

CHARNIA



Derbyshire Excursion, May 2010, Hob's House

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

May 2010

www.charnia.org.uk

Editorial May 2010

As time passes, it seems that we, the human race, become ever more arrogant in our assumption that all the Earth's resources are there solely for our use, or should I say, exploitation. We also seem to believe that we can control or at least overcome most things that the Earth's systems can throw at us. But every now and again Mother Nature demonstrates that, as ever, she is in charge, and we are powerless to do anything about it. Notwithstanding the very real distress and inconvenience created by the Iceland volcanic eruption, a part of me was pleased that once again we were put in our rightful place. It was certainly an interesting episode, and offered a tantalising glimpse of what might have happened in the geological past, when much larger eruptions and global volcanism held sway. If a tiddling little eruption like the Iceland one can send a cloud of glassy ash over to Europe and ground every plane, what would have been the global effects of the eruptions of the Deccan Traps towards the end of the Cretaceous, or other well documented periods of massive volcanism in the record? Suddenly, theories about mass extinctions take on some substance and become comprehensible. It may be just me, but have you noticed how cool the weather has been just recently, since the Iceland eruption? And on the subject of nature red in tooth and claw, we mustn't forget the terrible earthquakes in China and Chile, which were far worse in their effects than the inconvenience caused to certain sections of humanity when it couldn't fly its planes. Another thing that I find strangely insightful about the plane business is that once the economic effects of the shutdown became acute, the cloud wasn't considered to be quite so dangerous any more and up the planes went again. Now it couldn't be that fiscal considerations were allowed to override safety concerns could it? No, of course not.

Well, moving on from my somewhat robust take on recent events, let's move on to more cheerful topics, which brings me to the Saturday School and some interesting snippets that reached my ears. Once again, we had a wonderful day of talks, heard by one of our largest ever audiences, over 100. Our organisation and efficiency again shone through. We can allow ourselves a little self-congratulation, but without complacency. We have another one to do next year. What I actually heard shortly after the day was that our success and the obvious health of the Section are interesting others. I was actually asked, what is the secret of your success? Why are you doing well when so many other societies are struggling? Modesty on behalf of the Section and its

estimable members forbids me from recording what I feel to be the reasons for that, but whatever they are, long may they continue!

Our summer programme is now complete and can be found elsewhere in Charnia, and I urge you all to try and turn out for the excursions if you possibly can. Its an attractive programme, and if the one we've recently had to Derbyshire is any guide, we're in for a good summer. The 2010-2011 winter programme, thanks to the efficiency of ex-chairman Joanne Norris and present chairman Mark Evans, is also well advanced and a provisional version is also in this Charnia. Our AGM in March went well and I was pleased to see an incoming of new blood onto the committee. We might be doing well, but new ideas and enthusiasm are vital if the future health of the Section is to be assured. Please check out the back cover for the make-up of the new officers and committee, and how to get in touch with them.

Andrew Swift

Summer Programme 2010

Friday 4th – Sunday 6th June

Sandown, Isle of Wight. Leader Dr Dave Martill and/or Steve Radforth
Saturday – mainly complete Cretaceous sequence at Yeaverland
Sunday – morning only, ?Whitcliff Bay

Tuesday 22nd June

Tilton Railway Cutting. Leader Dr Roy Clements

Saturday July 3rd

Bardon Quarry. Leader Frank Ince

Hopefully, mineral collecting will be possible subject to Health & Safety considerations

Saturday July 17th

Wicklesham Quarry (active), **Coxwell Pit** SSSI, plus 1 other locality. All near Faringdon, Oxfordshire

Leader: Owen Green (Oxford University)

Cretaceous Faringdon Sponge Gravel, should be excellent fossil collecting.

Saturday August 8th

Quarries in the **Ancaster** area. Leader John Aram

Saturday September 4th

Must Farm, near Bradley Fen, Whittlesey. Leader Cliff Nicklin

Recently opened, this new quarry should offer good collecting prospects in the Oxford Clay.

