

CHARNIA



Glaciated landscape, Dash Valley, near Bassenthwaite, Lake District. Binsey in distance.

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

January 2011

www.charnia.org.uk

Editorial January 2011

Here we are at the beginning of another year (by the way, Happy New Year to both of my readers) and it seems no time at all since I was pontificating on the weather 12 months ago, but if one is ever short of a topic in the UK The snow, ice and temperatures have actually been worse and lower, and arrived earlier, this time around, and the mockery you can hear in the background wherever you go is someone like me laughing hollowly about global warming. It's the old jet stream up to its tricks again, insisting on bending northwards and allowing uninterrupted access to all that nasty foreign air from the likes of Siberia. Nevertheless, while all this is going on, we are reliably told that globally we are having the warmest years since, etc, etc. So it's a bit of a confusion zone, and I can't help thinking that's how it's always been, and only in the last couple of decades have we begun to realise that there's no such thing as a black and white picture where geoclimatology is concerned. Now wouldn't it be interesting if the jet stream rather liked its new position and decided to stay there Perishing snowy winters every November to April? After all Edinburgh is more or less on the same latitude as Moscow. Costa Plonka here I come!

All this weather chat has a purpose, and that's to flag our rapidly upcoming Saturday Seminar on March 19th. Topically, we've gone for a glaciology theme this time around, and yet again the planning sub-committee have come up with a terrific line-up of speakers and topics. Flyers have appeared, publicity is rolling into action and we are on course for another winner I'm sure. Charges have been held at last year's level, so it's a great bargain. Our erstwhile secretary will be happy to take bookings, and tickets should be available by the time you read this.

The causes of mass extinctions are also a hot topic, never losing their interest amongst geologists, and I came across an interesting new paper which looks in detail at the lesser studied Devonian mass extinction (more appropriately known as a biodiversity crisis we are told in the paper). The authors conclude that the main reasons for the species crash was the loss of niches and isolated environments due to continent coalescence and sea level rise, which meant that new species generation was seriously impaired. Also, with the breaking down of barriers between basins, some very successful invasive and adaptable species spread rapidly and out-competed and ultimately wiped out the indigenous biota. Please no counter theories to me, check out the paper, and contact the authors if you disagree with them!

Anna Stepanova, Alycia L. Stigall. Invasive species and biodiversity crises: testing the link in the Late Devonian. *PLoS ONE*, 2010; 5 (12).

The following website has a good review:
www.sciencedaily.com/releases/2010/12/101230100050.htm

We have filled our outstanding winter programme slot on February 9th with another topical subject. Professor Phil Donaghue from Bristol has recently appeared with David Attenborough on his 'Life' TV programme, and has agreed to talk to the Section on the same research, the evolutionary origin of animals. One not to be missed.

Andrew Swift

Winter Programme 2011

All talks begin 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 225 4904, mark.evans@leicester.gov.uk or Publicity Officer Joanne Norris, 0116 283 3127, j.e.norris@ntlworld.com

2011

Wednesday January 12th

Dr Rob Sansom (Department of Geology, University of Leicester):

Revelations from rotting fish: experimental decomposition and the origin of vertebrates

Wednesday January 26th

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

Wednesday February 9th

Professor Phil Donoghue (Department of Earth Sciences, University of Bristol): **Shedding synchrotron light on the evolutionary origin of animals**

Wednesday February 23rd

Members Evening, New Walk Museum, Leicester.

Wednesday March 9th

Professor Peter Rawson (Centre for Environmental and Marine Sciences, University of Hull (Scarborough campus) and Department of Earth Sciences, University College London): **From Yorkshire to Argentina: an ammonitologist's odyssey**

Saturday March 19th

Annual Saturday Seminar, University of Leicester: **Cool Geology: ice sheets past and present**

Wednesday March 23rd

Annual General Meeting and Chairman's Address
Mark Evans (New Walk Museum, Leicester): **Some new plesiosaur discoveries**

Saturday Seminar March 19th 2011

Just another reminder about the Saturday Seminar, our flagship indoor meeting! Get your tickets for *Cool Geology: ice sheets past and present* from Fiona Barnaby, any committee member or at meetings.

