

CHARNIA

The Geology Section
of the Leicester Literary
& Philosophical Society



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The Geology Section acknowledges the assistance of the Curry Fund of the Geologists' Association in the production of this banner

Our new publicity banner

**The newsletter of the Geology Section (C) of the
Leicester Literary & Philosophical Society**

www.charnia.org.uk

January 2009

Editorial

Cor, a real winter. Many of us can still remember them (62/63 anyone?), but the present one is a reminder that our temperatures, despite global warming, are still capable of falling sharply. This present winter is not in the same league as the 62/63 deep freeze of course, unless February and March surprise us, but nevertheless we have experienced extended spells of freezing temperatures recently. What's that got to do with geology you might ask? Well, not much directly, but if you are prepared to don suitable clothing and gather together your hammers and sample bags, the winter offers excellent opportunities for studying geology in the field. The reason of course is that all the vegetation dies back, revealing sequences barely glimpsed in the Spring and Summer. Access to sites is often easier too, and other folks are much less likely to be there to get in the way of your definitive locality photographs. So this is a plea not to write off the winter months from your personal field trips calendar. Get out there and enjoy the winter sunshine, and then send your field shots to me at 'Charnia'!



Bradgate Park in the depths of winter

The great outdoors in winter is not for all of us however, but there's always the consolation of the Geology Section's excellent indoor winter programme. One of its undoubted highlights is the Saturday Seminar, again scheduled for March this year in the fine surroundings of the Ken Edwards Building. There's a rumour that 2009 is the 200th anniversary of the birth of Charles Darwin, and we're joining in by taking that great scientist as our broad theme and linking in tales of the great pioneers of geology who preceded and succeeded him. We've got some cracking talks lined up, two with very different takes on Darwin himself, and four others which deal with such Victorian mega-stars as William Buckland, Henry de la Beche, Charles Lapworth, and Roderick Murchison. We've also got a gem of a talk about that fascinating character James Parkinson, famous for his 'disease', but also instrumental in the formation of the Geological Society and a true pioneer if ever there was one. That talk will be given by Dr Cherry Lewis, the author of the best-selling 'The Dating Game'. You will find details about the day elsewhere in this Charnia, and any member of the organising committee (myself, the Chairman, Vice-Chairman, Publicity Officer, Professor Aldridge and David Baines) will be happy to provide you with any other information you might require. Tickets are now available from Secretary Fiona Barnaby (or any committee member will pass your request and money on to her), priced at £20 to include buffet lunch and £13 without lunch. And we'll be putting on a post-seminar wine reception too, also in the Ken Edwards and only a short step from the lecture theatre. One of the original aims of the Section in starting the Saturday Seminar was to throw open our doors to the greater public, and that remains a key element in our intentions. Please tell your friends about the day, and encourage them to attend.

In the past the Section has been well entertained by talks from a prominent member of the Geology Department at Leicester University, Dr Jan Zalasiewicz, and it may interest members that Jan has branched out into the field of popular geological literature, with a book entitled 'The Earth after us', published by Oxford University Press. One of Jan's major interests of recent years is legacy that we, humanity, will leave to the Earth and how the phenomenal impact we are currently making will be reflected in the geological record in the far distant future. It's not an encouraging prospect, but it is a fascinating subject, imaginatively dealt with and lucidly written. Ideal for winter reading, and available from the usual outlets, including the Leicester University bookshop and Amazon on the internet.

Andrew Swift

Winter Programme 2009

Except where stated, all meetings will be held at 7.30pm in Lecture Theatre 3, Ken Edwards Building, University of Leicester campus.

Details: Chairman Dr. Joanne E. Norris, 0116 2833127,

j.e.norris@ntlworld.com

Wednesday January 14th

Professor Gerry Slavin (Barts & The London): **Geology and Disease.**

Monday January 26th

Parent Body Lecture, **New Walk Museum, Leicester.**

Dr Phillip Manning (School of Earth, Atmospheric & Environmental Sciences & The Manchester Museum, University of Manchester): **Grave secrets of dinosaurs.**

Wednesday January 28th

Professor Stephen Hesselbo (Department of Earth Sciences, University of Oxford): **The geological record of massive volcanism and large meteorite impacts: a view from the British Isles.**

Wednesday February 11th

Members Evening, **New Walk Museum, Leicester.**

Wednesday February 25th

Dr John Bridges (Department of Physics and Astronomy, University of Leicester): **The geology and evolution of Mars.**

