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# Manchester Geological Association

President: Peter del Strother September 2012

www.mangeolassoc.org.uk

Founded 1925

Dear Members,

Welcome to the September Newsletter!

As the excellent field meetings season comes to an end we look forward to an interesting series of talks in our indoor meetings programme, which includes carbonates in the Cayman Islands, early North-West Geologists, a tour of the Outer Hebrides, and a look at the palaeontology of China, plus lots more. See page 10 for details.

Also in the newsletter, we have articles from our members on an interesting trip to the Jardin des Plantes in Paris, an MGA trip to the Wild West, USA, a report of the Dangerous Dinosaurs and Fabulous Fossils event at Park Bridge, and a book review. An update of the MGA's archive (updating the list from 2008) is given by our archivist Derek Brumhead, as well as news from the MGA council, which asks for volunteers to help out with refreshments at the indoor meetings and for anyone who wants to become our next membership secretary. Volunteering for the MGA is a great way to meet other members and the council, so please consider helping out the association, any help is greatly appreciated. Also, if you are an internet user, please sign up to the MGA's facebook group, more details in MGA News.

Many thanks to all who have supplied material for this edition, if you have any articles, book reviews or news for the next edition (December), please email them to me before the end of November.

James Jepson

Newsletter Editor

# Contents

#### QUICK DIARY

Outdoor:

Pott Shrigley.....6th October Skills Day.....20th October

Indoor:

Carbonate Deposits, Cayman Islands.......10th Oct Early NW Geologists......10th Nov Tour of the Hebrides......8th Dec

# **MGA News**

#### **NEXT COUNCIL MEETING**

The next meeting of the MGA Council will be on Saturday 8th December 2012 at 10 am. If any MGA member has any item that they would like us to discuss, or if anyone would like to attend and observe the meeting, by prior arrangement, please contact the General Secretary, Sue Plumb, secretary@mangeolassoc.org.uk.

#### **VOLUNTEERS NEEDED**

If you would like to be more involved with the MGA, why not volunteer to help with refreshments during the forthcoming Autumn/Winter lecture season? All offers of help gratefully received. Please contact the General Secretary, Sue Plumb, secretary@mangeolassoc.org.uk, for more info.

#### NEW MEMBERSHIP SECRETARY NEEDED

We are still looking for a new Membership Secretary to take over from Lisa Abbott next year, if you are interested please get in touch.

#### MGA ON FACEBOOK

If you are on the internet you can keep up to date and in touch with the society on the MGA's facebook site. The facebook site allows members to post interesting geological information, holiday geology photographs, as well as get updates on events from the society. Go to www. facebook.com/groups/40421 91 99605689/ or by going to www.facebook.com and searching for "Manchester Geological Association". Detailed information on how to sign up was given in this year's March newsletter.

# A word from the treasurer is seldom welcome and normally means one thing, increased subscriptions.

We last increased our subscriptions in 2005. In recent years we have been running at a year on year deficit which in the long term is not sustainable. The subscriptions for next year, payable Jan 2013, will remain at current levels. However at the AGM in February, Council will be proposing an increase in subs for 2014 to £16. We will also be proposing that members who wish to receive the newsletter and other correspondence in hard copy will have an annual subscription of £18.00 to reflect the additional costs of printing and postage. Printing and postage account for about 17% of our annual expenditure.

Separately, we will be proposing that a single subscription of £16 or £18 could cover everyone living at an address, removing the associate membership option. For the single subscription, everyone living at an address could opt to be full members of the association in their own right.

Finally, in the autumn we will be circulating a survey to you to identify what it is you value about the MGA and where you would like to see us develop our activities.

If you want to comment on any of this, please email me at niallclarke01@gmail.com.

Niall Clarke

# **A**RTICLES

# JARDIN DES PLANTES, PARIS

On a recent trip to Paris I had the chance to visit the Jardin des Plantes. From 1635 this site was the Royal Garden of Medicinal Herbs but in 1793, after the revolution, it became the Museum d'Histoire Naturelle (the National Natural History Museum). Appointed as head of the Garden in 1739, Georges Louis Leclerc, the count of Buffon and a leading naturalist, extended the garden and established it as a major centre for the study of the natural sciences. In the 19th century amongst the researchers at the garden were both Lamarck, the leading evolutionary thinker and Cuvier who is regarded as the founder of palaeontology.



