THE BLACK COUNTRY GEOLOGICAL SOCIETY

NEWSLETTER No. 18 - November 1979.

Editorial.

It is hoped that as many people as possible will come to the November social evening, and make it an even bigger success than before. Members are requested to make bookings with the Hon. Sec. if they have not already done so, and are reminded that transport can be arranged as required.

An additional meeting has been arranged for Nov. 24th at Birmingham Natural History Museum, and members will be conducted where the public are not normally allowed.

After this, Christmas festivities will be upon us. The Secretary now has a wide range of books and maps which would make good presents, within a wide price range. (see pages 5 & 6)

FUTURE PROGRAMME.

November 15th. Thursday. Social evening at the Fountain Inn, Clent. 7.30pm.

December 13th. "Mineralisation", lecture by Dr. Barnes of Swansea University. Dudley Museum.

January 10th. Informal meeting for next field trip. Dudley library.

January 13th. Introduction to Black Country geology, part one. Leader Alan Cutler. From Dudley library, 10. am.

February 7th. "Geological and political aspects of oil exploration and production". Lecture by Dr. Colin Phipps. Dudley Museum.

Indoor meetings at 7.45pm with coffee and biscuits at 7.15pm.

A welcome is extended to the following new members:-
Margaret Crocker---Kidderminster,
Anne Sutcliffe---Edgbaston.

May 18th-20th.

Weekend visit to Dorset.

For many people the highlight of the society's year is the weekend field trip. The 1979 visit set a standard which will be very hard to maintain.

Nineteen members assembled at the Hotel Norfolk, Weymouth on Friday evening and awoke to a magnificent sunrise which heralded a beautiful sunny day.

Our leader on the Saturday was Mr. P. Ensom of Dorchester Museum to whom we are doubly indebted as he agreed to lead the party at very short notice. We studied the Lower Lias of Charmouth Bay, the delightful sounding Shales with Beef, Black Ven marls and Green Ammonite beds. "Beef" refers to thin layers of secondary fibrous calcite among the permeable shales, and being impermeable it contributes to landslipping.
The afternoon was spent investigating

the Upper Lias and Inferior Oolite of Eype Mouth cliffs. Most interesting was the Junction Bed, an example of a condensed sequence, and full of ammonites. Cracks formed in the Junction Bed shortly after its formation and the influence of faulting on sedimentation was noted. To the east, faulting brought the Fullers Earth and Forest Marble against the Upper Lias. The day finished with the collection of trace fossils and speculation about the nature of arthropod trails.

On Sunday it rained for much of the day but the geology was fascinating. Our thanks go to Mr. Ian West of Southampton University for his lucid descriptions and patience with our questions.

We began on the Isle of Portland inspecting storm damage and the eastern end of Chesil beach where the largest pebbles accummulate. The pebbles probably originate from the floor of the English Channel.

We examined the fossil forests of the Purbeck 'pickled in salt and covered in algal limestones'. The trees are preserved in silica, show butressed roots and have been compared with the junipers of Morocco. We studied the Portland Beds and reconstructed the geological history of the area, seeing evidence of the retreat of the sea in the fossil soils and lagoonal conditions of the Purbeck. The Portland Stone, used to rebuild London after the Great Fire, is very pure. It lacks minerals which would oxidise or rust, is soft to quarry and porous and hence light to use. At Portland Bill we examined the Pleistocene raised beach, thoughtfully preserved by the Admiralty behind a high fence.

In the afternoon the party studied the Corrallian at Osmington Mills. These rocks lie at the centre of the Weymouth anticline and the Kimmeridge Clay traps oil in the underlying Corallian Sands. The Dorset oilfield is as big as a medium sized North Sea oilfield. British Petroleum are still investigating the rocks we examined. Not all their investigations are of economic importance since we were shown the escape burrows of crustaceans overwhelmed by the sudden flurry of oolitic sands following hurricanes. The overlying Kimmeridge Clay yieldod a rich fauna.

Late in the afternoon many of the party had to leave but other enthusiasts continued to Lulworth Cove.

Our thanks go to Colin Mitchell and others for organising such a stimulating weekend.

June 30th.

Birmingham University Open Day.