Wednesday March 11th

Dr David Williams and Dee Edwards (GeoEd Ltd.): **Is it real? From trilobites to whole outcrop.**

Saturday March 7th

Annual Saturday Seminar, KEB LT1, University of Leicester, 11am
'Charles Darwin and the Great Pioneers of Geology'

Wednesday March 25th

Annual General Meeting, and Chairman's Address

Dr Joanne Norris (Halcrow Group Ltd., Peterborough). **Rocky tales of a geotechnical engineer.**

Abstracts

Wednesday 14th January 2009

Geology and Disease

Professor Gerard Slavin (Barts & The London)

Geological disasters such as volcanic eruptions or earthquakes are clearly seen to impinge directly on human health but even such overt events may have effects which are not initially perceived as a resultant of that event. More subtle are illnesses which arise from our "normal" geochemical environment due to lack of essential elements or the presence of toxic elements which produce disease. In addition, we have altered our environment with industrial use of geochemical materials which have had profound effects on health. Examples will be chosen to illustrate these processes particularly from the Midlands and North of England in the distant and recent past which serve as a warning for the future for us but may be then extrapolated to the present day third world where environmental health disasters are still occurring.

Monday 26th January 2009

Parent Body Lecture, New Walk Museum

Grave secrets of Dinosaurs

Dr Phillip Manning (University of Manchester)

This is a palaeontological detective story, a 65-million-year-old case so cold it's the hottest development in modern dinosaur-hunting. The victim, a hadrosaur, was discovered in the Hell Creek Badlands of North Dakota in 1999, by a college student and enthusiastic fossil hound named Tyler Lyson. What seemed at first glance a solid but routine find would soon reveal itself to be one of the rarest of all specimens: a dinosaur mummy and not just any mummy, but perhaps a fossil that had many unique grave secrets locked within the remains waiting to be unearthed. A team from the University of Manchester joined Tyler and built a unique group of scientific and technical experts in an extraordinary project to excavate, preserve, and analyse the dinosaur dubbed 'Dakota'. The talk will explore the state of the art methods and science that have been applied in this study, calling upon many scientific disciplines and employing such high-tech tools as electron microscopes, LiDAR, and the world's largest CT scanner originally built to examine

NASA spacecraft, now put to work imaging an amazing beast who died over 65 million years ago, yet lives on as a fossil witness to a lost world entombed in stone.

Wednesday 28th January 2009

**The geological record of massive volcanism and large meteorite impacts:
a view from the British Isles**

Professor Stephen Hesselbo (University of Oxford)

At first sight, convincing evidence for the most rapid and dramatic processes known to act on the earth's surface would appear to be missing from the British geological record. Was this corner of the planet really so quiet for such long periods of geological time? Recent work is overturning this point of view and it is now clear that deposits once thought of as volcanic in origin are actually the result of meteorite impact, and organic-rich sediments that form the source materials for petroleum have their origins in some of the world's most voluminous volcanic eruptions.

Wednesday 11th February 2009

Member's Evening, New Walk Museum



The audience at the last Member's Evening in February 2008

Talks will include Bruce Smith's Adventures in Mongolia and John Dickinson on the proposals for a new Bardonia Quarry.

Wednesday 25th February 2009

**The Geology and Evolution of Mars
Dr John Bridges (University of Leicester)**

The history of climate change on Mars is recorded in its landscape and rocks; from playa lake deposits exposed at the *Opportunity* landing site dating from the Noachian Period >3.7 billion years old to recent kilometre-thick aeolian deposits around the polar regions. Understanding the history of climate change on Mars is central to understanding how conditions evolved to make watery habitats available on the planet. It is also an underlying motivation for much of the present and planned Mars exploration by planned landers such as ExoMars. Since the advent of space missions to Mars in the 1960s the coverage and resolution of satellite data has steadily improved with the current *HiRISE* imagery from *Mars Reconnaissance Orbiter* (MRO) providing 20 cm/pixel images. This increase in detail and variety of images has allowed identification of the main processes that have shaped the planet's surface, including orbital forcing inducing climate changes. This talk will show the recent advances made in understanding the formation of the surface of the Red Planet.