The Gallery of Comparative Anatomy

Home to one of the world's great natural history collections of specimens and records, today the garden contains greenhouses, museums and a small zoo. The former Gallery of Zoology, which had been closed to the public for some 30 years before its refurbishment is now The Grand Gallery of Evolution where the plant and animal life of the planet are explored in a vast, spectacular space with subdued lighting to protect the specimens on display. Unfortunately the Geology gallery is currently undergoing renovation and closed (but can be explored online at www.museum-mineral.fr) however the Gallery of Comparative Anatomy and Palaeontology is open to the public. This museum has a distinctly antique atmosphere and, in terms of its fabric, is rather badly in need of maintenance.



Ammonite specimen illustrated by d'Orbigny in 1850.

Nevertheless this is a remarkable museum for it houses the collections which allowed Cuvier to define the science of palaeontology. There are of course the fossils themselves, but perhaps more impressive is the vast collection of skeletons from extant animals. It was this collection against which Cuvier compared fossil remains to understand the animals from which the fossils originated. The main hall on the ground floor of the gallery is full to almost bursting with the mounted articulated skeletons of larger animals while the cabinets around this central space contain smaller species as well as various anatomical specimens such as skulls, brain casts and preserved embryos.

The collection includes the skeletons a number of whales, several of which are holotypes, the specimens on which the definition of the species is based. The upper two levels of the museum display the palaeontological collections. On the second floor the vertebrate specimens are arranged from the most ancient species at the front of the hall to the remains of early humans at the rear. Invertebrate fossils are displayed on a balcony gallery running around vertebrate display. A small room above the entrance hall displays some of the original published descriptions of various specimens, and in particular ammonites, alongside the original specimens themselves.

Both the evolution and palaeontology galleries have small but interesting bookshops with a range of popular and technical books (of course mostly in French but some in English). If you do read French (or are experienced with Google translate) and are holidaying in France the bookshops have a series of small, excellently produced booklets, describing geological walks around different French cities for only 4 euro.

The recent novel `The Coral Thief' by Rebecca Stott provides an atmospheric introduction to these museums and their history. The story is set in post revolutionary Paris, a time of rapid growth of interest in natural science, with much of the action centring around the Jardin des Plantes and its museums with Cuvier as an important character. For those with an interest in the history of ideas about evolution, Stott's most recent book is `Darwin's Ghosts: In search of the First Evolutionists' which has been very positively reviewed.



Statue commemorating Georges Cuvier outside the Jardin des Plantes.

More information about the Jardin and museums can be found on their website www.mnhn.fr. I highly recommend a day spent exploring the gardens and its various museums on your next visit to Paris.

GARY FULLER

# THE MGA IN THE WILD WEST, USA 2012

You could call it the trip of a lifetime.. well it certainly was for me!

For two weeks in June and July six members of the MGA, ably led by John Nudds and Cindy Howells, toured the WILD WEST of the USA in a large mini bus, visiting active dinosaur digs, mammoth exposures, fossil fish deposits, many museums, three national parks and some amazing geological wonders.

We started in Denver, lodged initially in Cheyenne, went to Medicine Bow for lunch at The Virginian and then, taking a circular route via South Dakota, made our way via Scott's Bluff, the Devil's Tower, Hill City and Mount Rushmore to Yellowstone Park.



Fountain Paint Pots, Yellowstone National Park

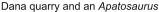


Devil's Tower

At Mammoth Springs in Yellowstone Park we slept in simple cabins with resident ground squirrels, had close encounters with deer (which they call elk) and bison (which they call buffalo) saw many hot springs.. but fortunately only met bears in a wild life park .. and we did wild swimming in warm rivers! And, yes of course, we went to see Old Faithful and all the fabulous hot pools and terraces.

