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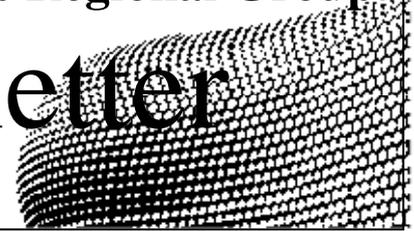
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West Midlands Regional Group

# Newsletter

January 2013



**Following** the success of the first issue, we bring you the second, Winter issue of the Group Newsletter!

As always, comments are welcome and were copies are printed, we would encourage all members to recycle once you have finished reading.

## Group Update

**November's** talk on Severn Trent Water Limited's Low Flow Investigations by Mike Streetly (Director, ESI) and Andy Banham (Water Resources Planner, STWL) was very well received with all 30 places occupied.

Special thanks go to Mike Streetly and all the staff at ESI's New Zealand House office who made everyone very welcome. Certainly the addition of wine and cheese has set a precedent for future talks!

The Group are very keen to exploit this return to form in the Shrewsbury area.

We are actively on the hunt for a larger venue for our next Shrewsbury-based talk, so keep your suggestions coming.

Along these lines, the Group are looking for a 'Shrewsbury Representative'. Whilst not formally part of the Committee, it is envisaged that this person will continue to build on the talks offered by the Group by arranging smaller talks and social events (curry nights, maybe) to bridge the gap between talks. Do you think this is a good idea? Maybe you would like to volunteer? If so, contact the Group Secretary.

**Decembers** talk on Wine, Whisky and Beer: The Role of Geology by the aptly named Professor Alex Maltman (Aberystwyth University) was also well attended, with over 45 people in attendance.

We've had plenty of good feedback on the talk, though it seems many of you missed the big stack of mince pies in the museum! We didn't think these would keep until the next talk in January, so they were quietly snaffled by the few that found them afterwards.

**The Annual General Meeting** passed off without significant changes, details of which can be found on the following pages.

All of our evening lectures are free to Geological Society London Members. Non-members are also welcome to attend for a small £1 donation.

**January** sees the opening of entries for the 2013 Colin Knipe Early Career Geologist Award and the launch of our Group Photographic Competition. Details of both can be found within this Newsletter.

**In a change** to the advertised talk for March, Dr Russell Thomas (Parsons Brinckerhoff) is to give his talk on The British Gas Industry: Considerations for the use of Environmental Forensics. The venue details remain the same.

We hope to be able to bring you Nick Riley's talk on Shale Gas: Fracking and Impacts at a later date.

This is your society - tell us what you want! We look forward to seeing you at the events we provide during this season!

If you have any comments or questions regarding the Group or the Talks Programme, please feel free to make contact using the details provided below.

Regards,  
**Daniel Welch**  
West Midlands Regional Group Secretary

Website: [www.geolsoc.org.uk/wmrg](http://www.geolsoc.org.uk/wmrg)

Email: [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk)



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# West Midlands Regional Group

# PHOTOGRAPHY CONTEST 2013



## Four Categories:

*Geology in Motion*

*Geology and the Midlands*

*Geology at Work*

*Creative/ Abstract Geology*

## Prizes:

Top 3 images in each Category will be re-printed at A3 for display at the 2013 Rock and Fossil Festival to be held at Dudley Museum & Art Gallery

**Ultimate Winner per Category (chosen by a Judging Panel) :**

**£50 cash prize + Calendar of Images**

All 12 images will also be reproduced as postcards for sale at the event to raise funds for the WMRG and Black Country Geological Society

## Competition Rules and Further Information:

Visit: [www.geolsoc.org.uk/WMRG](http://www.geolsoc.org.uk/WMRG)

Email: [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk)

## Sponsors:

West Midlands Geological Society

Black Country Geological Society

Young Geoscientists Group



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# West Midlands Regional Group PHOTO COMPETITION

Terms & Conditions

## The closing date for entries is Friday 29<sup>th</sup> March 2013

If you wish to enter the competition, there are a few rules to remember. The competition is first and foremost a bit of fun and is aimed primarily at amateur photographers.

