



The Black Country Geological Society

NEWSLETTER No. 56 - April, 1986:

Editorial:

The memorable tenth anniversary year concluded with Professor Hawkes lecture on the geology of the Midlands. Towards the end of this and in between the compliments, he slipped in a hint that he expected better of us with regard to the modern naming of the Triassic.

Without realising quite what a large job I had delegated, Kate was persuaded to accept the source material for summary. I am extremely grateful, and hope other members find her account as lucid as I did. She has separated it into two parts, and the local part will be in the next issue.

May I ask members to note the need to get themselves organised fairly quickly for the Llangollen field trip. Bookings are being handled by Nigel Bradley.

Forthcoming Meetings:

Sunday: 20th April. Field trip to South Shropshire.

Monday: 12th May. Talk: "Aspects of Trilobite Geology."

Indoor Meetings are held at the Saracen's Head, Stone Street, Dudley: 7.30 p.m. for 8 p.m. start. Field Meetings commence from outside the Saracen's Head unless otherwise stated. Those who would like lifts for field meetings, please contact Nigel Bradley (021-475-7978) or Graham Whorton (Dudley 213207).

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Field Secretary
N.G. Bradley

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 1986:

20th April, Sunday: Field trip to South Shropshire Orefield. Leader Mr. Stuart McNicol. Meet 10.30 a.m. at The Bog Field Studies Centre, grid ref. SO 355980. This is reached from the A448 two miles east of Shelve.

12th May, Monday: "Aspects of Trilobite Geology." Talk by Dr. A. Thomas of Aston University.

15th June, Sunday: Field trip to The Potteries, North Staffs. led by Dr. L. Boardman of the National Coal Board. Meet at 10.30 a.m. at Mow Cop Folly, grid ref SJ 857572.

25th June, Wednesday: Briefing meeting at Dept. of Extramural Studies, Winterbourne, Edgbaston Park Road, Birmingham, For:-

28th/29th June - Sat./Sun.

Weekend field trip to Llangollen, departing by minibus from the Geology Dept., Birmingham University, at 8.30 a.m. Cost £40 approx., including travel and one night in hotel. To visit Lower Palaeozoic fossils, slates, volcanics of the Berwyn anticline, Carboniferous rocks of Eglwseg, and drift geology in the Dee Valley. The leader is Dr. Derek Gobbett. Bookings, with a deposit of £11 must reach Nigel Bradley no later than April 25th. The balance is payable on the weekend.

7th September, Sunday: Field trip to Charnwood Forest, led by Dr. T. Pharaoh of the British Geological Survey. He is currently working on the concealed Pre-cambrian geology of the Midlands.

5th October, Sunday: Field trip to Staple Edge, Forest of Dean. Joint field trip with Shropshire Geological Society.

17th November, Monday: "Magmatic Processes at Mid-Ocean Ridges." Talk by Dr. Reg Bradshaw of Bristol University.

8th December, Monday: "New Zealand Geology and Scenery." Talk by Sheila Pitts, based on a five week tour of North and South Islands.

16th September, 1985: Geology of the Midlands: Talk by Professor D. D. Hawkes of Aston University.

On the tenth anniversary of the Society's inaugural lecture, Professor Hawkes began by complimenting us most sincerely on our active programme, conservation work, and the very impressive Conversazione. He then described the local geology in the context of the British Isles, pointing out that although exposures were often not dramatic, they were crucial to understanding the evolution of Britain. He discussed the solid geology, the river drainage, and the economic geology of the Upper Palaeozoic inliers in the Permo-Triassic sediments. These inliers include the coalfields, and often have faulted margins. Some contain small outcrops of Lower Palaeozoic as at Dudley, and Precambrian as at Charnwood.

Nearly the whole stratigraphic column is represented in the area. The Precambrian basement of the Midlands contains the first traces of life on Earth, such as Charnia. The Lower Palaeozoic is present especially in the Welsh Borders, and the Church Stretton Fault probably existed then, related to a plate margin and the Iapetus Ocean. The evidence for a Midlands land mass was then discussed, from the Church Stretton subduction zone and the type and thickness of sediments in a subsiding Welsh Basin, to the Caledonian orogeny and the Variscan orogeny with its shallow or continental sediments. The Old Red Sandstone facies is from eroded Caledonian material to the north, as shown by borehole evidence. In the Carboniferous there was again a marine invasion from the south over most of Britain except the Midland area, where there is no massive Carboniferous Limestone. In the Upper Carboniferous, continental material from the mountains to the south including Devon and Cornwall was transported to the

Midlands Coalfields.