John's contacts in the dinosaur world of the wild west took us into the workshops of the Black Hills Institute in Hill City, South Dakota, where full size casts of huge dinosaurs were being constructed. The replica of "Stan" in the Manchester Museum was made here, and later to an active dig at the Dana Quarry near Ten Sleep in Wyoming. Here we saw an enormous articulated *Apatosaurus* being excavated (we got there half an hour before the folk from the Smithsonian).







Suspension bridge Thermopolis WY 104° F in shade!!

The temperature on arrival in Denver was 102°F and in Thermopolis, suitably hotter at 104°F, but that didn't stop some of the team from enjoying a natural hot dip, more prudent members cooled off in the hotel pool. All of the mid west was experiencing a heat wave, and we drove mile after mile through tinder dry sage brush country with just the occasional pronghorn or cow and "nodding donkeys" to be seen. One expected Clint to come over the horizon at any time!

After a couple of nights at Yellowstone we headed south through the Grand Teton National park to visit Fossil Butte in the Green River Formation and then via Flaming Gorge into Utah to the National Dinosaur Monument near Vernal.

On the last day we traversed the Rocky Mountains, saw some moose, drove up to 11,000 ft, and it started to rain. Our return journey was eventful...our plane didn't fly so some came home via Frankfurt and some via Heathrow!

Long empty roads, small clapboard settlements and distant views of huge mountains are an enduring memory.. and really friendly folk.. "Manchester? England? Is that near Scotland? In Europe? "Oh, and well managed National Parks with helpful rangers wearing big hats and very shiny boots!

We travelled 2,800 miles in 14 days, spent time in 6 different states and returned sunburnt, happy and exhausted after a trip of a life time.

# Mary Howie

Leaders .. Dr John Nudds (University of Manchester) and Dr Cindy Howells (National Museum of Wales) to whom our thanks for their generosity of time and expertise.

Team.. Joyce and Mike Cunningham, Nathan Drake, Mary Howie, Joyce Little and Jim Spencer.

John and Paul Selden's book "Fossil Ecosystems of North America" was constantly in use, as was the excellent 40 page guide book prepared by Cindy.

A full account of this trip is being prepared for the website and the next edition of the NWG.

# DANGEROUS DINOSAURS AND FABULOUS FOSSILS TRIBUTE TO FRED BROADHURST

Park Bridge Heritage Centre Saturday 9th June

Thank you to all those who helped make this a great event for children and a worthy tribute to Fred. Despite the dismal weather it was very popular, with children travelling from as far away as Southport and Huddersfield. Children got the chance to handle inspiring fossils from Manchester Museum as well as fascinating local fossils brought in by Oldham Geological Society. They could find out about Percy the Plesiosaur with Fred's family, dig for real fossils and gemstones, watch if erupting volcanoes wiped out their dinosaurs, do interactive walking with dinosaur workshops with Pete Loader of St Bede's, create prehistoric scenes and crafts with Rockwatch, imagine and make clay prehistoric creatures with Tameside's Countryside Voluntary Wardens and make their own fossils, pan for gold and try their hand at mountain building with the Earth Science Education Unit. For those who didn't mind the rain there was also a guided walk to explore the clues from the rocks around nearby Rocher Vale. Tameside Countryside Warden Service who manage this area have also been exemplary in their help and support.

The Curry Fund of the Geologists Association funded a Coal Mine Crawly Tunnel, made by former miner Gary Brain. Gary even dressed up as a Victorian coal miner for the day and answered lots of questions about working underground. The Coal Mine Crawly Tunnel is now stored at Manchester Museum and can be loaned for future events to promote geology and our regions coal mining. Thank you to all the many volunteers, some of whom like John Price of the MGA and the Oldham Geological Society who donated many of their own fossils for the children to enjoy. Speaking to children and parents on the day it was evident that there's a lot of enthusiasm for more events for children in the north west who are interested in all things prehistoric. The inspiration created by Fred Broadhurst goes on and on.

Chantal Johnson

## GEOLOGY IDENTIFICATION SESSIONS AT THE MANCHESTER MUSEUM

Manchester Museum are running Geology identification sessions, where you can bring any mystery rocks and fossils to be identified for free by the Curator of Earth Sciences, Dr David Gelsthorpe.