Entrants must be either a member of the Geological Society London (GSL) or the Black Country Geological Society (GLS), or a current student of the University of Birmingham, School of Geography, Earth and Environmental Sciences, or Wolverhampton University, Department of Biology, Geography and the Environment.

You can enter up to a total of three photographs, which must be your own work, choosing between the following four categories:

Geology in Motion

Geology and the Midlands

Geology at Work

Creative/ Abstract Geology

Images must be submitted in print. Electronic copies should only be sent upon request of the WMRG in the event of an image being shortlisted.

Images must be no larger than A4 (210mm x 297mm) and must not be merged or manipulated. *You can crop, enlarge, and enhance to remove spots or scratches, make it brighter, clearer etc but you must not manipulate the content. In all cases, the WMRG reserve the right to exclude any image whose authenticity they believe to be questionable.*

**Please write your name, address, GSL Fellowship/ BCGS Member Number or University Student Number and a daytime and evening phone number on the back of each photograph, with a note of where it was taken.** Then all you have to do is send your entries in to: **Geological Photographic Competition, c/o Graham Worton (Keeper of Geology & Manager), Dudley Museum & Art Gallery, St James Road, Dudley, DY1 1HU.**

**Sorry. We cannot return any entries.**

Judging will take place during April/ May 2013, following which 12 shortlisted photographs (3 from each category) will be chosen to feature at the 2013 Rock and Fossil Festival to be held at Dudley Museum & Art Gallery in September 2013 where guests will be invited to vote on the images displayed.

The person who takes the winning image in each category will receive a cash prize of £50 and a calendar of all 12 shortlisted photographs. All 8 remaining runners up will each receive a calendar of the shortlisted photographs.

It is also proposed that the 12 images will be reproduced as postcards for sale at the event to raise funds for the WMRG and BCGS.

### Contact

For more information on this or any other event held by the West Midlands Regional Group of the Geological Society, please contact us at [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk) or visit our website [www.geolsoc.org.uk/wmrg](http://www.geolsoc.org.uk/wmrg). You can also join our groups on LinkedIn and Facebook where details of all events will be posted.

## Annual General Meeting

### Chairperson's Statement

A recent survey by the GSL revealed some interesting facts. A total of 840 geologists reported an affiliation with the West Midlands Regional Group, although only around 77% of these actually lived and worked within our catchment area. There is an extremely healthy cohort of younger members, which argues well for the future of the Group.

There are a total of 271 chartered geologists in our area, 208 of which have >5 years working experience. By simple deduction this means that there may be 400-450 non-chartered members. If we purport to provide a useful service to our members, this provides our Group with an interesting challenge: how are we going to promote chartership and help members convert from non-chartered status?

There has been an increase in the average number of attendees for meetings in 2012, which again is a very encouraging sign. The emphasis for this year has been to provide arguable more talks that might contribute to a CPD portfolio. National guidelines from Burlington House indicate that regional groups should interact more with a CPD programme and be responsive to members requests. As the Group has followed such advice, it follows that our attendances have increased and we hope to continue along these lines to provide a useful service to our members.

The inaugural Early Career's Competition and the associated Colin Knipe Award was a great success in 2012 and we hope to run the competition again in 2013. Unfortunately our regional winner did not gain the national prize, but perhaps in 2012....?

As the Group is interested in providing more CPD-type activities, it is also interesting to note the popular areas of expertise within our region. The top five are:

1. Engineering	39%
2. Contaminated Land	35%
3. Geotechnics	32%
4. Hydrogeology	31%
5. Environmental Scientists	28%

Other areas of interest include Waste Management, Soils, Quarrying, Geophysics and Geochemistry.

