



MANCHESTER GEOLOGICAL ASSOCIATION

President: PETER DEL STROTHER

DECEMBER 2012

Founded 1925

www.mangeolassoc.org.uk

Dear Members,

Welcome to the December Newsletter!

In the newsletter this time there is the usual MGA News section - we are currently after a new Outdoor Events Organiser and Membership Secretary, so if you are interested in becoming more involved with the MGA and would like to join the council, this is a great opportunity. The winner of the MGA GCSE Prize at Altrincham Grammar School for Boys is also announced.

We have many interesting articles on the MGA's recent skills day, a new online plate tectonics resource, an upcoming art exhibition and a report from the MGA field trip to the North West Highlands of Scotland. Also, there is a book review of Paul Selden and John Nudds' new edition of "Fossil Ecosystems", as well as a reminder of the upcoming MGA indoor events.

Enclosed is the membership renewal form for 2013. Lisa Abbott, the current membership secretary will be collecting subs at the December and January meetings.

Many thanks to all who have supplied an article to the December newsletter. If anybody has an article, report, book review or any other geological related item for the next newsletter, please email me your contribution before the last week of February 2013.

Finally, the MGA council would like to wish the members a very Merry Christmas and a Happy New Year!

James Jepson

NEWSLETTER EDITOR

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QUICK DIARY

Indoor:
Tour of the Hebrides - 8th Dec
Broadhurst Lectures -
Palaeontology of China - 12th Jan
AGM - 13th Feb
Icelandic Volcanoes - 12th Mar



MGA NEWS

Have You Always wanted to Organise the Outdoor Events You Want?

After 12 years, I wish to step down from the role of Outdoor Events Organiser. Therefore the time has come for someone else to take over! The role is not particularly onerous and you do get to choose the type of trip you want to go on!! I have already sorted out most of the 2013 events, so you will not have to think about what events to do immediately but can run with what I have already organised. I will be around for advice and guidance. You don't have to arrange weekend trips if you don't want to: I only started doing that about six years ago - before that, it was day events only. The council members are all very helpful, friendly and willing to give advice and suggestions.

It's great fun and you do get to go on some super trips (well I think most of them have been: others may disagree!!).

Please think about it and if you would like a chat about how I do what I do etc, please give me a ring (07917 434598) or collar me at one of the meetings.

Jane Michael

New Membership Secretary needed

As I've just entered the final year of my PhD, I'll be stepping down as membership secretary in the new year - we are therefore looking for a new membership secretary from 2013. Being membership secretary is a great way to meet and interact with other members of the society – whilst I've been membership secretary I've had the opportunity to get to know many of our members much better.

The commitment is minimal throughout the year – usually spending less than an hour a week primarily setting up new members. The biggest workload is in December and January during the membership renewals process – doing things such as collecting subscriptions during meetings, and dealing with postal and standing order subscriptions.

If you are interested and want to know more, please email me at membership@mangeolassoc.org.uk or come and speak to me at the December or January meeting (where I'll be collecting subs!)

Lisa Abbott

MGA GCSE Prize Altrincham Grammar School for Boys

The winner of this years MGA GCSE Geology Prize is James Heatley. James scored 186/200 at GCSE and hence was one of the best three performing students in the country. James is continuing with A level Geology this year and he is supporting this with Physics, Further Mathematics and Chemistry. He is hoping to read Physics at university but hopefully he can be swayed towards Geophysics.

Dr Kevin Stephen

Head of Geology, Altrincham Grammar School for Boys



ARTICLES

Upskilling Arrives at the MGA!

A report on the Skills Day held on 20 October 2012

Following a suggestion in 2011 asking if it would be possible for Duncan Woodcock to run an event to show how to make geological thin sections, I had a chat with Duncan during a field trip and the idea of a Skills Day was born. This resulted in 13 members and 3 visitors getting together in the Geology Labs at the University for what is hoped to be the first Geological Skills Day run by the MGA.

Thanks must go to Vice-President Ray Burgess for arranging the venue and him, Chris Arkwright and Duncan Woodcock for giving up their Saturday to run three excellent workshops covering Thin Section Making (Duncan), Geological Maps (Chris) and Microscopy (Ray).

Each workshop lasted an hour and a half with a maximum of 6 people in each group. These small groups worked really well as it gave everyone the opportunity to receive one to one help and to ask as many questions as they wanted. Handouts were available during and at the end which gave everyone ample information to take away as reminders of what was a very practical day.