The next session will be held on:

## Thursday 25 October 2012, 2-3pm

The sessions will be in the Resource Centre (3rd Floor) at the Museum.

More information can be found on the museum's website:

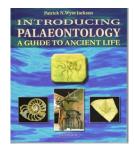
http://www.museum.manchester.ac.uk/aboutus/services/identification/

# **BOOK REVIEW**

# Introducing Palaeontology: A Guide to Ancient Life

by *Patrick N. Wyse Jackson*Dunedin Academic Press - 2010
ISBN 978-1-906716-15-8

Paperback: £9.99



Introducing Palaeontology is a well written, nicely illustrated, accessible introduction to the science of Palaeontology. It gives an excellent introduction to the study of fossils and the major fossil groups. The book is divided into two major parts, The Science of Palaeontology and Fossil Groups. The first part, The Science of Palaeontology, introduces what fossils are, how to collect, curate and study them. A well written section on taxonomy is given, explaining how fossils are named, this is followed by the uses of fossils which briefly discusses the history of life on Earth from its beginnings to the present day, evolution and extinctions, interpretations of palaeoenvironments and climates, biostratigraphy and the geological timescale. A section on Fossil Lagerstatten (sites of exceptional fossil preservation), introducing the two categories concentration and conservation, then listing some of the major sites across the globe, including Ediacaran biota, Burgess Shale, Solnhofen, Baltic amber to name a few. This section finishes on a very brief history of palaeontological study from the Greeks and Romans to the present day.

The second part goes through the major fossil groups starting with Algae and plants, going via Forams, Radiolarians, Bryzoans, Molluscs, Brachiopods, Echinoderms, Arthropods and Vertebrates, including Conodonts, Fish, Reptiles, Birds, Mammals (which includes a section on Hominids) finishing with trace fossils. Each of the sections are illustrated with colour photographs and labelled diagrams, and give easily digestible information on morphology, how they lived, stratigraphic ranges and their evolutionary history, all technical terms are in bold and explained in a comprehensive glossary at the back of the book.

This is an excellent and affordable introduction to the science of Palaeontology, it is written in a very accessible way, not being bogged down in technical descriptions like many other palaeontology textbooks. It is illustrated throughout with colour photographs (one minor criticism is the lack of scale on many of the images) and excellent annotated diagrams, especially in the second part of the book illustrating morphology. It also gives a broad overview covering plants, microfossils, invertebrates and vertebrates, other books often have a narrower view, for example, just invertebrates. The book will be of interest to both amateurs and professionals who want an introduction to the fascinating science of Palaeontology, and also to students who are starting study in geology, and in fact this book is recommended reading for the first year students at the University of Manchester.

James Jepson
National Museum Wales

# **MGA ARCHIVES 2012**

This lists updates that issued in 2008

Council Meetings, lists of those attending, 10 March 1925-23 October 1956

Council Minutes 23 December 1924-11 November 1952

Council Minutes, 25 November 1952-12 December 1973

Council Minutes, 16 January 1974-10 January 1996

Minutes of General (Ordinary) Meetings, 18 December 1924-12 November 1957

Minutes of Ordinary Meetings, 10 December 1957-12 March 1986

Minutes of Ordinary Meetings, 17 September 1986-11 January 1995

Minutes of ordinary meetings, 1995-97. 2008-11

Attendance Book (1) 18 December 1924-10 October 1959

(2) 15 February 1995-9 December 1998

Members Account Book 1925-1966

General Accounts, 1925-1969

Annual Accounts, 1929-1983, 1992-1994, 2009-10

Secretary's Correspondence (Dr J W Jackson) 1950-1959, 1960-1972

Secretary's Correspondence, 1973-1976, 1977-1984, 1985-1988, 1989-1991

Circulars, 1925-34, 1935-49, 1950-63, 1964-72, 1973-82, 1982-92, 1994-97

Indoor Meetings (includes further details than the newsletters), 1995-97, 2008-11