In terms of Specialist Group Affiliations, the top three preferences are:

1. Engineering Group	49%
2. Hydrogeology Group	44%
3. Environment Group	42%

So all-in-all, 2012 has been a successful year and the new (younger) committee have been very busy in coming up with new ideas and providing an interesting programme of events. The reintroduction of the summer field trip to the underground canal tunnels in Dudley, followed by a social at Holden's Brewery was very well received. Similarly, the hydrogeology even at ESI, Shrewsbury was fully booked and again, very informative for those present.

I would like to express my thanks to the hard-working committee, especially Daniel Welch, who has been very active on your behalf and I hope 2013 can build on the successes of 2012. I would also like to thank David Jones of the Geological Society Professional Committee for providing statistical data on the Group.

Clive Roberts, Chair WMRG

### Treasurer's Report

In 2012, the West Midlands Regional Group continued its evening lectures at the universities of Birmingham and Wolverhampton, and convened a joint Chartership Meeting with the Young Geoscientists Group and a joint meeting with ESI and Severn Trent Water. These meetings raised the group's profile without incurring excessive cost - membership attendance at events has picked up in recent months.

Also, in 2012, the WMRG continued its programme aimed at promoting geology in the region, which included the inaugural Early Career Geologist Award regional finals and presentation of the Colin Knipe Trophy, and a summer field trip to the limestone mines underneath Dudley.

At the end of 2012, the group is in a healthy financial position with sufficient funds to continue its normal programme of events.

Looking forwards, in 2013 we will continue to support regional events such as the Early Career Geologist Award (£200 prize monies plus expenses for the Finalist to attend the National event); a late spring / early summer field trip (£200 subsidy); and Geological Photography Contest and Postcard printing of the winning images for sale at the Dudley Rock and Fossil Festival (£150 prize monies plus printing costs to be recouped).

It is proposed that the cost of supporting these activities is covered by WMRG funds and to enable this, a grant application will be made to The Geological Society for the sum of £1000.

Finally, inline with the GSL Charter, I am required to step-down as Treasurer and hand the role over to new hands. If there is anyone who would like to commit their time to the role, please contact the Group.

Neil Cooper, Treasurer.

### Secretary's Report

As mentioned by others, 2012 has been a year of improvements. We knew at election that the Group needed rejuvenation, but it wasn't until we attempted to hold our first talk in March that we realised how big our task was going to be. In total, not including committee members, less than 10 people attended. A dire state of affairs.

Following review, it was discovered that the abilities of then publicised Jiscmail was very limited and often blocked by most email providers.

After this first set back, we came back anew in May with a new Group email address and a re-worked mailing list. The Field Trip to the Dudley Canal was well received, with approximately 40 persons in attendance (not including committee) – a 300% improvement!

Buoyed by this improvement, we tailored our programme to suit the interests of the Group.

Attendances for the talks to date are as follows:

October	Medical Geology Research	62 (venue max. capacity 64)
November	Severn Trent Low Flow Investigations	30 (venue max. capacity 30)
December	Wine, Whisky & Beer: The Role of Geology	41 (venue max. capacity 64)

All talks are now available on-line with links to items available on our LinkedIn Group. To join, search for West Midlands Regional Group of the Geological Society.

Unfortunately, we have experienced some teething issues with Facebook but we hope to have these sorted soon.

In the meantime, I would encourage all members to keep an eye on the Group's web page ([www.geolsoc.org.uk/wmrg](http://www.geolsoc.org.uk/wmrg)) which is updated regularly.

Dan Welch, Secretary

### Committee Elected at the AGM

Chair	Clive Roberts (University of Wolverhampton)
Treasurer	- <i>position open</i> -
Secretary	Daniel Welch (SITA UK Limited)
Chartership Officer	Adrian Collings (Arup)
Web Officer	Dan Jefferies (Atkins)
Member	Sarah Worton (Atkins)
Member	Richard Mitchenner (Atkins)
Member	Verity Smith (Atkins)
Member	Graham Worton (Dudley Museum & Art Gallery)



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# West Midlands Regional Group ANNOUNCEMENT

Winter 2012

## The Colin Knipe Early Career Geologist Award 2013

The Group invites applicants for the Colin Knipe Early Career Geologist Award for 2013.

