



Manchester Geological Association

President: Dr Ray Burgess
June 2015

Founded 1925

www.mangeolassoc.org.uk

Editors Bit

Dear Members

Welcome to the June Newsletter. There are several interesting field trips coming up this summer which I hope you will enjoy. While you are out and about I expect that you will take lots of photos of interesting bits of geology; please send some to me so that they can be shared by all our members.

I would like to hear from anyone who has anything which is geologically related. It could be a rock or fossil that you need help identifying, an interesting web site, a lecture that you have been to or seen advertised, or anything else that comes to mind which other members may find interesting.

When sending items for inclusion in the newsletter please send text as a Word document and photos separately (not embedded in a Word document or pdf). These, and internet pictures, do not print well and make it difficult to produce a good layout; one without gaps. Please also make sure that you own the copyright, or have permission to use, any material you submit.

Lyn Relph. Newsletter Editor.

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FIELD TRIPS

Date Sunday 28 June

Location Wirral

Date Tuesday 28 July

Location Criggion Quarry

Date Saturday 22 August

Location Bosley Cloud

Date Sunday 25 October (Morning: half-day trip)

Location Trafford Centre

Who's Who in the MGA Officers

President: Ray Burgess PhD

Vice-President: Jane Michael BSc (Hons)

General Secretary: Sue Plumb BSc

Membership Secretary: Vacancy

Treasurer: Niall Clarke MSc

Indoor Meetings Secretary: Vacancy

Field Excursions Secretary: Penny Heyworth MPhil

Newsletter Editor: Lyn Relph BSc (Hons)

Webmaster: Peter Giles MSc

Other elected members of Council

Nicola Fowler BSc (Hons)

Jennifer Rhodes

Norma Rothwell

Ex officio members of Council

The Immediate Past President, Manchester Geological Association: Peter del Strother MBE BSc CEng MIMechE MBA MPhil

RIGS Representative: Chris Arkwright PhD

The Association's representative on the North West Geologist's editorial team: Peter del Strother MBE BSc CEng MIMechE MBA MPhil

President of the Student Geological Societies of the University of Manchester

MGA Archivist: Derek Brumhead MBE

MGA email addresses

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

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For indoor meeting enquiries: lectures@mangeolassoc.org.uk

For newsletter correspondence: newsletter@mangeolassoc.org.uk

For other enquiries: info@mangeolassoc.org.uk

GEOLOGY BOOKS ON SHOW

by Brenda Scragg

The John Rylands Library on Deansgate, Manchester has at present, in their general exhibition in the Gallery, a small selection of interesting books and manuscripts about geology.

The earliest item on display is the *De Re Metallica*, (on the nature of metals) by Georgius Agricola, 1494—1555. It was published posthumously in 1556. It was the most important book on the mining and smelting of metals for more than 150 years. It was not until 1912 that an English translation was published privately by Herbert Hoover, the U.S. President. It was translated by Hoover and his wife who was a Latin scholar and geologist.

Another early item is *Elementorum Myologiae Specimen*, 1667 by the Danish scientist Nicolaus Steno, 1638—1686. The illustration on display shows the open-mouthed head of a shark compared with a fossil tooth.

Abraham Gottlob Werner, 1748—1817, is represented by *Von der Ausserlichen Kennzeichen der Fossilien*, 1774. Werner's theory that the earth had been covered by a large all-encompassing ocean which had since receded led to its being known as Neptunism. His student Robert Jameson, later Professor at Edinburgh, founded in 1808 the Wernerian Society in his honour.

John Playfair, 1748—1819, was professor of Natural Philosophy at Edinburgh. He is best known for his book *Illustrations of the Huttonian theory on uniformitarianism*; which is on display. This theory was later initially taken up by Charles Lyell, 1797—1875. *Lyell's Principles of Geology* is displayed in a later edition.