Annual General Meeting March 23rd 2011

Make a note in your diaries of the forthcoming AGM on March 23rd. It's your chance to have an input into the running of the Section, and if you feel inspired you can put yourself forward to serve on the committee. There are always posts which need filling, or you are welcome to stand for any other positions, whether vacant or not. Talk to secretary Fiona Barnaby if interested. Even if the AGM business doesn't appeal, there will be an address from the Chairman Mark Evans, on Plesiosaurs.

Winter Programme Abstracts

Wednesday January 12th

Revelations from rotting fish: experimental decomposition and the origin of vertebrates

Dr Rob Sansom, Department of Geology, University of Leicester

The fossil record of the earliest and most important stages in our own evolution is limited to rare specimens lacking bones and shells. By investigating how our soft-bodied ancestors rotted, we have shed new light

on how these exceptional fossils should be interpreted. Our investigations of morphological decay of lamprey, hagfish, lancelets and sharks in a laboratory setting reveals that decay is not random: anatomical features allowing precise placement in the Tree-of-Life rot first, leaving remains that appear to be those of more primitive, or ancestral forms. Using this data allows us to transform our understanding of the origin of the vertebrates, and the way we interpret the earliest fossils of important groups of animals.

Wednesday March 9th

From Yorkshire to Argentina: an ammonitologist's odyssey

Professor Peter F Rawson, Centre for Environmental and Marine Sciences, University of Hull (Scarborough Campus) and Department of Earth Sciences, University College London

In Early Cretaceous times the North Sea Basin and the Neuquén Basin in Argentina lay at similar palaeolatitudes though in opposing hemispheres. Both contain rich ammonite faunas that represent two very different faunal regions. This talk will review briefly our knowledge of the northern forms then focus on the speaker's current research in Argentina. At some levels there are surprisingly close similarities between the Argentine and English faunas, which raise fascinating questions about possible palaeogeographical links.

Provisional Summer Programme 2011

Saturday April 9th **Natural History Museum**, Mineralogy and Petrology collections. Leader: member of Museum staff. Trip confirmed

Saturday May 14th **Pode Hole, near Spalding**. Leader: TBC. Trip confirmed

Friday June 3rd to Sunday 5th weekend. **Lake District**. Leader Mike Petterson. Trip confirmed, accommodation to be arranged

June evening excursion. TBC

Saturday July 9th **Welton le Wold**. Leader: John Aram. TBC

Saturday August 13th **Cleeve Hill**. TBC

Saturday September 10th **Edge Hill**. TBC

Saturday October 8th One of the following: **Scunthorpe area and Museum, Peterborough Museum with Must Farm, or New Walk Museum.**

An excursion to **Brooksby Quarry** is also under discussion.

TBC = to be confirmed

Field Excursion Report

Excursion to Glebe Quarry and Hanby Farm, Ancaster Saturday October 9th 2010



An overview of Glebe Quarry

The day dawned fair, but we soon felt the biting wind. Eleven members and our leader for the day, John Aram, met at the roadside entrance to Glebe Quarry, south of Ancaster and west of the village of Kelby. John gave us an introductory briefing on what we would see in the quarry, where the sequence consists of Lincolnshire Limestone Formation at the base of the section, overlain by the Rutland Formation. This is a series familiar to us from our old stamping ground at Ketton. From the base of the Lincolnshire Limestone the quarry exploits the 'White Limestone', which is the top value building stone. This horizon then grades into the massive 'Blockstone', which is followed in the sequence by the 'Weatherbeds', which show more colour variation due to later percolation of water and minerals.

Andy Smith, the quarry manager, explained that there is an established demand for the White Limestone, and the upper Weatherbeds take a polish and can be used as floor tiles. He appeared to be very tuned into the changing demands of the stone market, where natural stone is becoming increasingly popular as a floor and wall covering. The rock is quarried in blocks of approx 1.2m by 1m by 45cm, and fit two abreast on the lorries which transport it to the customer. The quarry had recently invested in an Italian marble cutting

machine which has considerably improved the rate at which rock can be cut. The method is to cut downwards through the rock to a depth of about 1 to 1.5 metres, which allows a block to be plugged and feathered out, using a pneumatic drill, before being scooped up by an adapted digger 'hand'. Andy had a keen eye for imperfections and changes in the mineralogy of the rock and used quarryman's terms to describe these, which, although different from those a geologist would use, identified similar traits in the rock.



