



The  
Black  
Country  
Geological  
Society

# NEWSLETTER No. 157

## FEBRUARY 2003

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 accident insurance to the level you feel appropriate. Schools and other bodies should arrange their own insurance as a matter of course.

Leaders provide their services on a purely voluntary basis and may not be professionally qualified in this capacity.

The Society does not provide hard hats for use of members or visitors at field meetings. It is your responsibility to provide your own hard hat and other safety equipment \*(such as safety boots and goggles/glasses) and to use it when you feel it is necessary or when a site owner makes it a condition of entry.

Hammering is seldom necessary. It is the responsibility of the hammerer to ensure that other people are at a safe distance before doing so.

### FUTURE PROGRAMME

**Lecture meetings are held at Dudley Museum, St James's Road, Dudley. Phone (01384 815575) 7.30 for 8 o' clock start unless stated otherwise.**

#### **MONDAY 31<sup>ST</sup> MARCH 2003. ANNUAL GENERAL MEETING 7.30pm**

Followed by AGM guest speaker Vic Smallshire, Chairman of Dudley Canal Trust, who will talk about, "Holes in the Ground," a fascinating personal account of his 28 year journey into some of the largest, weirdest and most obscure man-made excavations in the U.K.

**SATURDAY 12<sup>TH</sup> APRIL 2003 Field Meeting:** Coastal Geomorphological Walk from Aberystwyth to Borth. Led by Andrew Rochelle

Trains leave Birmingham at 0834, Wolverhampton at 0853 and Telford at 0910. The service is direct. The party should assemble at Aberystwyth railway station on arrival of the train at 11 22. Members travelling by car should make their own parking arrangements.

The party will then visit the town museum, which is free, and then begin the walk via Constitution Hill and Clarach Bay to Borth, a distance of about 8 km. Please wear strong shoes, bring a waterproof and a packed lunch. OS Explorer sheet 213 Aberystwyth and Cwm Rheidol would be useful.

During the walk Silurian grits, turbidite beds, mudstones and spectacular folding can be seen. In addition, raised beaches, wave-cut platforms, stacks, caves, blowholes, spits, bars and dunes can be studied, making this a geography textbook walk to be remembered.

Trains leave Borth for Birmingham at 15 48 and 17 46, arriving in Birmingham at 1819 and 2022. Light refreshments are available on the train. Please let Andrew know if you are intending to join the trip by contacting him on Tel. 01952 299136 or email: [cft-wrochelle9@supanet.com](mailto:cft-wrochelle9@supanet.com).

*Chairman*

*G.J. Worton B.Sc., C.Geol., F.G.S.*

*Vice Chairman*

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*G.W.J. Hensman B.Sc., F.R.Met.S.*

*Field Secretary*

*A. Rochelle B.A. Hons., Tech.RICS.*

**MONDAY 28<sup>th</sup> APRIL 2003.** Lecture: Adrian Collings and Tom Lawson "The Birmingham Northern Relief Road"

The talk will explain and illustrate how the design of the new motorway was affected by the geology found along the route. They have some fascinating photographs, both aerial and ground, of the new exposures along this controversial Motorway.

**MONDAY 19TH MAY 2003** Lecture; Dr. Tony Waltham "Kamchatka Volcanoes"

Above a very active part of the Pacific subduction zone, the Kamchatka volcanoes have long been impossible to visit as they were in a military restricted area of Russia's far east. The more accessible sites around Petropavlovsk include two dangerously explosive andesite cones, the Strombolian activity of Karimsky, the Valley of Geysirs, a cratered basaltic shield and the splendid geothermal activity inside the Mutnovsky caldera. Worth a visit and/or a look!

Dr. Waltham is a Senior lecturer in Engineering Geology at Nottingham Trent University, and author of various books. He delights in travelling to distant "spectaculars", and for many years used cave exploration as an excuse. He now travels less energetically - mainly to volcanoes or mountain regions.

**SATURDAY 28<sup>TH</sup> JUNE 2003** Field Trip: A Day Trip to Ludlow. Led by Mike Williams.

A day in Ludlow can be a wonderful day out. The castle, the architecture, pubs, shops and fossils makes this venue a great regional attraction.