October

An as yet unconfirmed trip will hopefully be made to the Natural History Museum. Details to follow. Leader Martin Munt

Further details will be given in the circulars that precede each trip. They can also be obtained from Field Secretary Helen Jones on 0116 2392872, helenjonesx@hotmail.com

Field Trip Report

Excursion to Derbyshire, May 8th 2010



At Hob's House

The British weather is fickle, we all know that, but May 8th took some beating. Not to beat about the bush, it was perishing! We all looked like arctic explorers with our triple layers of coats, scarves and hats. Nevertheless,

there was an excellent turnout of 21 for the first excursion of the ?summer to Derbyshire, led by Section member Mike Allen. We met at Monsal Head, in the car park by the hotel, and the first locality was Hob's House landslip, about a mile away south west along the valley of the Wye. The track was rather testing in places but we stuck it out, stimulated by the scenic surroundings and Spring flowers. At Hob's House an impressive landslip could be seen, the derivation of the name obvious from the configuration of a particular group of the large slipped blocks. Its interesting how often the old name-givers brought the devil into their appellations (hob = devil). The rock hereabouts is the Monsal Dale Limestone, of Brigantian (Dinantian, Lower Carboniferous) age. At Hob's House it sits on Shacklow Wood Lava and the plane between them acted as the slippage surface. After an improving hour or so at Hob's House studying the coral marker beds and trying to extract fossils (with some difficulty, Carboniferous Limestone is notoriously difficult to work with a hammer) we walked back along the same track to Monsal Head. Here we paused for lunch, some in the café, others who had presciently brought packed lunch, in their cars.



In Nettler Dale

Then we drove down into Ashford in the Water where we parked. From there we took off on a lovely ramble through wonderful scenery with fine natural history all around us, studying the remnants of the Ashford Marble

industry. The circular walk took us from Ashford – Sheldon – Ashford and on its course we observed not only the dark Ashford Marble (a facies of the Monsal Dale Limestone), but also the so-called Rosewood Marble, and lots of evidence of submarine slumping. We crossed the line of the Dirtlow Rake lead seam at a couple of points, and the leader also told us about the chert mining which went on around Ashford. So despite the attractively rural nature of the area today, it was clear that in the past it had been the scene of much industry. The 'marbles' are not true metamorphic rock as we usually understand it, but simply darker versions of the local limestone, of very fine grain with a tendency to take a polish. They were used mostly for ornamental ware, and memorials.



Basaltic lava near Ashford in the Water

As the day wore on we said goodbye to members who had to depart, but a hard core of nine of us were still with Mike at the end of the walk as he led us along the Wye to see an exposure of 'toadstone' or basaltic lava, and also a sough emanating from the Dirtlow Rake. The discovery of good stands of toothwort also excited the members interest. A cadre was still present right at

the end of the day for an exposure of trilobite-yielding rocks on the A6 nearby. A fine day all round despite the gloomy cold weather, seemingly with rain about to descend at any time, but not actually breaking into rainfall for long. We all resolved that we really must visit Derbyshire more often.

Andrew Swift

Winter Programme, 2010-2011

**All talks held at 7.30pm in Lecture Theatre 3, Ken Edwards Building, on the main University of Leicester campus, except where stated.
Refreshments served from 7.00pm**

Details: Chairman Mark Evans, 0116 2254904, mark.evans@leicester.gov.uk, or, acting Vice-chairman Joanne Norris 0116 2833127, j.e.norris@ntlworld.com

2010

Wednesday October 6th

Professor John Smellie (Department of Geology, University of Leicester):
Antarctica - the largest glaciovolcanic province in the world and how its volcanic products can help to reconstruct past ice sheets

Wednesday October 20th

Dr Jeff Liston (Museum & Art Gallery, University of Glasgow)
Skullduggery: how big was Leedsichthys?

Monday November 1st

Parent Body Lecture, New Walk Museum, Leicester.
Dr Hazel Rymer (Department of Earth & Environmental Sciences, Open University). Theme: monitoring volcanoes

Wednesday November 3rd

Dr Philip Wilby (British Geological Survey, Keyworth): Theme:
exceptionally well preserved fossils in Charnwood Forest or at
Christian Malford (Wilts)

Wednesday November 17th

Dr Tim Wright (School of Earth & Environment, Leeds University)
Fast and furious: witnessing the birth of Africa's new ocean

Wednesday December 1st

Dr Ken McNamara (Department of Earth Sciences, Cambridge University)
Stromatolites: microbes making rocks