On this Saturday many departments of the University were open to the public, with displays to show their work. We were made to feel very welcome and the campus was inundated with far more people than I had expected. Of course we visited the geology department, and its museum was especially crowded. Several displays were most interesting. In other departments we saw lasers, films about space and the planets, meteorites, and old printing techniques. There was far too much to see in one day, and we are looking forward to the next open day in 1981. Student members would have found much useful information available on the University courses, and many of the displays were interesting to the children. J.G.

WANTED!!

Someone to look after coffee and biscuits at indoor meetings. Anyone able to do this would be very welcome, especially to the Hon.Sec. who has quite a lot else to do then.
Sociable location. Suit any member!

July 15th.

Black Country Conservation Field Meeting. Leader Alan Cutler.

This was the first field meeting in the society's normal programme to be organised with conservation as its key topic. It started at the exposures of Keele Beds in the embankments along the route of the former Snow Hill to Wolverhampton railway. There are plans made by Sandwell Council for developing the route as a walkway, and they have accepted our advice on the preservation of geological features. We examined exposures along a half mile section and many typical Keele Bed lithological features were seen. An apparent wash-out at one point was regarded as a distinctly uncommon feature.

We journeyed on to Gornal, where we examined two exposures of Gornal Grit off Holloway Street. The longest was in the middle of a 27 acre site which may be developed in future. We hope that these exposures showing ripple marks will be preserved. The second exposure is behind a new factory and we are negotiating rights of access. This exposure is regarded as particularly important because excavations for the factory have revealed what are believed to be Turners Hill Beds (Lower Downton Castle age) lying beneath the Gornal Grit. Fragments of possible plant remains were found in these beds. It is easy to understand how they were formerly mapped as Coal Measures.

Lunch was taken at the nearby Old Mill, after which we proceeded to Straits Green and the southern end of Cotwall End valley. Most of the valley and slopes of Turners Hill are designated as a Nature Conservancy SSSI. Tipping is in progress in the central part of the valley and society concern was aroused by possible threats to some of the exposures. A compromise has been reached with the Council although a careful watch needs to be maintained. We looked at two exposures of Coal Measures and one of Upper Ludlow Shales. One of the Coal Measures exposures displayed coarse grained yellow sandstone, providing a contrast to the Gornal Grit seen earlier. The other showed two almost vertical ironstone bands separated by a poor shaly coal. This particular exposure is well protected by vegetation and might at a future date repay excavation

For the last site of the day we drove over the Western Boundary fault, then took a pleasant woodland walk to Lydiates Hill which lies south-east of Baggeridge coal mine. The hill is formed by a particularly extensive calcareous conglomerate which is part of the group of that name within the Enville Beds formation. We examined the conglomerate in an old quarry where it displays typical lithological characteristics and pebbles from many locations. Some clearance work would help here as it would at other exposures. Following society interest, the hill is now contained within the boundary of a proposed country park at present under Staffordshire County Council's aegis. To round off the day we walked over the Baggeridge site and located the positions of the old shafts

A.C.

September 27th.

Geology of the Dumfries Area.
Lecture by Graham Hickman.

Dumfries lies ten miles north of the Solway Firth and is one of the major towns in the Galloway region of the Southern Uplands. For several years I have been studying the geology while on holiday, and now I am undertaking a geological mapping thesis on this district as part of my degree course.

The bulk of the Southern Uplands consists of steeply dipping turbidites which strike NE-SW. These are of Ordovician and Silurian age and were laid down under deep oceanic conditions in the Iapetus or proto-Atlantic Ocean.

This ocean separated the North American continent, which included Scotland and Northern Ireland, from the Anglo- Welsh- European continent.

A subduction zone developed along the south-eastern edge of the advancing North American continent. The overridden oceanic crust melted at depth and the lighter fractions rose to form the Caledonian batholiths and much of the volcanic activity which has occurred in the Scottish highlands. As the Iapetus Ocean closed, the Lower Palaeozoic sediments were deposited at the foot of the continental slope and on the ocean floor and were pushed up in front of the advancing continent. This gave rise to the steeply dipping strata, folds and strike faults.