We will meet at the new library and museum at 11 00 am. There is parking. A visit to the newly refurbished museum and study of the fossil collection will then follow. After lunch there will be a riverside walk, following a marked geological trail. Fossils can be observed in situ.

No hammers please.

Please wear strong shoes and bring a waterproof.

**SEPTEMBER 2003 – date to be confirmed** Field Trip: Wrens Nest Re-visited. Led by Graham Worton

This is a preliminary notice of a visit to The Wrens Nest lead by Graham Worton for a date to be arranged in September.

See and have described the unique characteristics of this very special site. Hear about the great collapse of 2002 and plans for the future of the area.

Graham has a special expertise and interest in the area and will appraise the party of future plans for development of education and visitor attractions.

**SUNDAY 28<sup>TH</sup> SEPTEMBER 2003** Field Trip: Trevor Rocks – Llangollen, North Wales - a joint meeting with the Mid Wales Geology Club. Led by Tony Thorp.

Limestone exposures with fossils.

Meet at 11 00 am at OS ref SJ234 432. Turn right by a phone box and pub on the main road at SJ 242 424 and continue uphill to a very tight turn at SJ232 432 and in 100 m there is a parking place for a few cars. If you reach the double hair pin you have gone too far.

The alternative access is via Castel Dinas Bran.

While in the area why not visit the world famous Pontcysyllte Aqueduct over the River Dee and the Chirk Aqueduct over the River Ceiriog.

Take a packed lunch and wear strong shoes.

## EDITORIAL

At our last committee meeting it was decided that it would be a good thing to actually record what we do at the committee meetings and the kinds of things that we discuss and to include this as a small report within the newsletters. In addition we will hold these meetings before some of the indoor meetings so that any member who would like to observe the inner workings of the society can do so. With this in mind you will see that below is a very brief account of the last committee meeting.

## REPORTS

### **Evening lecture Monday 24<sup>th</sup> February 2003**

#### **Oil Exploration in 4 Dimensions.**

**Robert Smallshire.**

Robert is a structural geologist working for Midland Valley Exploration in Glasgow, a company engaged in analysing geological data for companies such as oil and gas producers. Previously geological cross sections were created from field and borehole data when frequently structure at depth could only be estimated. Cross sections usually showed faults as being straight and little thought was given as to whether the strata would resolve correctly if the section was restored to the period before faulting occurred

As the understanding of strata at depth became more important for oil exploration Darlstrom realised from work in the Canadian Rockies that it was necessary to accurately resolve the sections to predict strata at depth. He said that for a section to be valid, the bed lengths of the layers should be the same before and after faulting; and following on from this the volume of the beds should also be the same, with no material left over or created.

Robert used the Dura fault belt in the Western Alps as an example of how accurate resolving of cross sections could be achieved; his experience of this area coming from a period of field mapping for his thesis. In this area there is a complex geology of normal faults, thrust faults and folding in limestone and shale overlying the basement and once restored the final cross section shows a shallow continental shelf. Robert showed us various attempts at cross sections of the Ratz anticline using surface mapping and borehole data; each hypothesis was tested to find potential problems until the most likely one was tested in the field to see if its predictions were proved. At the end of this process one theoretical cross section was produced which fitted the data and resolved well; this then showed a very complex geology.

We were then given a further example of these techniques as used in the oil fields of the North Sea where field mapping data is clearly absent and borehole data is expensive and limited. Seismic surveys provide most of the information with computers producing interpretations (given some human intervention). Examples of seismic charts and hypothetical sections were given before the final section was produced. We were then shown the series of restorations of this section period by period. 3D models have also been developed using similar techniques allowing calculations for volume conservation. The cost benefits for the oil industry of getting these calculations right were clear.

At the end of the lecture Robert gave a final example of these techniques as used in a gas reservoir within fractured rock strata in the Tarija basin of Argentina. Strain mapping was used to establish the likely pattern of rock fractures caused by movement and folding of the reservoir rocks and to discover if the fractures were interconnected allowing gas flow. Gas production was in fact poor, probably caused by the fractures closing reducing inter-connectivity; this all going to prove that science can't always get it completely right!

