



NEWSLETTER No.29 - October 1981.

The Black Country Geological Society

Editorial

In October our society will for the first time act as host to another society. Our guests will be the Shropshire Geological Society. This society was formed in September 1979 and has aims very similar to our own, with lectures, field trips, and work in the conservation of sites of particular interest. Some of our members have visited Shropshire sites and know some of the many geological riches of the area. We look forward to introducing our guests to our own interesting and classical sites, and hope that other joint society meetings will follow this one.

PROGRAMME

October 5th. Meeting before field trip.

October 11th. Joint meeting with the Shropshire Geological Society to classic Black Country sites. Leaders Peter Oliver and Maitland Woods. Start 10 am.

November 7th. Saturday. Coach trip to the Geological Museum, South Kensington, London SW7. Leaves Allied Centre at 9.30 am. The free lecture on this day is on the minerals in the museum, at 2.30 pm. There are still some seats available (Anne Harrison, at £3 return for adults and £2 for children) and the coach will stop at West End points for those doing Christmas shopping.

Meetings are held at the Allied Centre, Green Man Entry, Tower Street, Dudley, behind the Malt Shovel pub. Indoor meetings will commence at 8pm. with coffee and biscuits from 7.15pm. Field meetings will commence from outside the Allied Centre.

Non-members welcome.

The society does not provide personal accident cover for members or visitors on field trips. You are strongly urged to take out your own personal accident insurance to the level which you feel appropriate. Schools and other bodies attending field trips should arrange their own insurance as a matter of course.

Chairman

*A. Cutler B.Sc., M.CAM.,
Dip.M., M.Inst.M.*

Vice Chairman

*P. G. Oliver B.Sc., Ph.D.,
F.G.S.*

Hon. Treasurer

*M. J. Woods B.Sc., M.Sc.,
M.I.Geol., F.G.S.*

Hon. Secretary

*P. D. Shilston M.A., C.Eng.,
F.I.E.E., M.I. Mech.E.*

Field Secretary

*Anne Harrison B.Sc., M.B.,
Ch.B., F.F.A.R.C.S.*

Future Programme.

November 7th. London coach trip. Many details are given in the last newsletter about the museum contents. Book with Anne Harrison, 67, Woodbourne, Norfolk Road, Edgbaston, Birmingham B15 3PJ. Tel. 021-454-6416.

November 20th. Friday. Social Evening. Canal trip through Dudley Tunnel by night. Appetites for the buffet supper may be increased by "legging" along the tunnel by those who wish, and their efforts will no doubt be appreciated by the less energetic members. Tickets £2.50 from Paul Shilston, 16, St. Nicholas Gardens, Kings Norton, Birmingham B38 8TW. Tel. 021-459-3603.

December 7th.

Lecture by Professor Hawkes of Aston University, on the geology of Antarctica.

Welcome to new members:-

Mr. Michael Simmons of Langley.
Miss Iva Zlamalova of Studley.

Dudley Evening Class.

Rob Ixer is again giving an evening class in Dudley Central Library this year, following the considerable success of the shorter one last year. This one is 20 meetings at 7 pm. on Wednesdays starting on October 7th. Fee £12.

The Origin of Mineral Deposits.

The course will describe many of the world's major deposits and show how recent advances in geochemistry, mineralogy and plate tectonics have contributed to views on ore genesis.

Summary of Research Project.

Part Two. by Margaret Oliver.

Preliminary Problems of Soil Classification on the Wyre Forest.

The Wyre Forest is the largest area of semi-natural woodland in the West Midlands and is of scientific interest because it is at the meeting point of a number of woodland types. Ninety per cent of the area studied was forested and over 80% of the woodland was deciduous, mainly of sessile oakwood type. The area had been woodland for most of its history. It was designated the Royal Forest of Wyre in 1461 when it was used for hunting and timber. In the sixteenth and seventeenth centuries there was much deforestation for timber and to increase the area of pasture, but it is unlikely that the forest was ever completely cleared. In the late seventeenth century conifers became dominant to provide for the Cleobury Mortimer iron industry with charcoal. By 1900 almost all the forest was coppiced oak. This has since declined and now coniferous plantations are increasing especially in the west. There was no detailed information about the soil in the area studied since it has not been surveyed by the Soil Survey. This enabled the study to be carried out without any preconceived ideas as to what type of soil to expect. The field work was carried out over a period of three months. Soil samples were collected at 201 locations, which were chosen by a random systematic sampling scheme to avoid personal bias in selecting sites. Soil surveyors tend to select sampling locations on the basis of judgement with the result that some areas may be oversampled and others undersampled. At each location a vertical face of soil was examined, with samples being taken and information recorded at 0-5 cms. 15-20 cms. and 40-45 cms.

Several soil properties were recorded at each level such as colour, degree and colour of mottling, % stones, type of stones, % sand, % clay, % silt, etc. In addition to soil characteristics, environmental characters such as slope angle, slope form, relief, vegetation, drainage, and underlying geology were recorded. The characteristics used were those generally recorded by the Soil Survey of England and Wales, the emphasis being on those characteristics which can be observed easily in the field with minimal equipment.