The group gathers before going into Glebe Quarry

Lunch was taken at Woodies, a nearby holiday park set in fine landscape. We then moved some 10 miles south to Hanby Farm where we met its owner Mr Peter Dobney. Peter gave a brief introduction to the background of his 850 acre farm and then we were off in a trailer to visit a couple of sites of interest. Firstly he was keen to show us a pit he had dug in the course of creating a couple of wildlife ponds. The excavations went through a topping of heavy clay grading to silt, before loam was encountered. Peter was mystified about this sequence, but after some thought the party surmised that the loam was the original soil lying at the base of a valley which over the years had become buried beneath the silt and clay, possibly via flooding events. We then returned towards the farm and stopped to examine a field underlain very shallowly by Cornbrash, the highest member of the Middle Jurassic. The shattered and weathered upper beds of the Cornbrash were very fossiliferous and numerous finds of echinoderms, ammonites, bivalves and brachiopods were made.

We returned to the barn for a very welcome cup of tea and Peter took the opportunity to share his finds with us and to tell us something of the

economics of agriculture and how he rotated his crops. His willingness to host us was in part due to his diversifying into education to support the stewardship aspect of his farming. The contrast between geology and economics made for a fascinating day and the Field Secretary closed the meeting with a vote of thanks at 5.30.

Helen Jones



In the bowels of a rather damp Glebe Quarry

Collections at risk

For many years now we have had the problem of reorganization and rationalization in geology departments in higher education and local government, which inevitably seems to lead to downsizing and closures. Sometimes all this means is that the department moves its attention from one aspect of geology to concentrate on another, but when the worst happens a department closes altogether and sometimes little effort is made to relocate the collections of specimens, books and papers from the department.

Many years ago Nottingham University had to close its geology department and while a few items were saved by departing staff, the bulk of the collections, most of the books and various other hardware were thrown into a skip, never to be seen again. Even more recently Nottingham Trent University had a collection of fossils and minerals which became surplus to requirements and, as they only teach a small amount of geology in their civil

engineering courses, it was decided that the collections had to go. The collections were split up and dispersed amongst various schools and private collections. I was allowed to pick a few items for my own collection but it was sad to see that a lot of the other recipients took specimens, but failed to take the label, thereby losing all the data connected to that item. I was able to take about 300 specimens and a short time later I was given the catalogues that are but a sad reminder of a very interesting collection.

Loughborough University had a small collection of fossils, which again was deemed to be of no further use, as the university only taught geology as part of civil engineering. However, the minerals were retained as these would still be used in the department. This is quite an interesting collection as it is made up of three lots, two of which were bought in the very early part of the 20th century as small teaching collections when the university was still a college. The rest of the items were collected by members of staff over the years. It is probable that the two early collections were purchased from different suppliers as one, a set of about 200, is made up of small specimens set out in chronological order (Cambrian first, Pliocene last) while the other set of 90 is made up of larger better quality specimens and was laid out in faunal order (Brachiopods first, Echinoderms last). Each collection has different labels and sad to say no suppliers name is visible on either. It would be interesting to look into their history to find out who supplied them, as they are both good general collections.

One day in May 2010 whilst looking at my latest copy of Coprolite, the newsletter of the Geological Curators Group, I read that another collection was under threat. This time it was the geology museum of the Wigan and Leigh Technical College in Lancashire. They were moving out of their building in Leigh and would not have room in the new building for the museum. It seemed that the specimens would have to be thrown away. The article in Coprolite gave the name and e-mail address of the curator of the museum, Mr Steve Hewitt. I decided to contact Steve, and made an appointment to see the collection with a view to taking a few photographs of certain bivalves and brachiopods. On my first visit, Thursday 13th May 2010, I left early and after a very quick journey had time to look around Leigh, a town that has seen much better days, although some of its buildings still looked handsome, in an industrial way.