All those present were thoroughly engaged by Robert's lecture and its accompanying Powerpoint photographs and graphics; there followed a number of interesting questions with equally interesting answers. We were all very grateful to Robert taking time to visit, entertain and inform us.

Steven Hughes

## [CONSERVATION COLUMN](#)

### **Dudley Before Man**

Some time ago, and following the review of Dudley's important geological sites that Alan Cutler and I did for Dudley MBC, Alan began the drafting of a leaflet which could act as a geological motor tour of Dudley. It will be the first of its kind for Dudley and the Black Country and is both informative and very attractive in layout and style. This is now in second draft and subject to some further editing and the insertion of a few more nice photos should be in print in the next financial year.

### **Wrens Nest Update**

Believe it or not, it has been 18 months since the major collapses that occurred in the lower levels of the 7 sisters mines on the western side of the Reserve. In the period since the 'event' there has been a frenzied period of negotiations and emergency measures put in place by Dudley MBC to further prevent unauthorised access/trespass into this now extremely hazardous area of the mine. The work focussed on securing the surface mine entrances as an immediate safety measure and has been followed up by a very complex set of discussions to design engineering measures that will stabilise and save as much of the mine complex as possible.



These engineering works themselves are two stage. The first stage relates to the creation of an alternative bat roost somewhere on the site and then a main stage of works at the & sisters themselves to stabilise the lower levels of the mine and secure the entrances which are such an important part of the heritage of the site and indeed the whole area. These entrances are the last remaining limestone mine entrances in the UK and are therefore the very last vestiges of that once great industry which was so significant in the building of the Black Country as an industrial region and initiating the industrial revolution which swept the world. The core design team for these works fully acknowledges this significance and will be making a rigorous analysis of traditional and novel methods to bring about the optimum solution to this heritage crisis.

At the present time the BCGS together with Dudley MBC officers, English Nature and English Heritage are working together with the mines agent, engineering consultants and contractors to ensure the best outcome to secure the long term future of the mines. Discussions to-date have led to a first stage of works that will create new exposures, rather than degrade existing ones and will provide, through careful logging and collecting at the sites of this work, new insights into the stratigraphy and palaeontology of this area of the reserve.

### **WORKING PARTY**

At some point in the programme excavated materials will be available for picking over to collect a comprehensive suite of specimens for the museum. When it becomes clearer in the negotiations when this will be and what the rules are to permit this, I will call for a working party of BCGS members to help so that we are able to maximise the benefits from this work. So watch this space.

### **Dudley Museum Update**

#### ***The Black Country Geology and Mining information Project update***

Several meetings have been held since the last newsletter and a trial GIS mining data set has been produced on Dudley MBC's GMIS system. This trial involves a layer within the data held by Dudley MBC which shows the general location of 31 mines or quarries, each of which has a

simple description, a picture or other details associated with it. These points can be superimposed onto street plans or old editions of the OS, or digital geological maps, and aerial photographs held within the system. Each point can then be interrogated to yield its associated text and pictures.

This system is very much a test bed for people to see and comment on and will form the focus for a meeting of the core partners and educational specialists in early April when its usefulness and style will be evaluated.

There is a long way to go on this project before we know what will be the best way to go with it and what would be the most useful outcomes from it. If you have any thoughts I would love to hear them.

### ***The BCGS Collection update***

The BCGS collection is set to get its first future-looking bequest. Joy and Royston Duckworth have kindly suggested that they will bequeath their collection of rocks minerals and fossils to the Dudley Collections as part of the BCGS Collection. This simply means that at some point in the future, when Joy and Royston feel that the time is right they will formally donate to the collection. All that needs to be done now is for this overworked keeper of Geology to get his finger out of other pies for a while and to get the paperwork sorted. Many thanks to them for this initiative.

**Don't forget** if you do have any important samples from sites that no longer exist or simply want to make sure that the quality samples that you have find a caring home for the future then please consider adding them to the BCGS collection at the museum and get in touch.