The results of the statistical analysis suggest that soil characteristics, % sand, clay and silt, are important in defining the nature of soil variation. A wide range of textural types are present, from those with a high percentage of clay at one extreme to those with a high percentage of sand at the other. The ordination graphs indicated a situation of continuous variation between individuals with no suggestion of the presence of well-defined natural groups in the data.

The groups produced by different methods of numerical classification and different sets of characteristics varied considerably. This resulted from the absence of well-defined groups and the population being arbitrarily subdivided. The non-hierarchical method of classification appeared to be the most successful in arbitrarily subdividing the population, yet traditional classifications have always favoured a hierarchical classification.

The classifications enabled an evaluation of soil-environmental relationships. In Soil Survey mapping great emphasis is placed on the relationship between soil and geology and relief. The results of this study suggest that such relationships are often weak and prediction of soil type on this basis is likely to be unsatisfactory.

The soil in this small area is very variable and varies over distances as short as 3m. The statistical techniques provided an objective framework for such a study and the results indicate that classification is not the only way of examining soil relationships especially under conditions of continuous variation.

The next phase of work will be concerned with examining the rate of soil variation. This will require a more dense sampling plan, probably along two or three 1km. long transects with sampling locations every 10 or 20m. A more precise examination of factors causing soil variation may also be possible.

Evening field trip, June 29th.

The Geology of Wordsley.

Leader - Alan Cutler.

This field meeting was very much an experiment to test members' reaction to a hunch of mine that summer evenings would be ideal for a leisurely style of geological walk. However, as the day approached I was more and more concerned about the weather and if there would be sufficient daylight to complete the trip. I need not have worried, as the

evening was the brightest and warmest of the summer so far.

We assembled at the Swan Inn, Brierley Hill Road, and walked the 100 yards or so to the road cutting where I think there is the finest section of Bunter Pebble Beds anywhere. These basement beds are strongly inclined against the Western Boundary Fault, and give rise to the marked feature of Ridge Hill. The summit of Ridge Hill was in fact our next destination, but we took the long route up the dip slope and were able to enjoy the view.

The Lower Mottled Sandstone in an old quarry beneath the pebble beds was our next stop. The beds were highly false bedded and are part of a small outcrop between the pebble beds and the western branch of the Boundary Fault.

Turning eastwards we followed a small stream, and crossing the Boundary Fault we inspected some trackside exposures of Enville Beds. These were of the breccia group, and were in marked contrast to the pebble beds seen earlier. We followed the stream through a pleasant partly wooded valley which boasts an extensive butterfly fauna and other interesting wildlife. About a quarter of a mile further on we crossed the eastern branch of the Boundary Fault, and inspected an outcrop of Etruria Marl adjacent to the site of the now closed Leasowes tip.

We finished the evening with a walk over the mounds of pit waste from the Old Bank coal pits and then returned to the Swan.

Everyone seemed particularly pleased with the way the

evening progressed, and comments confirmed that the experiment was a success.

A.C.

July 12th.

Visit to Chatterley Whitfield Mining Museum and to the Gladstone Pottery Museum.

In the morning we visited the Chatterley Whitfield Mining Museum near Tunstall, Stoke on Trent, and were each issued with a safety helmet and lamp before entering the cage to descend the 700 feet to the old working level. Our guide who was a retired miner explained safety precautions and showed us a stretcher and large first aid box. He explained the importance of ventilation to the working faces. This is achieved by the use of two vertical shafts, a "downcast" shaft bringing fresh air and an "upcast" shaft exhausting the foul air to the atmosphere. The flow through the appropriate galleries is controlled by doors to the various headings. The importance of keeping the workings free from water was also emphasised, and we were shown water being pumped into a reservoir 20 feet deep. There was a comprehensive system of communication by both telephone and tannoy, and equipment for the detection of methane gas.

All the galleries, called "roads" by the miners, were laid with tramway tracks. We saw where the ponies used to be stabled between their shifts of duty, which involved hauling wagons on the tracks. Nowadays in mines, diesel locomotives are used.

We were taken through several galleries which showed the historical stages in mining methods. First was one of the early bell pits, similar to those still seen in the Black Country.

Somewhat surprisingly one or two of the galleries had quite steep gradients, and care was needed to avoid hitting the roof while watching the uneven ground.

During our hour and a quarter underground we saw how mining had become more and more mechanised. Thanks to the issue of two metal tokens

each of us, one of which was given up on reaching the working level and the other on reaching the cage for the return trip to the surface, none of us was left behind underground!

We visited the steam winding engine in the nearby Hesketh Engine House. This huge machine is being lovingly restored to its former condition. It has been open to the public since March of this year, but it needs more to be done before it is in working condition again.

In the afternoon we visited the Gladstone Pottery Museum at Longton. This museum is contained within the former Gladstone Pottery. This was never associated with famous pottery names such as Spode and Wedgwood, but was nonetheless a typical unit of the industry in this area.