William Buckland, F.R.S. 1784—1856, was the Dean of Westminster but, is better known today as a geologist and palaeontologist. *Reliquiae diluvianae: or observations on the organic remains contained in caves...attesting the action of a universal flood*, 1823. For his work on the remains in Kirkdale he was awarded the Royal Society's Copley Medal.

Alexander Johnston's, *Physical atlas of natural phenomena*, 1850, shows an interesting geological map of the British Isles.

Among the original manuscripts is George Cumberland's fossil notebook. Cumberland, 1754—1848 was a friend of William Blake, the poet. When the manuscript was prepared for display a small fossil was discovered preserved in the notebook.

An original letter from Mr Gurley to Sir William Boyd Dawkins dated 29th September 1887 is written from "the Engineers Department". It makes reference to the United States, and it is probable that the correspondent was a member of the firm "Gurley Precision Instruments", which was established in 1845. Sir William Boyd Dawkins, 1837—1929 was Curator of the Manchester Museum and Professor Geology. One of his particular research fields was fossils but, he was also involved in tunnel excavations, including the embryo Channel Tunnel. In 1882 he was able to prove the existence of coal deposits in Kent. This is especially interesting as also displayed is a letter from F.W. Brady to Sir Edward Watkin, First Baronet 1819—1901 about coal boring. Also reproduced is a coal boring stratigraphical section in Kent.

Of particular interest to members of the Manchester Geological Association is a notebook by Edward Binney described as *Field Geology in Manchester*. Edward William Binney, 1812—1882, was, in 1838, one of the founding members of the Manchester Geological Association. He was elected a Fellow of the Royal Society in 1856 and was best known for his work on the coal measures. His extensive collection of fossils is now in the Manchester Museum.

It is not possible to say how long these books will be on display so it would be advisable to telephone before making a visit. It is hoped that these notes will be of interest to those unable to see the books.

A review of a A Text-Book Ore And Stone Mining

by Clement le Neve Foster 2nd edition Charles Griffin & Company, Limited, 1897, by Dr Stephen Edwards visiting researcher Isotope Group, SEAES, University of Manchester.

Available online in pdf format at <https://archive.org/details/textbookoforest00fostuoft>



A Text-Book Ore and Stone Mining was first published in 1894, and was written by Clement le Neve Foster, whose mining career began around 1865. His work had included being Inspector of Mines for the Southwest and North Wales regions as well as much international experience. His early education was in France, he also studied at the Freiberg mining college in Germany. The book covers mining technology and techniques from the 1860s to 1890s, a time when mining was in a period of major technological and structural change, with the development of a recognisably modern industry. The period covers the introduction of high explosives, rock drills, underground power transmission by compressed air and later electricity and diamond core drilling. It also covers the time when many of the great international mining districts were developed. However, the transitional nature of the period also means that there is detailed coverage of earlier mining techniques, including many UK deposits, with a particular emphasis on the west of the UK; as would be expected from the author's position as Mines Inspector. His education also gave him access to the continental mining literature; many European and Russian examples are given.

The book includes a nice summary of late 19th century ore geology and detailed well illustrated sections about exploration, boring for exploration and brine/oil production shaft sinking, excavation, support,

working different deposit morphologies, haulage, hoisting, drainage, ventilation and thoughts on miner's welfare. Earlier technologies mentioned include late uses of firesetting both in 19th century Norway, and also for tackling frozen ground in Siberian gold placers. There is little discussion of coal mining, except where coal mining technologies are relevant to stone or ore mining, for example in shaft sinking. The book is well illustrated with photographs, line drawings and diagrams, though the pdf version reviewed does contain some minor compression artefacts in the photographic images. The text is easily readable, and was aimed at a broad mining related audience.