The first workshop I attended was on thin section making. Duncan explained clearly what we had to do: this was basically use a lot of elbow grease to reduce the dolerite thin section (1mm thick) he had prepared to 30 microns using 220 grade Silicon Carbide! For me, this took practically the whole time. Once the section was about the right thickness – ie I could see light through it – then I could use a wet microscope to check for interference colours of the feldspars. Eventually I could use 600 grade SiC to show grey and white interference colours. I'd over rubbed mine in one area and so it wasn't 'flat' – Duncan assured me that this would show gradation of interference colours which was useful though obviously not perfect!! Others in my group produced lovely thin sections though I am quite proud of having got anything vaguely usable in such a short time!!



Duncan and 'the set up' for thin section making

Chris Arkwright's Geological Maps workshop was next. This was really useful revision. She went through various geological maps at different scales explaining what could be gleaned at each level. This covered the age of the rocks, different types of rocks including drift, structures such as faults and folds, resources such as coal seams and mineral veins and the chronology/history of the area. Finally we undertook an exercise based on the large scale Penrith sheet identifying geological boundaries, types of drift, unconformities and igneous intrusions. We then had to put the geological history in the correct order! Finally Chris showed us some of the hand specimens in the Department's rock collection to aid our rock recognition skills.



Chris explaining the rocks to the group

After lunch on the Mezzanine (after going 'out' for coffee as the Costa Coffee machine was not working – comments were made that it actually never was – sorry everyone, I should have realised!), my final workshop was Microscopy run by Ray Burgess. Ray explained what could be seen through a petrological microscope both in plane-polarised light and in cross-polars (analyser in position). He also explained how it worked and why 30 microns is the thickness needed for thin sections to get the best information from the slides. Using his microscope attached to his laptop and projected onto a big screen, we could all see what was meant by surface relief, colour, cleavage, extinction, twinning, zoning, exsolution and alteration. This clarified things I'd never fully understood before – so again another really helpful workshop. Finally we each had a selection of thin sections and were able to look for the various features on our own. Ray had thoughtfully provided a handout about the features and also let us use the laminated Interference Colour charts to identify whether we had first, second, third or fourth level colours.

I would like to thank everyone for making this Skills Day a great success – I gave everyone feedback forms which they dutifully filled in for me. The questions included whether people would like another one and the answer was an emphatic 'yes'. Ideas were given for future topics but I would welcome ideas from members who didn't attend too – please email me at outdoors@mangeolassoc.org.uk. I am planning to run the 2013 event around the same time of year – venue to be decided dependent on the general topic. This year the numbers in each group were kept purposely at a maximum of 6. This may not be needed next year depending on the topics and how each workshop leader feels about numbers.

Jane Michael
Outdoor Events Organiser

Plate tectonics: new online resource

A new educational resource - Plate Tectonics – has just been made live and can be accessed using the link: www.geolsoc.org.uk/plate-tectonics. This Geological Society of London project has been generously sponsored by Centrica and is aimed at GCSE students and above. It is based around a series of animations showing our current understanding of the processes at plate margins. As one of the writers for the project I would be grateful for feedback from MGA members so I can pass this onto colleagues at the Education Unit at the Geological Society.



Pete Loader

Geology Master, St Bede's College, Manchester
(peteloader@yahoo.co.uk)

John Piper: the Mountains of Wales, Paintings and Drawings from a Private Collection *Whitworth Art Gallery, Manchester - December 2012 – March 2013*

John Piper began to concentrate on the landscape of North Wales in the middle of the Second World War. He was sent to Snowdonia in 1943 by the War Artists Advisory Committee, and rented a succession of cottages there between 1945 and 1956, two of them, Maes Caradog and Pentre, situated in the awe inspiring glacial valley of Nant Ffrancon. For Piper, the result of this relocation was a shift from picturing the landscape of the lowland countryside to that of the sublime mountains. The large watercolours and oils that he made in Snowdonia are amongst his strongest works and tell of Piper's close understanding of the landscape of that place, and his connection with the rock and sky surrounding him.

The exhibition has been brought together by the National Museum of Wales from the collection of one owner who has built up a concentrated focus on this subject, and from works in their own collection. The Whitworth will augment the exhibition with its own excellent watercolour by Piper of *The Slopes of Glyder Fawr* (1947). We will also curate a parallel exhibition which will explore images of North Wales from our historic collection, showing watercolours by Turner, Cox and Sandby – and also geological specimens from the Manchester Museum.