Wednesday 11th March 2009

**Is it real? From trilobites to whole outcrop
Dr Dave Williams and Dr Dee Edwards (GeoEd Ltd.)**

In 1866 Henry A. Ward of the University of Rochester, New York issued his *Catalogue of Casts of Fossils*. It makes fascinating reading. Among the 1200 items were 80 trilobites and no less than 8 Plesiosaurs. Fossil replicas have an honourable history.

Silicone rubbers can now be used to mould large areas, so that many square metres of outcrop can be replicated for research, teaching or display. Recent work that we've done ranges from camel and dinosaur footprints to work with BGS on bedding planes in the Leicester area. Techniques used in replica production will be shown.



In the cutting shed at Guiting Quarry

SCENES FROM THE JUNE



2008 COTSWOLDS WEEKEND

Fossilling in Hornsleasow Quarry



The party on Leckhampton Hill



The party at Hock Cliff

Wednesday 25th March 2009

AGM and Chairman's Address

**Rocky tales of a geotechnical engineer
Dr Joanne Norris (Halcrow Group Ltd.)**

A geotechnical engineer's role is not always straight forward, as we have to understand and interpret the complex ground conditions to enable others to design structures. Prior to this though, we are detectives hunting out any background information we can find to help us assess the nature of the ground before we carry out an intrusive site investigation.

This presentation will review the trials and tribulations of supervising a major site investigation project for a new tidal barrier and flood defences and how the discovery of a buried palaeovalley had implications on the location of the tidal barrier.

Annual General Meeting, Wednesday 25th March

It is that time of year again when the committee has to decide its nominees for the following year. We are always looking for new blood to join the committee and all positions are up for election from the officers - Chairman, Secretary etc to normal committee member posts. So if you feel you are interested in any post, please have a chat with any present committee member or fill in a nomination form and raise a proposer and a seconder. Nomination forms are available on the website or from the Secretary.

**TICKETS NOW ON SALE FOR THE SATURDAY
SEMINAR 2009**

Charles Darwin and the Great Pioneers of Geology

Saturday March 7th 2009

Ken Edwards Building, Lecture Theatre 1, 10.30am for 11.00am start

Speakers are Professors Peter Worsley and Paul Smith, Dr's Lyall Anderson and Cherry Lewis, and Chris Duffin and Tom Sharpe

The Saturday Seminar is our flagship meeting of the winter programme, and over the years we've built up its prestige so that it stands alongside the best

day meetings in the country. Each year we identify a topical theme and then find the speakers to do it full justice. This year we believe we've done it again, although for once the theme wasn't too hard to decide upon. Its 200 years since the birth of the man who changed the way we thought about evolutionary biology, indeed he introduced and championed that concept in a decidedly hostile world until its message was generally accepted. Charles Darwin was a naturalist of wide scope, and geology was high amongst his interests. It's that side of his scientific portfolio we are concentrating on, and to support the two talks on the man himself we are presenting an interesting mix of four lectures on some of the greats of geology from around the time that Darwin was working, including James Parkinson, William Buckland, Henry De La Beche and Charles Lapworth. We will circulate titles and running order when the sub-committee has finalised the programme.



Bill Sellars and decidedly unstable dinosaur, from last year's seminar

The basic format for the day remains the same as in previous years, but we've tweaked the timings a little this year. Thus, the first lecture will begin at 11.00am, to give everyone, especially our speakers, the opportunity to get to the venue without time pressures. We will open the doors of the Ken

Edwards Building at 10.30am. For those of you who need refreshment before the day begins, we are recommending that you use the new café in the very impressive recently inaugurated library building, only a short distance from the KEB. That facility should be available for most of the day. Lunch will be of the usual buffet type, and we will take a tea/coffee break in mid-afternoon. The wine reception that followed the meeting last year proved very popular and we will be doing that again this year, all included in the ticket price.

Tickets are available now at **£20 with lunch** and **£13 without lunch**
On sale at all evening meetings or from the Secretary (contact details on back page)

Provisional Summer Programme 2009

Saturday or Sunday 9th or 10th May – Bardon Quarry. Leader: Frank Ince. TBC

Friday 5th to Sunday 7th June – Weekend excursion to Llangollen. Leader: Cynthia Burek. **BOOKINGS NOW BEING TAKEN!**

Saturday 11th July – Gill Mill Farringdon Sponge Beds and the William Smith Museum. Leader: Owen Green.

Tuesday 21st July – evening visit to Tilton Railway Cutting.