Of most interest to MGA members will probably be the descriptions of North/central Wales and western and northern English metalliferous mines, as well as some classic international deposits. These include tin mines in Cornwall, haematite in Cumbria, Minera lead-zinc, Cleveland ironstone, Cae Coch pyrites, Ffestiniog slate, wide vein stoping at Van Mine, Foxdale on the Isle of Man, Forest of Dean haematite and, very locally, Dunbar and Ruston steam navvies constructing the ship canal. International deposits include Michigan copper, Rio Tinto massive sulphides, Sicilian sulphur, and California gold placers

In summary, the book offers an excellent snapshot of metalliferous and industrial mineral mining in the latter half of the nineteenth century both in the UK and abroad, and is of particular value in covering the now abandoned metalliferous mining districts of northern and western England, Wales, and the Isle of Man.

2015/16 Indoor Meetings

The programme has not been finalised but information will be available very soon.

Please keep an eye on the website for updates.

A full list will be included in the September newsletter.



National
Trust



Force Crag Mine Open Day

Thursday 9 April, from 10.30am, last tour 3.30pm

History, engineering, geology, geography, archaeology - Force Crag Mine has it all.

Join a guided tour to explore the processing mill and other remains. Make your own way or catch a lift with a National Trust vehicle and discover the story of the last mineral mine worked in the Lake District.

National Trust members £5, non-members £6

Call 017687 74649 or email northlakes@nationaltrust.org.uk

www.nationaltrust.org.uk/borrowdale

Photo © National Trust/Paul Harris. The National Trust is an independent registered charity, number 205846

Force Crag Mine

We visited Force Crag Mine, a National Trust property, on their Open Day in April. On a beautiful sunny day the NT vehicles picked up the people who had gathered in Noble Knott car park, on Whinlatter Pass, and ferried them down to the mine. The mine produced lead, zinc and barytes until 1991.

The setting, at the head of the Coledale Valley, was magnificent. Our NT volunteer guide had worked in mining all over the world and was very knowledgeable about all aspects of the geology on the site, and the processing which used to take place at the mine. The disused mine buildings are nearly derelict; it is lucky that they have been preserved for us to visit.

There is no underground aspect to this tour but, we still found it fascinating. An additional interesting feature is a passive water treatment scheme, which being piloted there, to remove heavy metals from the mine outflow water; with the aim of improving the water quality in Coledale Beck.

This site is well worth a visit if you are in the area on the right date.

Details of further Open Days can be found on the Other Events page of the MGA website, and on the NT website, also on page 6.



Cumberland Geological Society

SUMMER EXCURSIONS 2015

Our summer programme is an ideal way to introduce new members to the Society. So please encourage your friends and family to come along.

General guidelines for these excursions can be found on our website and a copy will be available on each trip. You will need to sign a risk assessment awareness form for each trip you attend. Please ensure you are adequately protected from the weather as locations can be exposed. Also, please share cars wherever possible. Finally, check the website before setting out or contact me on 0770 899 712

Sunday 14 June: Parton Beach exploration and fossil hunting. Meet 10.30 am at NX 982 216 Walking on old railway lines and footpaths, with beach walking after lunch. Leader Dai Powell.

Sunday 23 August: Geology and Landscape of Smardale NNR. Meet at Smardale Hall car park NY 739083 at 10.30 am A 4 and a half mile walk, along a disused railway track, visiting 2 quarries and returning on paths via Smardale Bridge. Leader Sylvia Woodhead.

September: Leader David Kelly. See website nearer the time.

Report on the excursion to Todmorden Moor

Saturday 30 May 2015 by Jennifer Rhodes

Thirty two people from six different geological societies met at Tower Causeway on a sunny Saturday morning. These were MGA, GeoLancashire, Liverpool GS, Yorkshire GS, Craven & Pendle GS and the Open University GS.

The excursion was organised jointly by Manchester Geological Association, GeoLancashire and the Yorkshire Geological Society as part of Yorkshire Geology Month. It was led by John Knight, President of the Yorkshire Geological Society and an expert on the Coal Measures.