Stuart Halsall

MGA Goes Back In Time for a Gneiss Trip: NW Highlands 2012

In late September 9 members of the MGA and two from Liverpool GS travelled to Inchnadamph to meet up with Leader Kathryn Goodenough from the BGS to look at the spectacular geology of the Assynt area. The trip was based round the 'Excursion Guide to the North West Highlands' edited by Kathryn Goodenough and Marten Krabbenden. The following is but a very brief report on what we saw: a much fuller article is being prepared for next year's North West Geologist.

This three day trip started on the Tuesday evening with an introduction by Kathryn who outlined her plans for the excursion. Basically over the first two days, we would follow up the succession from the Achaean rocks from over 3000Ma ago to the Ordovician. The final day would be spent investigating the Moine Thurst itself.

The first day started in sunshine with the oldest rocks although we did have the odd shower. We used a combination of the Scourie Mor and Tarbet excursions in the excursion guide (excursions 12 and 13) to look at the Lewisian gneisses with plenty of garnets in them!! At Scourie Mor we saw some classic Lewisian gneisses and a Scourie Dyke. Then after lunch at the Shorehouse at Tarbet Harbour, we visited the major Laxford Shear Zone. We saw some stunning structures (see the photo below) in addition to more hugh (5cm) pinky-orangey garnets.



On the second day, an even better weather day, we carried on working up through the succession, starting at Stoer (excursion 3) to see the Stoer Group. The Stoer Group part of the dark brown Torridonian Group (see picture below). We also saw the 1200Ma basal breccia and conglomerate unconformably lying over the Lewisian Gneiss. On the way back to Inchnadamph, we looked at some of the classic localities along Loch Assynt (Excursion 1) to see the Cambro-Ordovician succession: the Basal Quartzite, the Pipe rock, the Fuccoid Beds, Salterella Grit and two limestones from the Durness Group. We also found evidence of a sill at the last exposure of the day.



Our final day dawned with the threat of rain in the air. We drove to Knockan Crag to see the Cambro-Ordovician succession in their special geological wall and be introduced to the Moine Thrust (the first part of Excursion 6). The Geological Trail here is very good and recently a new 'visitor centre' with boards had been installed including a statue of a female geologist which bore an uncanny resemblance to our leader, Kathryn (who has worked in the area for 10 years). It was here that we got really wet for the only time of the week: it positively threw it down for about half an hour!! After lunch back at the hotel where our gear was miraculously dried in an hour we walked up the glen behind Inchnadamph to examine the thrust structures of the Traligill and Breabag imbricate systems. This is where there was a brilliant opportunity to actually stand on the Traligill Thrust – which Nathan did (see picture) – as erosion has exposed both sides of the thrust.



When we reassembled for dinner, we thanked Kathryn warmly for a brilliant trip which we had enjoyed immensely and for sparing some of her valuable time to lead the trip. In fact Kathryn and three members of the party stayed up for an extra day to do some walking in what turned out to be brilliant weather. The rest of us made our way back to Manchester to find the weather had been wet (as normal for this year's field trips I'm afraid)!

Jane Michael
Outdoor Events Organiser

BOOK REVIEW

Evolution of Fossil Ecosystems (2nd Edition)

by Paul Selden and John Nudds

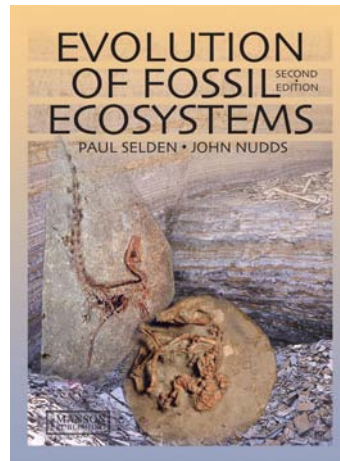
Price: £29.95

Paperback

288 pages

Manson Publishing, 2012

ISBN: 978-1-84076-160-3



In the second edition of *Evolution of Fossil Ecosystems* Paul Selden and John Nudds have revised the original chapters from the first edition, adding the latest interpretations and research of these sites of exceptional fossil preservation. However, this is not just an update of the first edition: the authors have added 6 new chapters, which has expanded the book by over 100 pages and with almost 200 new images.