Steve was very helpful and I was able to inspect the specimens that interested me, and have a good look in all the display cases and storage drawers. When I left I was given a number of books and BGS memoirs on the geology of Leicestershire, Oxford and Yorkshire. A few weeks after my

first visit Steve wrote to tell me that I was welcome to take all the remaining 500 books and most of the fossil specimens. These were picked up in three trips over the next month or so using my car. It's amazing what you can squeeze into a Vauxhall Astra Estate. Each of the specimens was wrapped with its tray and label in newspaper and packed in cardboard boxes. A large Carboniferous Coal Measures tree trunk was packed using lots of bubble wrap and a heavy-duty plastic crate. World Museum, Liverpool, is the new home for most of the fossil fish specimens. They also took some of the Carboniferous plant remains, together with all the tonsteins and Quartzlagen research material. Some specimens were kept back by the staff for a small display at a community college and a teaching collection was given to Altringham Grammar School. The local section of the Russell Society picked up some of the better rock and mineral samples.

When I returned home with the last load my lounge was full of cardboard boxes packed with fossils. As I unpacked them and put them in trays the size of the task hit me. I was very lucky to have spare capacity in my storage drawers and with a little reorganizing I managed to fit all the 4000 specimens into the collection, still with some drawer space left over. I am now in the process of cleaning, conserving, identifying and cataloguing the collection. I expect this to take quite some time as I will also still go on all the section field trips and, as is my wont, inevitably collect many more fossils for my own collection that will also need putting away properly.

It's so sad that in this age of science we only have money on our minds. Couldn't the new building at Wigan have been made bigger by a very small margin at a cost that would have been but a point of a percentage of the building costs? Collections seem to be looked at as just objects and not in a broader sense with each item having a scientific worth far greater than that of the object. Even the items we pick up on our field trips need to be looked after, with proper records kept with them and the specimen not just thrown in a box at the back of the garage or shed. Be careful with your collections.

Dennis Gamble

A short history of the Geology Museum of the Wigan and District Mining and Technical College

The museum has had a few ups and downs over the years and is now sadly down and out. The museum was established in August 1883 with a donation of a collection of minerals from Canada by a Mr Stent of New York, which helped in the creation of a permanent display at the college. In 1903 the

Mining and Geology Department moved to the Library Street building, this is now the Town Hall. The museum continued to grow with various donations including one from Professor J. Tennant who in 1932 gave a collection of minerals, rocks and fossils. The Manchester Geological Society moved its meeting venue in 1946 to the college and over the next twenty-five years many specimens were given by the society to the museum.

1959 saw the department and museum relocated to Parsons Walk Building in Wigan and here in about 1967 Mr Ian A. Williamson, the senior lecturer in geology, expanded and reorganized the museum. Mr Williamson retired in 1980 and responsibility for the museum passed, via Mr R. Grayson, to Mr Steve Hewitt. The displays were modified and developed up until 2005 when the museum moved yet again, this time to Railway Road in Leigh just down the road from Wigan. Between 2005 and 2009 Steve was able to move the storage drawers and display cases into their final position and develop the wall displays. The many display cases were set out with some very fine specimens of both fossils and minerals. By 2009 everything was how Steve wanted it to be, but then the axe fell and in March 2010 the college stopped teaching geology and it was decided that with the move to new premises the museum would have to go. Most of the fossil and some of the mineral specimens have been saved along with the library of geology books, but most of the display cases and the rocks and minerals that were left went into skips.

Dennis Gamble

Alan Dawn 1923 - 2010

It was with great sadness that news reached us of the death of one of the Section's oldest supporters and friends, Alan Dawn, on October 31st last year. He was a familiar face at our meetings, and many years ago was our Field Secretary for several seasons. He almost invariably attended our Saturday Seminars, and was always willing to help in arranging and leading excursions to localities in his part of the world, Stamford. He channelled his greatest energies into the Stamford Geological Society, and he and his late wife Pauline were largely responsible for the formation and success of that group, and its affairs. In his own quiet but determined way he did an enormous amount of work for local geology, and will forever be associated with Peterborough Museum and the *Leedsichthys* project, which could not have happened without his huge and enthusiastic input, and expertise.

Andrew Swift



Your hardworking committee (minus a few members!)



Collecting at Bradley Fen in September 2010 (photo Graham Cheesman)



Were you at the Parent Body lecture?



Opening Dennis Gamble's new museum extension, November 2009

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