The first part of the excursion followed the itinerary of the Todmorden Moor Geology and Heritage Trail available at: www.watershedlandscape.co.uk/index.php/download_file/1171/851
www.todmordenmoor.org.uk

Two features of the excursion have been selected for this report.

The lowermost part of the Coal Measures (Langsettian) was seen in a clough where there is a good exposure of the Six Inch Mine coal seam (Fig 1). We examined the coal seam, its seat earth with rootlets and the *Gastrioceras subcrenatum* Marine Band, which marks the base of the Westphalian. The exposure is rich in goniatites and *Dunbarella*.



Fig 1. Six Inch Mine coal seam

The seat earth was of greater economic value than the coal, it was extracted for use in the manufacture of bricks and clay pipes, in the days before the use of concrete. The coal was a convenient source of energy, but because it is such a thin seam, would hardly have been worth mining unless it could be used very locally.

We also visited a former sandstone quarry with spectacular sedimentary structures, including channel cross bedding indicative of a braided river depositional environment. In loose blocks and some of the beds fossil tree fragments and plant remains could be seen.

Abandoned coal tips were examined for coal balls and “bullions”; these are carbonate concretions encasing well preserved goniatites. Although we found bullions we did not find any coal balls. On previous visits coal balls have been found, some of which preserve fossil plant matter in astonishing detail (Fig 2).

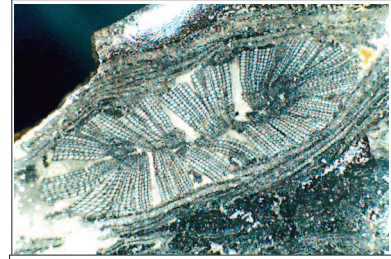


Fig 2. Thin section through Stigmaria (fossil tree root)

Everyone enjoyed the day and it was a great opportunity to establish links with members of other societies. Thanks were expressed to John Knight who had clearly done a lot of preparation for this excursion.



Image: Simon Wellings

Web Watch

by The House Elf

Metageologist: <http://all-geo.org/metageologist/>

My attention was drawn to this blog via Down to Earth, so some of you may already know about it. Metageologist is hosted by a geologist called Chris Wellings. He doesn't tell us much about himself although he defines what he means by 'meta': changed as in, to quote from his blog, 'metagabbro'. His Facebook page tells us no more either. However he covers a wide range of topics - the latest one I have looked at is entitled "Scars, acne and others: circles on the ground".

He talks about Volcanic Cones, Impact Craters (or Bullet Holes as he refers to them); Fakes and an enigmatic title 'Into the Anthropocene' which turns out to relate to craters as the result of atomic testing. He uses examples from all round the world with images from Google. The language is straightforward and simple explanations are given.

His February posting was entitled "Great Geology in Google Maps: mapping from above", a very entertaining description of arm-chair geology by using Google Maps. As a start in map interpretation for geological (or geomorphological processes though he ignores them) purposes it is thought provoking. I must say that I might well take some time to do this when I can't do much other than sit during the summer.

Apart from the blog (which is the home page), he has also set up pages on Earth and Space, Eclogites, Metamorphism and the Geology of Mountains. These have links to his blog entries.

Don't forget to keep your eyes on the USGS Earthquake site <http://earthquake.usgs.gov/earthquakes/>: they had the information about the second Nepalese Earthquake before the BBC reported it (I happened to be online and saw the Beeb's post come up).

GM RIGS REPORT to the MGA COUNCIL - June 2015

The group has increased over the last year to 9 members but sadly we are now without Marjorie Mosley who died in January 2015. It is due mainly to her efforts and enthusiasm over many years that the group is still in existence but we shall continue to conserve the geodiversity of Greater Manchester (GM) in her memory.

The GM geology site records are now stored with the GM Ecology Unit (GMEU) in the Tameside BC Offices in Ashton. But the building is soon to be rebuilt and the GMEU is moving temporarily in May/June to another building nearby. However, all GMRIGS material will be moved with them and access to work on the records will still be possible whilst the unit is in temporary accommodation.