Wednesday December 15th

Christmas Meeting, New Walk Museum, Leicester

2011

Wednesday January 12th

Wednesday January 26^h

Dr Sanjeev Gupta (Department of Earth Science & Engineering, Imperial College). **Catastrophic megaflooding in the English Channel and on Mars**

Wednesday February 9th

Wednesday February 23rd

Members Evening, New Walk Museum, Leicester

Wednesday March 9th

Saturday March 12th or 19th

Annual Saturday Seminar, University of Leicester

Wednesday March 23rd

Annual General Meeting and Chairman's Address
Mark Evans (New Walk Museum, Leicester)

Chairman's Report to the AGM, March 24th 2010

As I come to the end of my third year at the helm of the Section, I have mixed emotions about standing down as Chairman, but with the pressures of my day job I feel it is the right time to hand over the Chair to Mark Evans, who I'm sure will successfully lead the Geology Section into the second decade of the 21st century. I'm looking forward to my new role on the committee as Publicity Officer, and will continue to work hard on behalf of the Section.



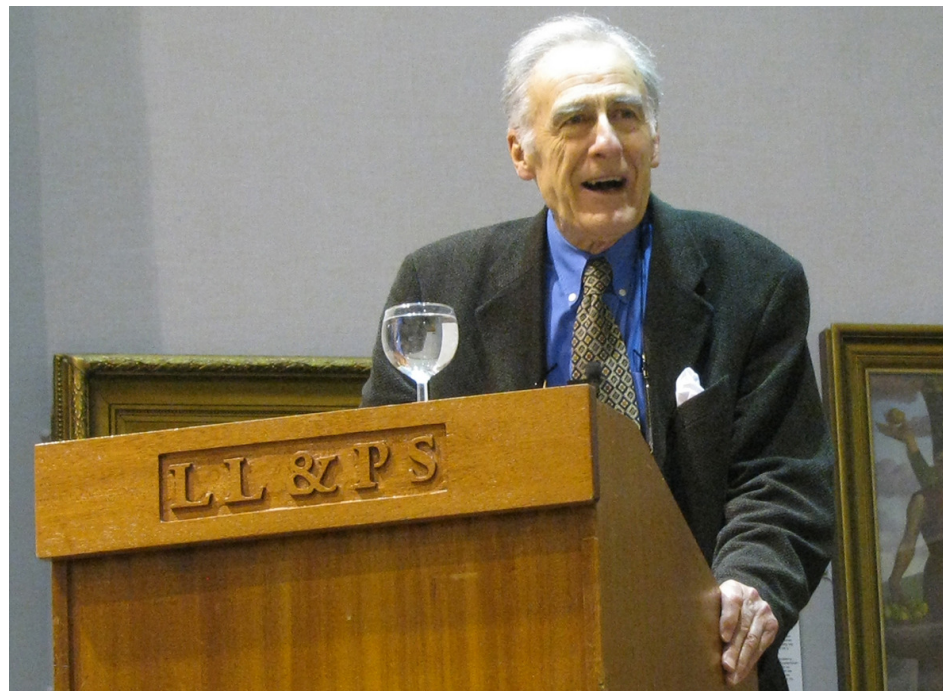
Two shots from the Member's Evening of February 24th 2010



Two quarries near Ancaster in May 1999, are you attending this year's excursion?



The winter programme was, I believe, one of interest and variety to both members and our many visitors, as we ranged far and wide into the world of geology, touching on many of the more esoteric aspects of our boundless science. This was reflected in our attendance numbers, which averaged 42 over the year. We had many highlights in the programme, but I feel I must mention the Parent Body Lecture, when Professor Aubrey Manning captivated the audience with his talk 'Life and the Earth: interlocking histories', and once again we filled the Victorian Gallery at New Walk Museum.



Professor Manning demonstrates the style that won him TV fame

The recent Annual Saturday Seminar on 'The Earth's Crazy Paving: a 21st century perspective on Plate Tectonics' was also a great success. The day consisted of seven talks by leading experts, followed by an extended discussion session, when probing and fundamental questions on the nature of plate tectonics were examined and debated by the speakers and the very well informed audience. A total of 104 people attended the event, testifying to the enduring appeal of this, our flagship meeting.