August – Joint meeting with the Warwickshire Geological Conservation Group. TBC.

Saturday 12th September - Whitmans Hill Quarry, Storridge, Abberley & Malvern European Geopark. Leader: TBA.

Saturday 10th October – National Coal Mining Museum, Wakefield.

For further information, please contact the Field Secretary Helen Jones.

Festival of Geology, November 1st 2008 Geologists's Association 150th anniversary

Andrew Swift, Bruce Smith, Fiona Barnaby, Margaret East and myself headed to London to join the Geologists' Association 150th anniversary celebrations at the Festival of Geology on November 1st 2008. Armed with new publicity material, partly funded by the GA's Curry Fund, we set up our display and stand of two new posters, a roller banner, membership leaflets, a selection of past Charnias, seminar abstract booklets and copies of the recently produced Building Stones of Leicester book, in the North Cloister, at University College London. The North Cloister had been reserved for

societies such as ours, with the South Cloister hosting the more commercial exhibitors and the GA itself. A further large hall known as the Discovery Room was devoted to Rockwatch and children's activities. This was the first time the Geology Section had participated in the GA's annual Festival so it was interesting to observe the wide variation in the nature of the displays and the apparent lack of organisation and welcome from the GA.



'The Team' man the Geology Section stand. Inset are Andrew and Joanne

With the main focus of activities in the Discovery Room and the South Cloister, we were pleased to see a steady flow of members of the public and amateur and professional geologists visiting our stand throughout the day. The main talking point was Leicestershire's famous fossil locality and beauty spot Charnwood Forest. To our surprise there were even a few people from the East Midlands area in attendance, and to them and others we had the opportunity to sell the advantages of joining the Geology Section. Our newsletters and booklets proved to be very popular too. We even managed to sell a few Building Stones books and raised a total of £63 on the day towards funds.

There were six free lectures during the day, and we arranged a rota system whereby we could all hear at least some of them. They were by; Dr Simon Day on 'Traditional knowledge of tsunamis saves lives', Professor Duncan Wingham on 'Climate Change', Dr Adrian Jones, on 'Diamonds from Big Bang to Big Bucks'; Professor Mike Benton on 'New ways of looking at dinosaur evolution', Doreen Smith on 'Local Heroes' and Mike Howgate on 'Crystal Palace – Prehistoric Animals'. The lectures were very good but there was one big drawback which certainly put Andrew off attending - the lecture room was far too small for the potential audience and to guarantee a seat you had to queue well in advance of the lecture.

However, we all had a fun day at the festival and took it in turns to man the stand, while the others attended the lectures, browsed the stalls and exhibits or even did a little shopping.

Finally, I'd just like to like to acknowledge the assistance of the Curry Fund of the Geologists' Association for the grant towards the cost of producing the display materials, to David Baines, assisted by Andrew Swift, for the poster and banner designs and Andrew for the leaflet design and photographs. I would also like to personally thank Bruce, Fiona, Margaret and Andrew for their sterling efforts on the day. Well done.

Dr Joanne Norris

Christmas Meeting at New Walk Museum December 17th 2008

The Christmas Meeting is a long-established tradition in our Winter Programme, and offers the only occasion when members can meet in a convivial social environment, where having fun is more important than listening to, and being informed by, a lecture. In fact it's the only one where formal talking plays no part, and as ever, the participants this year enjoyed a lively and stimulating evening. We are indeed fortunate, and must never take for granted, that we enjoy our festivities in the Dinosaur Gallery at New Walk Museum. When we're in there at Christmas I am always reminded of that famous picture of a dinner party taking place within Benjamin Hawkin's model of an *Iguanodon* at the Crystal Palace on New Year's Eve 1853. We don't quite seat ourselves inside the *Cetiosaurus*, but he/she is very close and watches over us solicitously. The New Walk Museum is a very good place to imagine oneself as a Victorian, especially Geology Section members, as the museum is our birthplace.

This year as well as the customary goodies brought along by members for the buffet, we enjoyed a film show celebrating a decade since the re-

introduction of the weekend field excursion, and also a quiz where members were invited to identify 25 famous/leading geologists from their photographs. Ron Johnson and Dennis Gamble brought along some highlights from their extensive collections, Ron with minerals and Dennis with examples from his cephalopod collection.



The party at the Christmas Meeting



Another view of the Christmas Meeting

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