The Iapetus Ocean finally closed at the beginning of the Devonian. Late Caledonian volcanic activity gave rise to many large batholiths in the Southern Uplands, for example the Criffel-Dalbeattie, Loch Doon and Cairnsmore of Fleet intrusions. They consist mainly of granodiorites and quartz diorites.

The Devonian period experienced a very arid climate with the result that rapid erosion of the newly formed highlands took place. This resulted in the deposition of conglomerates and sandstones in the intermontane basins, and one such basin was the Cheviot basin which took most of the material from the Southern Uplands. These sediments were interbedded with andesite lava flows, probably as a result of late Caledonian vulcanicity.

The Carboniferous period saw a marine transgression from the south. The Carboniferous rocks in this area are extremely interesting because they represent a marginal basin facies. The palaeogeography of the Lower Carboniferous seems to have been that of a predominant NE-SW coastline on the southern side of the Scottish Highland landmass, cut by several large deltas and with the coastal region forested. The resistant rocks of the Southern Uplands formed an offshore island running parallel with the main landmass. The Lower Carboniferous rocks which outcrop along the 18 mile strip of coast south-west of Dumfries represent the coastal deposits on the southern side of this island.

The junction between these Carboniferous rocks and the Lower Palaeozoic is for the major part of the section that of a fault. However at both ends of this section the fault fades out, and the junction becomes that of an unconformity. The lithologies at the stable ends of this fault are limestone fine sandstones, and siltstones, often showing evidence that lagoonal conditions existed from time to time. Ripple marks are common and the fossils found include plant remains, corals, brachiopods, bivalves, gastropods, crinoids, seaweed and worm burrows. However the rocks which lie in front of the fault are breccias possibly derived from the fault shatter zone, conglomerates and coarse felspathic sandstones, much of the material being derived locally. It is thought that as the fault moved, during the deposition of these sediments, it caused rapid subsidence and accummulation of coarse angular material in the locality of the movement.

The Upper Carboniferous is well represented in the area around Cannonbie and can easily be correlated with the Northern England basin of deposition.

Permian times saw further arid desert conditions with the formation of dunes and alluvial fans along the valleys and surrounding lowland areas. Two such valleys cutting into the Lower Palaeozoic rocks and filled with Permian sediments are the Lochmaben and Dumfries basins. These are the youngest rocks in the area.

Glaciation has played a major part in producing the topography we see today, and has left a considerable covering of glacial drift. It is this that limits the exposure of underlying

rocks, but also allows the field geologist to speculate and draw up his own theories about what should exist beneath! G.H.

PROGRAMME FOR 1980.

Jan. 10th. Meeting before field trip.

Jan. 13th. Field trip "Introduction to the Black Country geology". Leader Alan Cutler.

Feb.7th. "Geological and Political aspects of oil exploration and production". Lecture by Dr. Colin Phipps.

Mar.6th. Annual general meeting and film night.

Mar.23rd. Visit to Chatterley Whitfield mining museum, and tour of underground workings.

May 1st. Members' Evening.

Jun.5th. Meeting before field trip.

Jun.8th. Field trip to East Midlands Jurassic. Leader Dr. R.G.Clements of Leicester University.

Jul.10th. Meeting before field trip.

Jul.13th. "Black Country geology" part two. Leader Alan Cutler.

Sep.11th "Silurian Fossils". Lecture by Dr. I. Strachan of Birmingham University.

Oct.30th. Meeting before field trip.

Nov.2nd. Field trip to Lickey Hills. Leader Mr. W.G.Hardie of Birmingham University.

Nov.21st. Social evening.

In preparation:-
Weekend - S.Wales coalfield and Gower - Easter.
Wrekin - field trip - Oct.
Extra-terrestrial geology, lecture - Dec.

CHRISTMAS BOOK REVIEWS.

The Limestone Mines of Wallsall by H.E.Green. 48 pages.

Any mention of the limestone industries of the Black Country and almost invariably Wrens Nest or Castle Hill come to mind. But as local geologists will know, an equally large Silurian inlier occurs at Walsall. The Wenlock and Woolhope (Barr)limestones which outcrop there provided an important industry spanning several hundred years, reaching its zenith in the 17th and 18th centuries when the demand for limestone as a flux became paramount. Unfortunately this industry has never been fully documented and precious few monuments remain today.