This year's Christmas and Member's Evenings proved to be entertaining events. Our thanks go to Andrew Swift for his photographic review of the Geology Section in 2009 which was presented at both meetings and to Dennis Gamble for bringing along fine examples from his extensive fossil collections. At the Member's Evening, Trevor Ford (Professor William Whitehead Watts), John Dickinson (What is a man-engine?), Ron Johnson (Australian Landscapes) and Bruce Smith (Two wrinklies in New Zealand) delivered well-received presentations.

We had a very busy, active and occasionally wet summer field programme in 2009. The programme started in early April with a visit to Bardon Quarry to view the proposals for a new quarry. In May, we visited Clipsham and Castle Bytham quarries in Rutland, where we viewed the Lincolnshire Limestone and the overlying glacial deposits, and the fine church at Exton. This was followed by our weekend field excursion to a very wet Llangollen at the beginning of June. The first of two July outings took us on a tour of Oxfordshire's disused quarries as well as visiting Buckland's grave and residence at Islip, and William Smith's memorial at Churchill. The second trip was to Tilton railway cutting which, sadly, was a washout. Only the Chairman, Field Secretary and leader (Andrew Swift) braved the torrential rain to view the familiar Jurassic sequence. Peter Long also joined us but made the wise decision to stay in the car! In total contrast our trip to Bradley Fen at Whittlesey in August took place under clear skies and scorching sun. The party hoped to find some of the vertebrate fossils for which the quarry is famous, but most of us came away empty handed. The same could be said for our visit to Whitman's Hill in the Malverns in early September. Here, the once abundant trilobites had been picked clean by preceding parties, with the only two finds of the day going to Alan Dearden and John Webster. Our now annual joint trip with the Warwickshire Geological Conservation Group took us to Boon's and Jee's quarries at Hartshill near Nuneaton in late September. Both quarries are now disused, but are conserved as first class geological and wildlife reserves. In October we visited the National Coal Mining Museum near Wakefield and descended into the bowels of a preserved coal mine, thereby getting some insight into the tough life of a coal miner.

Encouragingly, we continue to see membership numbers increasing year by year, and this last one was no exception. We are proud that the committee's efficient management of the Section continues to allow us to hold subscriptions at the present low rates, and also that we have not gone down the road of charging visitors to attend our meetings.

We had three bumper Charnia newsletters during the year, edited and produced by Andrew Swift, and our website, maintained by Dennis McVey, is still one of the best local geological society sites in the country.

As most of you know, the Parent Body is celebrating their 175th anniversary in 2010. As part of their celebrations they have put together an exhibition about the Lit and Phil which, after initial display in New Walk Museum from late March, will be touring the museums in the county over the forthcoming year. The Geology Section has had an input into this exhibition, and for this we are extremely grateful to Andrew Swift for undertaking to produce the Geology Section panel and liaising with the Parent Body and designers.

Finally, I would like to thank the Saturday Seminar organising committee (Joanne Norris, Andrew Swift, Mark Evans and Kay Hawkins, supported by Professor Andy Saunders from the Leicester University Geology Department) and reception committee (Fiona Barnaby, Margaret East and Dennis Gamble) for their hard work in organising this year's event. My thanks also go to this year's officers and committee for efficiently running the Section and overseeing its activities. Our Student Representative, Steve Briggs, founded a student Facebook group of Geology Section supporters, which we should ideally expand to the rest of the membership.

We have a few changes to the committee this year as Kay Hawkins is standing down as Publicity Officer, and Margaret East and Roy Clements, stalwarts of the committee for many years, are also standing down. Our special thanks go to Roy for his sterling efforts over many years on behalf of the Section and to Margaret for organising refreshments at meetings over the past couple of years. We now welcome Gillian Graham into this role. I'd also like to welcome the new committee members, Professor Mike Petterson, Julie Harrald and Roger Latham.

Dr Joanne E. Norris

The Earth's Crazy Paving: a 21st century perspective on Plate Tectonics

A Report on the Saturday Seminar

On March 13th, our annual Saturday Seminar on 'The Earth's Crazy Paving: a 21st century perspective on Plate Tectonics' took place in the Ken Edwards Building at Leicester University. The day promised to be stimulating and

informative, with over 100 people in attendance ready to learn and listen to cutting edge talks by leading plate tectonic experts.