To maintain a standard level of evaluation throughout GM, the group has recently visited 10 sites, which had previously been evaluated as suitable for RIGS status. 5 were confirmed to be suitable but the other 5 are being kept back until similar nearby sites have been resurveyed so that the best examples can be chosen for RIGS designation.

The GMEU has helped us to create a geology layer on the GM GIS system and boundaries have now been added for the 5 sites to be submitted for approval at the next available Planning Officers Group meeting.

The 10 local authority areas in GM have now been split amongst the group and members are making plans for site surveys over the summer so that more sites will be ready for LA approval and designation later this year.

The GM Local Geological Area Plan (LGAP), rolled out in 2008 for 5 years, has recently been reviewed and progress is being made in most parts. We are grateful for the help and encouragement of our LGAP partners, Natural England, BGS, Geoconservation UK, the NW Region Geodiversity Partnership and, of course, the MGA. But it was proposed at our recent AGM that more local partners should be sought to help in our endeavours. The GMEU has already agreed to become a partner and Manchester University SEAES, GM Wildlife Trust and others will be approached shortly.

Thanks to all group members for their continued voluntary work towards conserving geodiversity in GM.

Chris Arkwright: GMRIGS Group Secretary.

Other Societies and Events

Black Country Geological Society

4 July, 10:30 BCGS 40th Anniversary event at the Dudley Museum and Art Gallery
18 July, 10:00. 40th Anniversary Field Visit: An Introduction to Black Country Geology Part 1 - Revisited
15 August, 10:00. 40th Anniversary Field Visit: An Introduction to Black Country Geology Part 2 - Revisited
21 September, 7:30. Indoor meeting
<http://bcgs.info/pub/>

Leeds Geological Association

Saturday 4th July 2015. Daytime field meeting
Mam Tor Landslips – mass movement in Carboniferous strata. Prof Dan Faulkner
<http://www.leedsga.org.uk/>

Liverpool Geological Society

Field Trip to Anglesey Saturday 27 June 2015
<http://liverpoolgeologicalsociety.org/>

North Staffordshire Group of the Geologists' Association.

Thursday July 2nd 2015 18:00 Start
Bonsall - Leader Colin Bagshaw (EMGS). See bulletin for details
Sunday September 13th 2015. Teme Valley
<http://www.esci.keele.ac.uk/nsgga/>

OUGS

Saturday 22nd August, 2015. Bosley Cloud near Congleton, with Paul Aplin.

Manchester Museum

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

EVENTS

Date **Sunday 28 June**

Location Wirral

Leader Hilary Davies

Notes Wirral notes. Joint trip with GeoLancashire

Contact Penny Heyworth

Date **Tuesday 28 July**

Location Criggion Quarry

Leader John Peate, Principal Geologist, Hanson UK Ltd.

Contact Penny Heyworth

Date **Saturday 22 August**

Location Bosley Cloud

Leader Paul Aplin

Notes Joint trip with OUGS

Contact Penny Heyworth

Date **Sunday 25 October** (Morning: half-day trip)

Location Trafford Centre

Leader Jane Michael

Notes The Fred Broadhurst Memorial Field Trip

Contact Penny Heyworth

Field excursion to Wirral
Sunday 28 June 2015

Leader: Hilary Davies



Irish Sea Till at Thurstaston



Granite erratic in cliff

This excursion will visit a number of sites on the west coast of Wirral in West Kirby, Hoylake and Thurstaston to examine a variety of Triassic exposures and a thick layer of Irish Sea Till, which is being eroded by the sea, revealing a variety of erratic boulders.

It will be necessary to travel by car between locations using as few cars as possible. Extra cars can be left in the pay and display car park at the start, which is also the finishing point.

Packed lunches are preferable, although there are cafes and pubs in the area.