Entrants must:

- Be Fellows or Candidate Fellows of the Geological Society, London;
- Live or work in the Geological Society's West Midlands Region of *Herefordshire, Worcestershire, Shropshire, Staffordshire, West Midlands and Warwickshire*; and who;
- Have between a minimum of 6 and a maximum of 10 years post-graduate (bachelors or equivalent) experience at the closing date for entries, which is 29th March 2013.

To enter, please submit a synopsis of a maximum 500 words electronically to [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk)

In recognition of the variety of careers and subjects that geologists get involved in the only criteria is that the topic of the submission shall be geological in context. This could include:

- A project that you are involved with at work;
- Your dissertation or thesis, or;
- A subject or area of geology that interests you.

A shortlist of 3 finalists will be chosen and each invited to give a short, 15 minute, presentation to a panel of Committee Members and selected experienced geologists and scoring based on the quality of each presentation given.

A cash prize of **£100** will be presented to the winner and **£40** to each of the other two finalists on the evening of 9<sup>th</sup> April 2013 at the Lapworth Museum of Geology. The winner will also be entered into a National Final to be held 23<sup>rd</sup> April 2013 at Burlington House in, with an opportunity for the winning entry to be presented in a Geoscientist Magazine article.

Prospective Chartership applicants or those considering Chartership status in the future are encouraged to enter this event, as the chartership application interview includes a 15 minute presentation and this event provides an ideal opportunity to practice your presentation skills, as well as demonstrating your geological knowledge in front of an audience of fellow geologists.

### Contact

Entries should be submitted to the Group Secretary via [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk).

For more information on this or any other event held by the West Midlands Regional Group of the Geological Society, please contact us at [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk) or visit our website [www.geolsoc.org.uk/wmrg](http://www.geolsoc.org.uk/wmrg).

The Geological Society of London is a registered charity (No. 210161).

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# Programme

Winter 2012 / 2013

Date & Time	Title & Speaker	Venue
Tuesday 29 January 2013 Time to be confirmed	<b>Chartership Evening</b> Dr Bill Gaskgarth – Geological Society London	Lapworth Museum of Geology
Tuesday 12 February 2013 6:30pm	<b>Geological Hazards: How Safe Is Britain?</b> Hon Prof. Martin Culshaw - University of Birmingham	Lapworth Museum of Geology
<b>----- CHANGE TO ADVERTISED TALK -----</b>		
Tuesday 12 March 2013 6:30pm	<b>The British Gas Industry: Considerations for the use of Environmental Forensics</b> Dr Russell Thomas – Technical Director, Parsons Brinckerhoff	University of Wolverhampton Room MA 202
Tuesday 9 April 2013 Time to be Confirmed	<b>JOINT WORKSHOP:</b> <b>Advances in Groundwater Sampling Methodology in Long Screened Wells and Monitoring Boreholes</b> Peter Dumble –Hydrogeologist, Waterra UK Limited Lindsay McMillan – NERC Doctoral Researcher, UoB  <b>Advances in Environmental Analysis</b> Ameeta Parekh-Pross – Technical Manager, ESG Sarah James PhD – Business Manager, ESG	Lapworth Museum of Geology
Tuesday 14 May 2013 6:30pm	<b>A Thermogeological Journey: 150 Years From Kelvin, through Zoelly and Sumner</b> David Banks – Director, Holymoor Consultancy Ltd and author; <i>“An Introduction to Thermogeology – Ground Source Cooling and Heating”</i>	University of Wolverhampton Room MA 030
May/June 2013 6:30pm	<b>Spring Field Trip</b>	To be Confirmed

## Notes:

**Lapworth Museum of Geology** – Located within Earth Sciences at the University of Birmingham. Refreshments will be available in the Museum from 18:00, following which the talk will commence in the adjacent Earth Imaging Lab at 18:30.

**Wolverhampton University** – Located within Building MA on the South Campus, within the City Centre. Refreshments will be available from 18:00, with talks due to commence at 18:30.