The second edition follows the same overall layout as the first, by initially introducing what Fossil-Lagerstätten are (sites of exceptional fossil preservation), the different types (Concentration and Conservation), and what these sites can tell us about the evolution of life on Earth. After the introduction each chapter focuses on a particular site, from the oldest to the most recent in geological time. The chapters follow a similar layout to the first edition, with each split into several sections: Background, History of Discovery, Stratigraphic Setting and Taphonomy, Description of Biota, Palaeoecology, Comparison, and in a change from the first edition, Museum and Sites, which was previously in the appendix.

Each chapter is illustrated with full colour diagrams, including detailed locality maps and stratigraphic columns, with colour photograph of the locality, spectacular fossils and occasional artistic reconstructions of the animals in life. The images have measurements written in the figure caption - in both metric and imperial - however the additional inclusion of a scale bar would perhaps have helped to gain a better visual appreciation of the fossil size. Some minor changes in this edition include a toned down colour scheme for the chapter headers - gone is the bright orange of the first edition, replaced by a more subtle pastel orange. The text is also laid out clearer, giving a less cluttered appearance on the page than in the first edition, which makes it easier to read.

The sites of exceptional preservation include the 14 from the first edition: Ediacara, Burgess Shale, Soom Shale, Hunsrück Slate, Rhynie Chert, Mazon Creek, Grès à Voltzia, Holzmaden Shale, Morrison Formation, Solnhofen Limestone, Santana and Crato Formations, Grube Messel, Baltic Amber and Rancho La Brea. The new chapters detail the Cambrian locality of Chenjiang in China, the Silurian Herefordshire Nodules, UK – illustrated with the beautifully detailed computer reconstructions of the fauna, the Karoo Supergroup of southern Africa, spanning the Permo-Triassic extinction, and the Cretaceous Jehol Group of China, including the spectacular feathered dinosaurs; further Cretaceous sites are included from Spain (El Montsec and Las Hoyas), which have abundant fossil insects preserved. The last of the new chapters is on the late Eocene–early Oligocene White River Group, USA - famous for its beautifully preserved fossil mammals.

The book is very well written and beautifully illustrated with stunning colour photographs and informative diagrams. There is excellent coverage of sites worldwide and through geological time, covering almost all of the major periods. The text is jargon-free and light on technical terms, therefore appealing to a wide range of people including amateur enthusiasts, students (this is the 3rd year textbook for John Nudds' *Fossil Ecosystems* course at the University of Manchester) and professionals. This would make an ideal Christmas gift for any fossil lover!

James E. Jepson
National Museum of Wales

UPCOMING MGA LECTURES 2012/2013

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 - see website or contact the Indoor Meetings Secretary for details

Wednesday 13 February 2013 at 19:00

AGM followed by Presidential Address - The Middle Jurassic of Ketton, Rutland

Peter del Strother, Manchester Geological Association

Tuesday 12 March 2013 at 18:30

Joint Meeting with the Geographical Association - Icelandic Volcanoes

Professor Fiona Tweed, Staffordshire University

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



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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):

Monday 21st January 2013 (Indoor meeting): The Mineralogy of Scotland. Roy Starkey, President of the Russell Society and founder of the British Micromount Society.

Contact: andrew_harrison@urscorp.com

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

Friday 15th February (Indoor meeting): AGM + The Geology of British Columbia. Peter del Strother

Friday 25th January (Indoor meeting): Mam Tor-Still on the Move. Dr. Christine Arkwright

Friday 8th March (Indoor meeting): The History of Atherton Collieries. Alan Davies

Contact: Jennifer Rhodes – s_f_rhodes@hotmail.com

Leeds Geological Association

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

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



Liverpool Geological Society

(www.liverpoolgeologicalsociety.org.uk):

Contact: Joe Crossley – 0151 426 1324

North Staffs Geological Association

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

Thursday 17th January 19:30 (Indoor meeting): The forensic use of microfossils. Hayden Bailey, formerly Palaeoservices

Thursday 7th February 19:30 (Indoor meeting): How big is your bang? (Volcanoes). Dr Dougal Jerram, Dougal Earth

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):

Saturday 26th January 2013 (Indoor meeting): NW Branch AGM, lunch and social afternoon, Bolton

Sunday 3rd March 2013 (Outdoor meeting): Beginners Day in the Field, Clitheroe. Chris Arkwright and Alan Diggles

Contact: Jane Schollick – 01704 565 751

Russell Society (Mineralogy)

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

Sunday 13th January 2013 (Indoor meeting): NW Branch AGM + What's New in Minerals. David Green.

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