We went through the display of the history of the pottery industry, showing how it started in the area because of the local clay, but for a couple of centuries past china clay from Cornwall and ball clay from Devon has been used.

The display showed how certain leading potters such as Josiah Wedgwood were instrumental in creating the Trent and Mersey Canal to help bring in the clay, which was at that time brought by sea from the West Country via Liverpool. Finished products were exported by the same canal and sea routes.

Outside were the four bottle kilns, and we entered the interior of one to examine it in detail. Other galleries showed the processes of ceramics colour and decoration, and the engine house showed how the power was provided to drive the machinery for mixing clay. Many other galleries showed other processes.

Altogether it was a satisfying and informative day, and although not wholly geological, it had a strong geological background.

N.P.

Dudley Blackbrook Valley
Reclamation Project.

This is part of a Council of Europe plan for improving the quality of urban environments. A team representing local interests has been set up.

The valley is on the south side of Dudley, from Cinder Bank, Netherton, to Merry Hill, Quarry Bank. It includes Parkhead Locks on the Dudley Canal, the broadleaf woods of Saltwells, and Doulton's Claypit. There are many signs of past industrial activity, and a lot of wildlife and vegetation interest.

Much of the area is within the proposed enterprise zone, and a major aim of the project is to co-ordinate all the various interested parties and offer

advice to all. As well as the enterprise zone, major projects in the area include opencast coal extraction and service drainage schemes. Existing vegetation and wildlife will be surveyed and then monitored. Parts of the area have been used for waste disposal, and there are old mine shafts which will need capping. The B.C. G.S. and other societies interested in conservation have been consulted. There are several geological exposures in the area.

Items such as the Blackbrook Valley project appear in the press, and committee members would be pleased to receive cuttings of any items of local geological interest, as well as news of any temporary exposures.

Requests have been received for more details of the excellent courses run by Bristol University Extra-mural Dept. Application should be made to the Staff Tutor in Geology, Dept. of Extra-mural Studies, 32, Tyndalls Park Rd. Bristol BS8 1HR. The course number and title should be quoted.

Crystallography for Teachers.

B 81 H 12 SJ

Non-res. weekend, Sat. Sun.
Oct. 24 & 25. £4.80
Dept. of Geol. Queen's Building,
University Walk, Bristol.

Remote Sensing and Geology.

B 81 C12 SJ.
Nov. 28. £2.40.
Queen's Building, University Walk,
Bristol.

The Polarising Microscope.

W81 960 SJ. Feb. 5-7. £5.60.
plus fees for res. weekend at
Urchfont Manor, Devizes, Wilts.
Apply to Warden.

Transgressions at Chipping
Sodbury Quarry.

May 9th. £2.40. A81 C03 SJ.

Implications of Plate Tectonics
for the Evolution of Continents.

Part A, B81 C11 SJ. £2.40. Nov. 21.
Part B, B81 C14 SJ £2.40. Jan. 23.
Also at Queen's Building.

Metamorphic Rocks and the
Polarising Microscope.

B81 F19 SJ. Dec. 5 & 6. £4.80.
Queen's Building.

Geology of Dorset-Devon Coast.

Non-res. from Bridport.
D81 G01 SJ. £5.60. Oct. 30. -
Nov. 1st.

Fieldwork in Mendip Hills.

Res. 29-31 March. S81 951 SJ.
£6.40 plus accom.

Committee dates for the remainder
of the year:-

Conservation - Sept. 28th
 Nov. 23rd.
General - Nov. 9th.

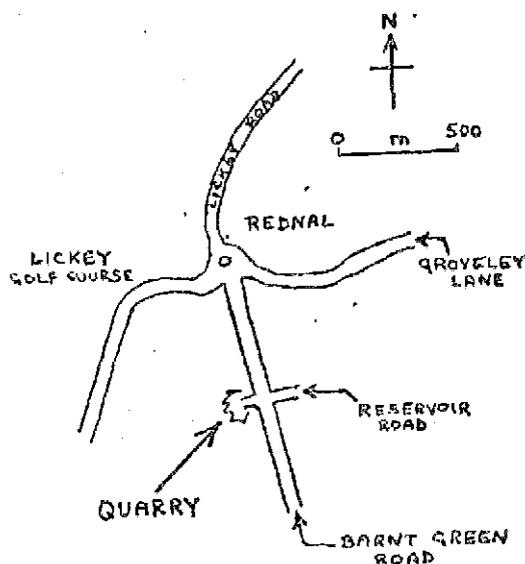
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LOCAL GEOLOGICAL SITES.

5. QUARRY at LICKEY HILLS.

Grid Ref: SP 001 755

Location: Off Barnt Green Road, Cofton Hackett. The quarry entrance is opposite Reservoir Road.



DESCRIPTION. The quarry, which is disused, is in the Lickey Quartzite, an unfossiliferous quartzite of Lower Cambrian age. Normally white, the quartzite in this exposure is of a pronounced pink colour probably due to material derived from neighbouring formations.

The quarry face shows signs of faulting and folding, and in the main part of the face there is a large overfold.