sports Centre to all persons, other than specialist personnel concerned with the workings. Whilst the Derelict Land Grant has been made available to examine urgently the south-east part of the Castlefields workings near the Birmingham Road and drilling work is now well advanced, there is no prospect of finance being made available to examine and treat the Sports Centre area for many years to come, if ever. The closure of the Sports Centre is therefore likely to be permanent, unless we can develop a practical and cheaper alternative to infilling. This will be one of the aspects to be examined in the various desk-top studies now being undertaken under derelict land grants with respect to the workings on Castle Hill, Mons Hill and Wrens Nes.

Alan J. R. Evans:

Welcome to New Member:

Jennifer Mills - Walsall.

Swanscombe National Nature Reserve:

On June 29th Fiftieth Anniversary celebrations were held at Barnfield Pit, near Dartford in Kent, the site where the Swanscombe skull was found. Geological sections have been cut, and other exhibitions show the type of life in the area a quarter of a million years ago. Flint tool making was demonstrated. Various experts in geology and archaeology were present to answer questions, including Magnus Magnussen, who unveiled a plaque.

Three Counties Holidays:

Newnham Bridge, Worcs. WR15 8LR.
Tel: 058-479-428.

This organisation specialises in holiday accommodation in the Welsh Borderland and Cotswold areas, on farms, houses or self catering. They have lists of details of the various rooms, prices, facilities, and local places of interest and festivals.

Losehill Hall Peak National Park Centre:

Caves of the Peak. 27-29th Sept.,
£49.00.

Geology, caving and canal boat trips included.

Apply to the Principal, Losehill Hall, Castleton, Derbs., S30 2WB.

Minerals, Rocks and Fossils.
8-10th November. £49.00.

Sutton College of Further Education,
Kate Ashcroft's Evening Classes:-
A-level geology - Tuesday evenings,
7-9 p.m.

O-level geology - Thursday evenings, 7-9 p.m.
Enrolment, 9th, 10th, 11th
September - day or evening.

Bilston Community College,
Westfield Road, Bilston,
Wolverhampton, WV14 6ER:

Geology O-level can be taken after one year, and geology A-level at the end of the second year.

The time of days or evenings involved will be decided according to the requirements of the students applying.

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