Newsletters, November 1992-April 1998 produced by Mary Howie Dec 1905-March 2011

Membership Proposal Forms, 1925-55, 1997 and 2003 Application Form of lapsed members 1992-97

Manchester University Geologists' Association Easter Excursions, 1907-15

University of Manchester Geological Department, Easter Excursion 1924

List of Meetings and Excursions, 1950-61

MGA, lists of field meetings with numbers of those attending 1957-69

MGA Excursions, June 1965-June 1992-October 1997

Dr J W Jackson, ms notes for history of the MGA 1950-75 [these were not published]

Dr J W Jackson, "A Retrospect of twenty-Five Years (1925-50)". 8 copies

Dr J W Jackson, Typescript of the above

Dr J W Jackson, students notebook with ms notes

Secretary's Annual Reports, 1964-85

Accounts with William Deacon's Bank 1925-39

Notes on the MGA Library and its acquisitions, c. 1978

Notes and Correspondence in respect of the new journal (Amateur Geologist) 1965-67 with the account for 1969

Cards calling a meeting of Council, 1939-47

Notices and notes in respect of Council Meetings 1950-67 (incomplete)

Programme Cards and Calendars:

Manchester Federation of Scientific Societies 1948 and 1949

Manchester Branch of the Geographical Association

MGA 1926, 1929-48 (incomplete)

MGA 1971-98 (1972-73 missing)

Manchester University Geological Association, 1906-24 (1914-18 missing)

Notes by Dr J W Jackson on Professor O T Jones

Minutes of AGM 1997-1998, 2006-11

Annual Dinner, 1993 and 1994

Members of Council, 1993-94

Lists of members, April 1975-2010

Rules of the Association 1970 and nd

Letter from Iain Williamson with proposal to change name to Manchester Geological Society, 11 January 1994

North West Naturalists' Union Membership Card, 1996

Amateur Geologist: Vols I (Pt II) Winter 1966, 5 (1and 2), 6 (1 and 2), 7 (1 and 2), 8 (1 and 2), 9 (2), X (1 and 2), XII (2), X III (2) (Spring 199 North West Geologist: Vols 1 (1991) – 10, 12, 1

#### Miscellaneous:

Fred Broadhurst's field notebook for Building Stones of Manchester

'Percy in Peril'. Leaflet (three copies) of Percy the Plesiosaur Appeal

Obituary of Fred Broadhurst by John Nudds, John Pollard and Paul Selden

MGA Publicity leaflet and application form. nd but subscription is £5. (Two copies)

Geological Time Scale published by Manchester Museum (R M C Eagar), October 1976

MGA Programme and Membership Cards, 1971-72, 1973-74, 1974-80, 1981-83, 1985-94, 1995 - 2000. (Duplicate copies)

Rules of the Manchester Geological Society, 1874

Rules and Bye-Laws of the Manchester Geological and Mining Society, 1904-5

Ms headed 'Manchester Geological Society 1838' by George Henderson (10 foolscap pages and other pages)

List of Officers 1840-1 of Manchester Geological Society

Offprint from Trans Inst Mining Engineers Voil XCV, Part 3, pp. 307-19. The Earl of Crawford and Basicarres FRS 'A Centenary Prospect 1838-1938, Presidential Address to the Manchester Geologica and Mining Society 12 April 1938

Offprint, Liverpool Geological Society (Established 13 December 1859). T A Jones, 'A Retrospect of Thirty-Five Years'

Offprint from Nature Vol 186, No 4718, pp. 9-11. 2 April 1906. R G C Bathurst, 'The Liverpool Geological Society, 1859-1959.'

Manchester Museum. History of the Collections (Geology)

Offprint from Journal of the Manchester Geological Association Vol II, Part I, pp. 51-60 by J Wilfrid Jackson on 'A Retrospect of Twenty-Five Years (1925-50)

Ms 'The Development of the Geological Column' [Dr Eagar]

Application form for membership of the MGA, nd but membership is £4.75.