Professor James Jackson holds his audience

Professor Joe Cann set the scene superbly as he recounted his student days and told of how the new controversial subject of plate tectonics began to develop, and eventually gained acceptance. Many of his lecturers didn't believe in this new theory and so were sceptical of accepting the notion that plates moved. They believed that everything was down to sea level change. Professor Hugh Rollinson presented the arguments for and against the theory that plate tectonics processes began sometime during the Archaean (approximately 2.5Ga). This was a thought provoking talk, particularly as the plate tectonics theory is now widely accepted, but it is still uncertain as to when the whole process began to operate.

A last minute change to the programme saw Dr Isabelle Ryder stepping in for Professor Andreas Rietbrock, who had to rush off to Chile to monitor the recent earthquake. Dr Ryder presented new observations on the behaviour of faults when subjected to previously unsuspected stimuli. Two talks followed

on different aspects of mountain building on the continents. Dr Dickson Cunningham explained in highly resolved detail the process of how a continental interior region deforms in response to a distant continental collision, while Professor James Jackson presented a fine exposition on the thorny problem of the mechanics of plate tectonics on continents and shields.



Dr Alan Owen gives us a biological angle

Dr Stephen Jones amazed us with computer graphics of how the plates move and the development of plumes, and how this triggered the onset of glaciation in the Pliocene. The A-level textbook scenario of mantle convection was well and truly thrown out the window with this research. And finally, the concept of how life on land and in the marine realm can change due to plate tectonics was discussed by Dr Alan Owen.

An extended discussion session followed the series of talks, when probing and fundamental questions on the nature of plate tectonics were examined and debated by the speakers and the very well informed audience. It was a shame that not all the speakers were able to stay with us for the debate, but other commitments called them away, mostly to distant foreign climes. Our

sincere thanks go to Professor Andy Saunders for chairing this session and to Professor Cann, and Drs Cunningham, Jones and Owen for fielding the questions.

Although our first priority is to present as fine a seminar as possible, the organising committee are not unaware of the need to balance the books, and once again we were able to add a few much needed pounds to the Section's account, making for an excellent day on all fronts.

Joanne Norris and Andrew Swift

Following the Seminar, the Chairman and I received the following e-mail, which I believe will interest Charnia readers.

Dear Joanne and Andrew,

I have been intending to send a message to congratulate you on the Saturday Symposium, which I thought was well put together, gave a sensation of being at the cutting edge of science, and of genuine benefit to the experts present as well as to more benighted souls such as myself. Our only criticism concerned the public address system which was inadequate for those at the back (including ourselves) to easily hear speakers who had a tendency to mumble into their beards. We also wondered why so few students attended.

My grandfather gave me his English edition (1924) of Wegener's book, (although my brother purloined it while we were away in Africa). The theory of drifting continents seemed to have been largely accepted when we were at Cambridge in the early 1950s -- at least by botanists perhaps because it helped explain plant distribution (see, for example, "The Geography of Flowering Plants", Ronald Good, 2nd edition, 1953). Suggestions of convection as a causal mechanism was given in Arthur Holmes textbook "Principles of Physical Geology" (1951). Nevertheless the complacency of geologists seemed somewhat rattled during the final question-and-answer session, possibly with some of the rancour which the theory originally provoked. The mechanism for drift appeared scarcely more certain than it was formerly. Is magma bubbling up through the cracks between the tectonic plates because they are separating, or are they separating because magma is bubbling up through the cracks? Is the flow of magma beneath the crust more or less chaotic, or are convection currents in the magma pushing the crust along? Are we still at the cutting edge of ignorance, or did I miss something?

Actually, my real belief is that it is due to a host of little creatures with horns, long pointy tails, sharp teeth and wicked grins pulling on the edges of the subduction zones – rather like in a medieval wall painting.

regards,

Richard Lowe

From the Treasurer

May I remind members who are signed up for Gift Aid, that they must inform me if they stop paying income tax i.e. on retirement or cessation of working. And once again, I would like to thank all those who have undertaken to help the Section via the Gift Aid method.



Bardon Hill, we're off for a closer look in July

All photos in this edition of Charnia are by the Editor, from whom copies may be obtained.

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