However, Henry Green, in a booklet published by the Black Country Society, has assembled an impressive collection of information about the Walsall limestone industry. The first few chapters form an interesting historical background, going back as far as Roman times and including a chapter devoted to a visit to Walsall by the 17th century historian Robert Plot. A chapter covering the elementary geology is included. The rest of the booklet is mainly concerned with descriptive accounts of the more important mines.

In his conclusion Mr. Green is almost apologetic about the lack or scarcity of information available but he is to be commended on his detective work and in producing a highly readable text. Having been engaged recently in similar researches I know well the problems and difficulties which he has undoubtedly met, and the considerable time that can be spent in library archives.

One small comment is that a general map (albeit small scale) of Walsall showing the geology and the location of the mines would have been very useful to those not very familiar with the town itself. Nevertheless it is a modestly priced booklet and intending recipients could drop a few hints to younger members of the family between now and Christmas.

Alan Cutler.

From Hon.Sec. -75p. (at meetings)
Postage inc. 90p from 62 Red Hil Stourbridg

Kinver Rock Houses by D.M.Bills, E. and W.R.Griffiths. 32 pages. Published by Elda Publications, Kinver.

This booklet describes the dwellings excavated in the soft sandstone cliffs in and around Kinver Edge, which must be one of the best known landmarks in the West Midlands.

Being partly a guide book, it describes each of the groups of dwellings at nine cliff and cave locations, both at Kinver Edge and around Kinver village. Quotations from old sources bring the account to life in a most readable way. There are many photographs, which are extremely interesting because most of them were taken when the dwellings were in use. Several plans are given, showing the layout of the dwellings.

Although much has deteriorated, it is surprising to learn that one dwelling was occupied until 1950 and that a cafe in another of them continued until 1967.

At the end of the booklet is a sketch map of the Kinver area, showing rock house locations. There is also a list of their inhabitants from 1814 to 1884 which makes very interesting reading. The authors are residents of Kinver and are to be congratulated on an excellent little book which contains a lot of information. As guided walks to view these rock houses are now becoming popular, it would be invaluable to read this account before a visit, and it would certainly enhance a visit to look at the geology.

John Golledge.

Price 70p. (at meetings) [post, 85p. from 62 Red Hill Stourbridge]

Other books available from Hon.Sec. (62 Red Hill, Stourbridge.)

	post
The Endless Village. (ecology of the West Midlands)	£1.00(£1.4
Geological Handbook for Wrens Nest	£0.20(0.30)
Wrens Nest geological trail	£0.15(0.25)
Mortimer Forest geological trail, Ludlow	£0.15(0.25)
Chart of geological ages	£0.35(0.43)
Geological maps: Dudley	£1.45(1.73)
Wolverhampton "	"
Shropshire "	"
etc.	
British Isles.	
"The geological field notebook" By P.C. Ensom of Dorset County Museum. (Why should you keep one and how do you do it?)	£0.15(0.25)
Careers for geologists (I.G.S. publication)	£0.50(0.70)

Nature Conservancy Council Geological Exhibit.

This was on display at the Cotwall End Nature Centre in Sedgley from early July until late September, and was concerned with conservation and why it is important. We hope that members had a look, the Centre being a pleasant place for a family visit in its own right. The final two weeks were enhanced by a B.C.G.S. publicity exhibit, which we hope to use at public events in future. Alan Cutler is to be congratulated on setting up such a professional and attractive display. J.G.

Walsall District Plan. A copy has been received of this county planning project report. It may be viewed or borrowed by members. It does not mention geological features, but detailed plans show data submitted by the B.C.G.S. for Walsall area

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The Black Country Geological Society

FIELD EXCURSION

The Peak District

SUNDAY 14th OCTOBER 1979

Coach Leaves Dudley Central Library at 9.30 am

Discussion on Thursday 11 October

7·30pm in Dudley Central Library

Non-Members Welcome

Hon. Secretary : J. Golledge

62, Red Hill
Stourbridge

ext } Thurs. 15 Nov.: Social Evening.
etings } Thurs. 13 Dec.: Lecture - Mineralisation. Dudley Museum 7,30pm.