Event reminders will be circulated to members before each meeting. For further details/ enquiries, please contact the Group Secretary, Daniel Welch: [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk).

Where possible, these events may be considered for contributing to a recognised Continuing Professional Development (CPD) scheme as part of personal development. Delegates should check their individual scheme requirements.

## Future Talk Abstracts

Tuesday 29<sup>th</sup> January 2013

*Chartership Evening*

1800 for 18:30

### **The Lapworth Museum of Geology**

**Dr Bill Gaskarth (The Geological Society London), with Richard Down (Atkins) and Verity Smith (WMRG, Atkins)**

The numbers of people applying for Chartership (CGeol and CSci) continues to grow, and so the GSL need to increase the number of available Scrutineers. Anyone who has been Chartered for five or more years may apply to become a Scrutineer, with their services called upon a maximum of twice per year.

Chartership applicants of all specialisms are encouraged to look for a Mentor within their employment organisation and to have him or her act as a Sponsor. Many candidates have found it impossible to locate an in-house Mentor and so have struggled to appreciate fully what is involved applying for Chartership. The GSL therefore is actively seeking to recruit more Mentors.

As part of the evening, Bill will also provide his guide to the chartership process to present Mentors/Scrutineers and will encourage them to share their experience of the work. This would be particularly useful for Mentors/Scrutineers who were unable to make the annual Scrutineers' Day at Burlington House.

Prospective CGeol candidates will likely to get a significant amount of useful information from this lecture to guide them through future Chartership applications.

So if you are considering; applying for Chartership through the Geological Society, mentoring someone who is, or would like to contribute to the society by becoming a Mentor or Scrutineer, we would recommend that you attend this informative evening.

There will also be two short talks on 'A Scrutineers Perspective' and 'An Applicants Perspective'.

Tuesday 12<sup>th</sup> February 2013

*Geological Hazards: How Safe Is Britain*

1800 for 18:30

### **The Lapworth Museum of Geology**

**Hon. Professor Martin Culshaw (The University of Birmingham / British Geological Survey)**

When the public becomes aware of geological hazards, it is usually because a catastrophic event such as an earthquake, a volcanic eruption or a tsunami has occurred elsewhere in the world.

While Britain does experience these 'geohazards' very occasionally, their effect is usually small. Yet, geological hazards in Britain cause losses in terms of damage to buildings, structures and infrastructure of between £0.5bn and £1bn every year. In addition, people occasionally lose their life or are injured. The lecture will discuss the geological hazards that affect Britain. Perhaps surprisingly, the most important of these, in terms of financial loss, is the swelling and shrinking of certain clay formations. Other relatively common natural geological hazards include landslides, dissolution of more soluble rocks and weak, compressible soils.

People have also created a range of 'anthropogenic geohazards' caused by the extraction of minerals from the ground, the disposal of waste in pits and quarries, construction both in, and on, the ground and the contamination of the ground by chemical residues from industrial processes.

The lecture will explain the difference between 'hazard' and 'risk' and the impact of geological hazards on us will be outlined and suggestions made as to how geological hazards can be mitigated and the risks reduced.

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Email: [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk)

Tuesday 12<sup>th</sup> March 2012

*The British Gas Industry:  
Considerations for the use of Environmental Forensics*

18:00 for 18:30

**The University of Wolverhampton**

**Dr Russell Thomas (Parsons Brinckerhoff)**

Gasworks otherwise known as Manufactured Gas Plants (MGP) in America were a common feature across the UK, present in every city, town and many villages. There were over 4000 Gasworks in the UK and many more worldwide. With the development of isotopic and state of the art GCxGC ToF MS methods to compliment traditional approaches to site investigation, former MGP sites are now a suitable subject for the application of environmental forensics. Whilst the importance of these analytical methods cannot be underestimated an understanding of the complex 200 year development the coal carbonisation industry is just as important.