After the Coal Measures were deposited, there was the major continental period of the Permo-Triassic. The Midlands area is very important at this time. The sediments are not of uniform thickness because of faulted basins. The old names for these sediments, such as Keuper and Bunter are no longer used. They have been replaced by the Penarth Group, Mercian Mudstones, and Sherwood Sandstones including the Kidderminster Group. Dune bedding at Bridgnorth is mainly fluviatile. The Mercian Mudstones include thick halites and gypsum of economic importance. The red colour of the Triassic has been thought to imply desert conditions, but most deserts are not red. It is probably a later diagenetic change.

Flooding in Jurassic times submerged the Midlands area. It became a platform sea, related to the Alpine-Himalayan belt to the south. Cretaceous sediments covered it but have been removed. By the Upper Tertiary, the country was approximately as now. It has been marginal to major orogenies, and finally it was glaciated.

A lively question time followed. This covered the considerable accuracy of Wills' geology, and the marine nature of the European Triassic. Research into Red Beds is continuing with regard to oil, rare minerals, and the nature of the redness itself.

This short account can do no justice to a very interesting evening. Professor Hawkes skillfully drew together all the strands of Midlands geology and its historical and economic importance. All the time this was aimed towards our society and we thank him most sincerely for his considerable interest and goodwill towards us.

Sheila Pitts:

Goodbye to the Bunter: Part One:

Professor Hawkes having reprimanded the Society for failing to use up-to-date nomenclature when describing the Triassic, Sheila asked would I write an article for the newsletter clarifying the subject. I agreed to undertake the task as a penance.

May I recommend to our members the Geological Society Special Report No. 13 "A Correlation of Triassic Rocks in the British Isles" 1980, which I will attempt to summarise.

The standard stratigraphic sequence of the Triassic occurs in Southern Europe and Asia in marine (Tethyan) facies. The divisions of the Triassic formerly used in Britain were based on nomenclature derived from continental German deposits, but new borehole and palynological results suggest that the former British "Keuper" cannot be correlated with the Keuper of Germany but includes the time equivalents of combined Upper Bunter, Muschelkalk and Lower and Middle Keuper of Germany. It is recommended that the terms "Bunter", "Keuper", and "Rhaetic" should be abandoned.

The Base of the Triassic System:

The base of the British Trias lies in fossiliferous rock. The horizon chosen in Germany and extended into the Durham and Yorkshire coasts is the base of the Brückelschiefer which overlies the highest Permian (Zechstein) evaporite. It is an arbitrary and lithostratigraphic definition.

The Base of the Jurassic is defined by the first appearance of the ammonites of the genus *Psiloceras*. (Thus the basal few metres of the Lias are now regarded as Triassic).

Chronostratigraphic Units within the Triassic.

It seems likely that all six Tethyan stages are represented in the British Isles and efforts to relate the British sequences to a standard stage succession based on ammonites of the Tethyan Triassic sequence will continue.

Correlating the British and Tethyan Provinces.

The British Trias is far from unfossiliferous but correlation is hampered by the absence of ammonites. Many alternative zonal schemes have been drawn up in different parts of the world using a variety of fossils.

Miospores are widespread in British and other Triassic sequences and are the principal means presently available for attempting direct correlations between British successions and the standard. The correlation is hampered by lack of palynological documentation of part of the standard sequence. Bivalves are used in correlating the late Triassic. Reptiles and ostracods have also been used but correlation of the British Isles with the standard is still far from satisfactory.

The New Nomenclature.

This proposes a three-fold division. In ascending order these are the Sherwood Sandstone Group, the Mercia Mudstone Group, and the Penarth Group. These divisions are based on lithology.

The Sherwood Sandstone Group.

It is a thick sequence of sandstones. Its base and top are diachronous. It consists dominantly of red, yellow and brown sandstones, commonly showing colour mottling.

Pebbles are scattered through much of the sequence in the Midlands and are locally concentrated at specific levels. Northwards pebbles become rarer and sandstones tend to become finer grained. The sequence is largely fluviatile but aeolian and marine conditions are represented.

(The Sherwood Sandstone Group broadly includes formations previously recorded as Bunter and the sandier, lower part of the Keuper).

Mercia Mudstone Group.

This group comprises formations predominantly argillaceous in character and corresponds essentially to the former Keuper Marl. The base is diachronous. The Group is dominantly of red mudstone and subordinate siltstone with thick halite in basinal areas.

The Penarth Group (formerly the Rhaetic and basal Lies).

This group is argillaceous, calcareous and locally arenaceous, and is of predominantly marine origin.

Kate Ashcroft:

Part Two - Triassic of the West Midlands - will be published in the next newsletter.