Until next time.....Graham W

## **OTHER NEWS**

### COMMITTEE MEETING HELD Monday 27 Jan 2003

The meeting was set to discuss the forthcoming AGM and the nominations for committee given the notice given by Sue Fairclough to step down as treasurer at the AGM. Sue was thanked for her service to the society over many years. The duties of the treasurer were reviewed and potential candidates were identified to take up this post. It was decided that we would hold committee meetings before some of the indoor meetings and invite the membership to observe and that a short paragraph of the business discussed should be put in the following newsletter. The production of the newsletter without a specific nominated person had essentially been falling on Graham's shoulders since Kate's departure as newsletter editor despite the best efforts to do this as an editorial team based at the museum where facilities are available. This had become increasingly difficult to do in terms of time needed to chase and write articles and this duty had to be delegated to a specific editor/s. Alf Cole and Bill Groves were identified as the individuals who following the Feb edition of the newsletter would take on this duty.

### EARTHQUAKES

Reported in the local Press at the beginning of January 2003:

A short ceremony in the back garden of a house in Dudley will protect the area against future earthquakes. A Hindu holy man, Rajyogi Narendraji, performed the ritual in the garden by pouring water, charcoal and grit into a hole before burying a copper pot. His sister Kailasben Parikh said that this would prevent any more earthquakes - but if they did occur they would only be small ones. She said that in January 2001, the Indian city of Surat had an earthquake but her brother had saved the city by pressing his right toe on the earth thus inhibiting the tremor. Rajyogi Narendraji is also to visit London, Manchester and Leicester to save their populations from future earthquakes.

Gordon Hensman

It is with great sadness that we have to report on the tragic death of one of our new members. Kate Parker of Kingswinford died at the age of 22 years on the 20<sup>th</sup> February in a car crash while on holiday visiting her friend in Zimbabwe. For those of you who met Kate in her short time with us, you will remember her as a bubbly lovely girl who exuded enthusiasm for geology and was delighted to be part of the society and geological community in the Black Country.

She had returned to the Black Country last August to take up a position as an engineering geologist with Johnson Poole and Bloomer after getting her honours degree in Applied Geology from the university of Staffordshire, in Stoke. She joined the society at the Rock and Fossil Fair in September. Her funeral was held at St Marys church Kingswinford on the 7<sup>th</sup> of March and was very much a celebration of an extraordinary life. The church was packed with hundreds of people that Kate had touched in her slender years.



She will be greatly missed by all who had come to know her and our sympathy and very best wishes go to her family at this very difficult time.

## [CONTACT US](#)

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BCGS Website now at [www.bcgs.info](http://www.bcgs.info)

## ANNUAL GENERAL MEETING 2003

Notice is hereby given of the twenty eighth Annual General Meeting of the  
BLACK COUNTRY GEOLOGICAL SOCIETY

To be held at Dudley Museum at 7.30pm Monday 31<sup>st</sup> March 2003

### AGENDA

1. Apologies for absence
2. Minutes of the AGM held on 25<sup>th</sup> February 2002
3. Statement of accounts and Treasurer's report
4. Chairman's annual report
5. Election of officers and committee
 

a) chairman	e) meetings secretary
b) vice chairman	f) field meetings secretary
c) treasurer	g) three committee members
d) secretary	h) auditor
6. Any other business

### Current members:

Chairman:	Graham Worton	Vice-chairman:	Alan Cutler
Treasurer:	Sue Fairclough	Secretary:	Sarah Worton
Meetings:	Gordon Hensman	Field Meetings:	Andrew Rochelle
Members:	Barbara Russell	Alf Cole	Mike Williams
Auditor:	Martin Normanton		

All posts are honorary and available for re-election. Nominations may be made to the secretary or declared at the AGM.

## SUBSCRIPTIONS 2003

Your next subscription was due on 1<sup>st</sup> January 2003. Subscriptions can be paid at the March meeting or sent to the treasurer:

Mrs Sue Fairclough, 7 Pool Street, Woodsetton, Dudley DY1 3SN

SUBSCRIPTION RATES:	Individual	£15	per annum
	'Family'	£20	per annum
	Full time student	£5	per annum
	Group/Company	£30	per annum

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