Most credit for the discovery of commercial gas manufacture goes to William Murdoch a genius Scottish engineer. Murdoch developed a scientific curiosity into a practical reality for commercial exploitation. From the first demonstration of gas lighting of Murdoch's house and office in Redruth in 1792 to the eventual demise of the manufactured gas industry in the 1970's, continuous development was undertaken to improve the manufacture of gas. When this is combined with the changing demands the UK gas industry faced, from its original purpose primarily for street lighting to its eventual use for domestic and commercial heating purposes, this has led to a very wide diversity of gas manufacturing processes being used across the UK.

These former MGPs have left an environmental legacy, for which the application of accurate environmental forensic methods may help provide a greater degree of understanding than that currently provided by standard analytical methods. Within this presentation we review the development of this industry and the technologies used and try to demonstrate how this industry's evolution may impact on how environmental forensics techniques are used in the UK and abroad.

The land ownership issues posed by the former MGPs in the UK are complex and this greatly effects how forensics may be used in the UK. When this is combined with the range of different processes used, the different by-products formed, how these were handled, used and disposed of and the potential impacts other nearby historic industries, it creates a very complex picture.

Tuesday 9<sup>th</sup> April 2013

**DOUBLE FEATURE**

18:00 for 18:15

**The Lapworth Museum of Geology**

*Talk 1: (18:15 to 19:00) Advances in Groundwater Sampling Methodology in Long Screened Wells and Monitoring Boreholes*

**Peter Dumble (Waterra In-Situ) and Lindsay McMillan (University of Birmingham)**

Three alternative methodologies are generally advocated for groundwater sampling. These are: "3 to 5 well volume purging"; "low flow" / "micro purging"; and "passive" / "no-purge" sampling, though rarely is the appropriateness of any of these considered in relation to the presence of mixing and vertical flow in the well or in respect of the length of the well screen.

An overview of research and development into the interpretation of water quality data from long screened wells and the implications for contaminant studies is presented including some new insights from recent numerical modelling and fieldwork investigations at the University of Birmingham.

Preliminary findings from this research highlight the need for careful selection and positioning of sampling equipment combined with a better understanding of vertical flows. These are necessary pre-requisites to understanding bias in data and towards a more rigorous interpretation of groundwater quality data.

*Talk 2: (19:15 to 20:00) Advances in Environmental Analysis*

**Sarah James (Environmental Scientifics Group) and Amy Parekh-Pross (Environmental Scientifics Group)**

Environmental pollutants such as Mercury, Lead, Arsenic, Polyaromatic Hydrocarbons (PAHs), Pesticides, Polychlorinated Biphenyls (PCBs), Dioxins and Furans can potentially have an adverse impact on both human health (cancer, birth defects, respiratory, brain and kidney damage) and our environment.

The field of analytical chemistry has developed to face challenges in the environmental industry. This sector has advanced from the use of traditional, slow and cumbersome methods to fast, sophisticated techniques that are used to analyse for compounds in diverse matrices (groundwater, waste water, soil, sediments and air samples). The evolution of environmental chemistry continues with advances in hyphenated techniques, software development, instrument sensitivity and production practices.

There are a number of ongoing issues in the environmental sector, including the range of Total Petroleum Hydrocarbon (TPH) methodologies, volatiles analysis, sample matrix complexities, laboratory variability, emerging compounds and the implementation of the "Deviating Sample Policy", which has had a significant impact on sampling, analysis and data validity. This presentation also provides guidance on sampling, holding/stability times and consequential financial liability associated with data obtained from the analysis of "deviant samples".

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Email: [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk)

Tuesday 14<sup>th</sup> May 2013

*A Thermogeological Journey*

1800 for 18:30

**The University of Wolverhampton**

**David Banks (Holymoore Consultancy Ltd, author 'An Introduction to Thermogeology')**

The soils, rocks and groundwaters in the shallow subsurface have long been recognised as a potential source of space heating, via the use of the *ground source heat pump* to extract heat from the ground.

The science of the occurrence and exploitation of shallow, low-enthalpy ground-source heat has been termed *thermogeology* and its fundamental concepts will be covered in this lecture. Increasingly, the value of the ground as a source of space-cooling, dehumidification and air-conditioning is also being emphasised.