Ms 'An Introduction of the new Palaeontology' [Fred Broadhurst]

Ms 'Trace Fossils' [Fred Broadhurst]

Index cards of the MGA Library [George Henderson]

Ms 'Building Stones of Cartmel Priory' by Murray Mitchell

Offprint, 'Stone in Building' (Geological Technical Study 1) by John Ashurst and Francis G Dines, Architectural Review Part 1 1977

15 coloured geological postcards (Geological Survey)

#### Derek Brumhead

# FREE JOURNALS

I have been asked to dispose of the following periodicals – all freebies:

Journal of the Geological Society, Vol 157 (2000) - Vol 163 (2006). All with four parts.

Proceedings of the Yorkshire Geological Society, Vol 45 (1985) – Vol 50 (1994–5). All with four parts.

Journal of Volcanicity and Geothermal Research, Vol 129 (2004) – Vol 149 (2006). Four parts, monthly.

If any member is interested please contact me on 01663 744863 or ddb@tesco.net

Derek Brumhead

# INDOOR MEETINGS - ABSTRACT

Below is the abstract for the first lecture of the MGA's 2012/2013 Indoor Meetings. The lecture is on **Wednesday 10th October**, refreshments from **6pm**, lecture starts at **7pm**.

An evaluation of the impact of sea grass on carbonate sedimentation in lagoons: A case study from Grand Cayman, British West Indies

Hilary Corlett<sup>1</sup> and Brian Jones<sup>2</sup>

- 1. Department of Earth, Atmospheric, and Environmental Sciences, University of Manchestser
- 2. Department of Earth and Atmospheric Sciences, University of Alberta

Sea grasses have significantly influenced sedimentation rates in coastal regions around the globe since their appearance in the late Cretaceous. The plants are integral to shallow water ecosystems and help to stabilize coastlines worldwide. Sea grasses influence carbonate sedimentation by baffling currents, binding sediment on the seafloor, and providing substrates for biota. Thalassia testudinum, which is the most common seagrass found in lagoons around Grand Cayman, is encrusted with a diverse biota, including at least three species of red alga, 72 species of foraminifera, 61 species of diatoms, and a broad array of other, less common skeletal organisms. Collectively known as epiphytes, these organisms are arranged in three, layered communities: a basal diatom community, overlain by a coralline alga community, which is then overlain by a community composed of a variety of taxa. The final layer is the most diverse of the three communities. The red algae community, which is the most extensive, typically covers approximately 75% of the leaf's surface. Despite the large number of organisms found living on the sea grasses in the Cayman Islands, few of these epiphytes are found in the sediment around the plants, suggesting that most were removed by current activity.

#### OTHER UPCOMING MGA LECTURES 2012/2013

Saturday 10 November 2012 at 13:30 - Some Early North-West Geologists

Jonathan Otley, Man of Lakeland - Dr Tom Smith, Science Historian

The Bicentenary of the Manchester Geologist Edward William Binney (1812-1881) - Dr John Pollard, University of Manchester

John Cunningham & Robert Grant - the forgotten stars of 1838 - Dr Geoff Tresise, Honorary Curator Geology, National Museums Liverpool

Saturday 8 December 2012 at 13:30 - A Tour of the Outer Hebrides

Drs Doug Fettes and John Mendum, British Geological Survey, Edinburgh

Saturday 12 January 2013 at 10:30 - The Broadhurst Lectures: The Palaeontology of China

Booking Essential

**Wednesday 13 February 2013 at 19:00** - AGM followed by Presidential Address - The Middle Jurassic of Ketton, Rutland

Tuesday 12 March 2013 at 18:30 - Joint Meeting with the Geographical Association - Icelandic Volcanoes

Most MGA Meetings are held in the **Williamson Building, Oxford Road**, opposite The Manchester Museum. For more information visit the MGA's website: **www.mangeolassoc.org.uk** 

# THE MANCHESTER GEOLOGICAL ASSOCIATION COUNCIL 2012-2013



Manchester Geological Association

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Indoor Meetings Secretary: **Jim Spencer**, *Tel: 0161 434 7977* Field Meetings Secretary: **Jane Michael**, *Tel: 07917434598* 

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Website: Peter Giles

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Past President: Dr Tony Adams