Letter to the Editor:

Dear Sheila,

May I first of all thank you for the unexpected and very much appreciated editorial comments in Newsletter No. 55. I have enjoyed my term on the committee and can heartily recommend anyone to give it a try, as the vacancies arise.

I feel a slight correction is in order. The editorial gave the impression that I am leaving the society. Well, nothing could be further from the truth. I am merely resigning, temporarily I hope, from the committee. I will not be appearing at meetings and field trips as regularly as before, but you will not be getting rid of me that easily!
All the best for 1986.

Peter Knight:

Thank you very much, Peter. I will pass on your thanks to Hilary - who kindly provided the information for the editorial. - Sheila.

Dudley Limestone Workings:

Progress Report:

Early in 1985 derelict land grants were received to carry out three desk top studies into the limestone problems associated with Castle Hill, Wrens Nest, (Seven Sisters) and Mons Hill. The consultants' technical reports on the last two are now available and, following their consideration by the Council, it is proposed to carry out the necessary analysis of the related issues based upon consideration of a reduced number of "treatment options", since certain options could be quickly ruled out on cost and safety grounds whilst offering no environmental or other advantages. It is planned to adopt a similar process with regard to Castle Hill, although the issue analysis stage is

likely to be more complex due to the existing land uses, and the impact of the tourism studies currently being undertaken by the Council. The Council has recently received detailed geotechnical reports on drill hole investigations in Castlefields Mine, in the Dudley Sports Centre and Guest Hospital areas. Further drill hole investigations are in hand at the Sports Centre prior to the design and implementation of infilling treatment measures near to Birmingham Road and to Tipton Rd. Drill hole investigations are also now being carried out on the south-east and north-west sides of Wrens Nest Hill, adjacent to built development.

A revised bid for derelict land grant funds for 1986/7 has recently been submitted by the Council to the Department of the Environment, which reflect the latest findings of investigatory work, more detailed analysis of programmes, etc. An annual allocation of £2 million per annum of derelict land grant funds is sought, based on proposals covering the period up to 1988/9 and the overall objective of having substantially dealt with the limestone problem by the year 2000.

This revised programme envisages general drill hole investigations in the Dudley Sports Centre area next financial year, with the aim of determining opportunities to bring back parts of the area to beneficial use at the earliest opportunity, taking advantage of any collapsed workings. Design, contract documentation and tendering procedures for the infilling of the area adjacent to Birmingham Road will follow completion of the current drill hole investigations, with contract works falling in 1987/8.

In addition, the revisions have taken into account the recent discovery of plans in the archives of the British Geological Survey which show previously unknown workings to the north of Castle Hill and Kettles Hill and

on the east side of the Zoo. It is proposed to carry out initial drill hole investigations next financial year.

The various reports on investigations and other works are available for public inspection at the offices of the Borough Engineer and the Borough Planner.

Alan J. R. Evans:

Annual General Meeting:
19th March, 1986:

Alan Cutler gave the Chairman's Report, summarising the year's events. The highlights were the Tenth Anniversary Conversazione, and Professor Hawkes' lecture. The Treasurer's Report centred on the fact that this year expenditure had exceeded income. Income was about the same as last year but expenditure had increased. Two non-recurring expenses were the Conversazione and the purchase of a projector and stand.

The guided walks had been a satisfactory source of income but this had vanished when they were no longer publicised by the Nature Conservancy Council. Consideration was given to the resumption of these walks, especially on Wrens Nest where there was now a Warden.

It was proposed that for 1987 the individual subscription would be raised from £6 to £9, and the Family one from £8 to £12. Others would be unchanged. This when compared with £3 in 1975 was in line with inflation, and would give the society a financial buffer for emergencies. This was put to the vote after the discussion of alternatives, and members clearly felt that this was a very reasonable course of action.

The election of officers followed. Changes were the Vice-Chairman, Field Secretary, and one Committee Member. Peter Oliver resigned as Vice-Chairman, and John Colledge was elected. Nigel Bradley resigned as Field Secretary and Graham Wharton was elected. Committee member Peter Knight resigned and Andrew Rigby was elected.

The meeting concluded with the film "The Earth, Our Inheritance."

Sheila Pitts:

Welcome to New Member:-

William Groves from Wombourne.

Natural History Museum, South Kensington:

Exhibition on Conservation.
30 exhibits. April 10th - May 7th. International Speakers.

National Needle Museum, Forge Mill, Needle Mill Lane, Redditch. Tel. 0527-62509.
The only remaining water driven needle mill in the world. Open daily April-October.

Twickenham Travel, 33 Notting Hill Gate, London W11 3JQ.
01-221-7278. Geological tour to Iceland. £699. July 31st. depart for fifteen days.

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