The most forward-thinking European nations recognise that the problem of "heat poverty" is somewhat illusory: most urban communities possess plenty of heat – indeed they contain many large commercial and industrial complexes who find it difficult to dispose of waste heat quickly enough in the summer. The problem that many cities face is that of "*plenty of heat, but at the wrong time, and in the wrong place*".

This lecture will argue that the huge volumetric heat capacity of the ground and groundwater allows significant quantities of surplus heat or "coolth" to be stored from seasons of plenty to seasons of deficit. Regions of surplus heat can also be linked to loci of heat deficit via district heating and cooling systems or, conceivably, by groundwater flow pathways. Rather than thinking of the ground as a straightforward "source" of environmentally friendly heat, we can now regard the ground as a huge heat storage unit: a thermogeological accumulator that can be coupled into urban district heating and cooling networks.

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Email: [geolsoc\\_wmrg@live.co.uk](mailto:geolsoc_wmrg@live.co.uk)

## Other Local Events

If you can't wait until the next Group talk, why not attend one of our neighbours?

WMRG / GSL members are normally welcome to attend meetings of other societies/ groups but, we advise that you always check with the relevant representative first.

Below is a summary of events for February / early March:

### **Saturday 2<sup>nd</sup> February – Black Country Geological Society** **10:30 for 11:00**

*Rowley Hills (Conservation Day)*

For more details contact [fieldsecretary@bcgs.info](mailto:fieldsecretary@bcgs.info)

### **Thursday 7<sup>th</sup> February – North Staffordshire Group of the Geologists' Association** **19:30**

*How big is your bang? (Volcanoes)*

**Speaker** Dr Dougal Jerram (Dougal Earth)

**Venue:** Keele University. William Smith Building, Room 0.06.

For more details visit [www.esci.keele.ac.uk/nsgga](http://www.esci.keele.ac.uk/nsgga)

### **Thursday 7<sup>th</sup> February – Herdman Society Symposium** **09:30 until 17:00**

*Geoscience Frontiers 4* (charges apply)

**Speaker** Various

**Venue:** University of Liverpool. Sherrington Lecture Theatre

For more details contact [herdman@liverpool.ac.uk](mailto:herdman@liverpool.ac.uk)

### **Monday 11<sup>th</sup> February – Lapworth Lecture Series** **17:00 until 18:00**

*First Century of Geochronology, from Holmes to EARTHTIME*

**Speaker** Dr Daniel Condon (NERC Isotope Geosciences Laboratory)

**Venue:** University of Birmingham. Lapworth Museum of Geology

For more details email [j.c.clatworthy@bham.ac.uk](mailto:j.c.clatworthy@bham.ac.uk)

### **Monday 25<sup>th</sup> February – Lapworth Lecture Series** **17:00 until 18:00**

*Drilling for Renewable Heat: Recent Geothermal Experiences in Northern England*

**Speaker** Professor Paul Younger (University of Glasgow)

**Venue:** University of Birmingham. Lapworth Museum of Geology

For more details email [j.c.clatworthy@bham.ac.uk](mailto:j.c.clatworthy@bham.ac.uk)

### **Saturday 2<sup>nd</sup> March – Black Country Geological Society** **10:30 for 11:00**

*Return to Barr Beacon (Conservation Day)*

For more details contact [fieldsecretary@bcgs.info](mailto:fieldsecretary@bcgs.info)

### **Monday 11<sup>th</sup> March – Lapworth Lecture Series** **17:00 until 18:00**

*In the Footsteps of Professor Lidenbrock: A Geochemical Journey to the Centre of the Earth*

**Speaker** Professor Rob Ellsam (FRSE, Director – Scottish Universities Environmental)

**Venue:** University of Birmingham. Lapworth Museum of Geology

For more details email [j.c.clatworthy@bham.ac.uk](mailto:j.c.clatworthy@bham.ac.uk)

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