Other Council Members: NICOLA FOWLER, MARY HOWIE, CHANTAL JOHNSON

### **EMAIL CONTACT:**

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To contact our General Secretary - secretary@mangeolassoc.org.uk

For Lisa Abbott and membership - membership@mangeolassoc.org.uk

For Jane Michael and field visits - outdoors@mangeolassoc.org.uk

For Jim Spencer and indoor meetings - lectures@mangeolassoc.org.uk

For James Jepson and the newsletter - newsletter@mangeolassoc.org.uk

# OTHER SOCIETIES AND EVENTS

Manchester Geological Association members are welcome guests at other societies' events, some are listed below:

Black Country Geological Society (www.bcgs.info): Sunday 14th October (Field meeting): Charnwood Forest, led by Mike Allen.

**Monday 15th October** (Indoor Meeting): The Geological Photo Archive of the Geologists' Association. Speaker: Dr. Jonathan Larwood, Natural England.

**Saturday 3rd November** (Conservation day): Springvale Park, Wolverhampton.

**Monday 12th November** (Indoor Meeting): Next Steps for the Development of the Lapworth Museum of Geology. Speaker: Jon Clatworthy Director of the Lapworth Museum of Geology, Birmingham University.

Contact: Andrew Harrison – andrew\_harrison@urscorp.com

**Lancashire Geological Association** (www.lancashire-geologists.co.uk):

**Friday 5th October** (indoor meeting): The Underground Canals of Worsley. Glen Atkinson

**W/E October 20th-21st** (field meeting): Excursion to Flamborough Head and environs.

**Saturday 17th November** (field meeting): Visit to the National Coal Mining Museum.

**Friday 23rd November** (indoor meeting): The Coal Mines of Read and Simonstone. Brian Jeffrey and Richard Mathews.

Contact: Jennifer Rhodes – s\_f\_rhodes@hotmail.com

#### **Leeds Geological Association**

(www.leedsgeolassoc.freeserve.co.uk):

**Thursday 11th October** (indoor meeting): Giant Bedforms in the Millstone Grit: Within-Valley or Initial Deltaic Infilling of the Central Pennine Basin? Mr Jochem Bijkerk, University of Leeds.

**Thursday 8th November** (indoor meeting): Marking Time at a Snail's Pace: One Million Year-Old Amino Acids. Dr Kirsty Penkman, University of York.

**Thursday 6th December** (indoor meeting): AGM and Conversazione – Short Talks and Displays by Members.

Contact: Anthea Brigstocke – anthea.brigstocke@zen.co.uk

#### **Liverpool Geological Society**

(www.liverpoolgeologicalsociety.org.uk):

**Tuesday 9th October** (indoor meeting): The Presidential Address. Graham Sherwood (LJMU).

Contact: Joe Crossley - 0151 426 1324

## North Staffs Geological Association

(www.esci.keele.ac.uk/nsgga):

**Thursday 11th October** (indoor meeting): How to find a diamond mine. Prof. Chris King, Keele

**Thursday 8th November** (indoor meeting): Wolverson Cope Memorial Lecture. Prof. John Underhill, Edinburgh

Contact: Eileen Fraser – frasers@netfraser.me

#### Oldham Geological Society:

Contact: Jo Holt - 01457 874 095

Open University Geological Society North West Branch (www.ougs.org/index.php?branchcode=nwe): Sunday 14th October (field meeting): Bury RIGS site (Chris Arkwright) and Bolton Building Stones (Alan Diggles).

**Sunday 2nd December** (indoor meeting): Winter Lectures in Cheshire: Three Geological Talks and Social afternoon with refreshments and branch library. Cost £2, including refreshments.

Contact: Jane Schollick - 01704 565 751

#### **Russell Society (Mineralogy)**

(http://www.russellsoc.org/nwbranch.html):

Contacts: Alan Dyer – Aldilp@aol.com or Harry

Critchley – 01204 694 345

The Manchester Museum:

Website:

http://www.museum.manchester.ac.uk/whatson/

For more details on any of the other societies listed please check their websites