



Manchester Geological Association

President: Niall Clarke MSc

June 2020

www.mangeolassoc.org.uk

Founded 1925

A Message from your President

Welcome to the June MGA newsletter. I hope you are all keeping well during these unusual times. Most of you are outdoor people and have probably been particularly badly hit by the restrictions over the last few months. Hopefully the sacrifices have been worth it and as the lock down restrictions are being eased you are beginning to return to some sense of normality. We are still hoping to run our field trips scheduled for August and September and our autumn/winter lecture programme but it is likely that some restrictions will remain in place for the rest of the year so we are developing contingency plans. Thanks to the University Geology Department and the ingenuity of some Council Members we are planning to run events over the Internet using Zoom; instructions on how to download Zoom and join these events are on page 4. So we can keep in touch, **please ensure we have your correct email address** (you can confirm this at niallclarke01@gmail.com). I realise a few of you do not have Internet access but we do want to continue to provide as much geology as we can in the coming months so please bear with us. I hope you enjoy this newsletter and that we will all meet up again in due course.

Manchester Geological Association Zooms into the Present! Coming to a laptop/tablet/iPad/phone near you: Online Lectures

Monday 15 June 2020 from 7.30pm. Zoom test meeting

The programme for the lectures is as follows:

Wednesday 24 June 2020: Lecture: Peter del Strother: From Siderite to Medieval Iron Making

Wednesday 29 July 2020: Lecture: Margaret Hartley: A volcanological tour of Mt Etna

Wednesday 26 August 2020: Virtual Field Trip: Peter del Strother: Crummack Dale

Wednesday 23 September 2020: To be confirmed

All meetings will start at 7pm with a log in time from 6.30pm. The meetings will last one hour including questions so say 45 mins of talk + 15 mins questions.

Who's Who in the MGA

Officers

President: Niall Clarke MSc

Vice-President: Dr Margaret Hartley

General Secretary: Sue Plumb BSc

Membership Secretary: Niall Clarke MSc

Treasurer: Jennifer Rhodes BA

Indoor Meetings Secretary: Jane Michael BSc (Hons)

Field Excursions Secretary: Vacant

Newsletter Editor: Lyn Relph BSc (Hons)

Webmaster: Peter Giles MSc

Other elected members of Council

Prof. Ray Burgess

Nicola Fowler BSc (Hons)

Peter Gavagan BSc (Hons)

Penny Heyworth Mphil

Ken Jacobs

Ex officio members of Council

The Immediate Past President, Manchester Geological Association: Prof. Cathy Hollis

RIGS Representative: Dr Chris Arkwright

The Association's representative on the North West Geologist's editorial team: Peter del Strother MBE
Mphil

President of the Student Geological Societies of the University of Manchester

MGA Archivist: Dr Derek Brumhead MBE

MGA email addresses

To contact our President: president@mangeolassoc.org.uk

To contact our Vice-President: vicepresident@mangeolassoc.org.uk

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

For membership enquiries: membership@mangeolassoc.org.uk

For field visit enquiries: outdoors@mangeolassoc.org.uk

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

For newsletter correspondence: newsletter@mangeolassoc.org.uk

For other enquiries: info@mangeolassoc.org.uk

The MGA June Geological Quiz for your delectation!!

Question 1: Where is this? Image Q1

Question 2: Which type of low temperature mineralisation is usually hosted in sedimentary rocks, and typically comprises a mineral assemblage of galena, sphalerite, barite and fluorite?

Question 3: What is the mine famous as the source of gold for British Royal brides?

Question 4: What might you have at *crout*?

Question 5: Which famous bitumen and oil seep, and SSSI, in the Peak District is shown in the image? What is the host rock? Image Q5

Question 6: What have *trenching* and *hushing* in common?

Question 7: What is the group name of the principle oil and gas reservoir in Liverpool Bay and the Wytch Farm oilfield, in the Wessex Basin, and the geological period in which it was deposited

Question 8: Where was the last operating deep coal mine in the UK?

Question 9: Where is this and what geological feature is it? Image Q9

Question 10: Name the sunlit peak? When was it taken? Image Q10

Answers in the September issue.



Question 1



Question 9



Question 5



Question 10

Manchester Geological Association

Zoom Meetings: Instructions for Use

The MGA Council has decided to put on monthly 'online' lectures whilst we are unable to meet in person or attend field trips. The platform we have decided to use is called Zoom. Below is more information to help you get started and then use Zoom. Some of you may already be using it for other societies' meetings/family get-togethers etc which is great. For others this may be your first experience. Don't worry, it's not difficult to use and works well.

So, a bit of background. The system is called Zoom and it seems to be quite popular. It is already widely used during the crisis by many organisations to allow groups of people to meet.

Members will need some form of Internet-enabled device, such as a tablet, laptop, PC or phone. Meeting organisers set up the meetings using an account on Zoom (in our case Manchester University will be our 'hosts' – thanks, Cathy and Ray) and generate access links. These **links will then be sent to the members by e-mail a few days before the meetings** and it will be a simple matter of clicking on the link up to half an hour before the appointed time.

For laptops and PCs, the Zoom service will download a browser-based applet that will open the meeting screen in a web page. For **other devices**, it may be necessary to download and install the Zoom app in advance, but once done, a simple click on the link will suffice. People using phones may need to enter a password that will be sent out with the meeting invitation. The meetings will be opened about 30 minutes before the start time, but please join at least 10 minutes before the start of the meeting to allow your device to be fully set up and also to flag up any problems before the meeting starts. The 'host' will 'admit' you to the meeting so there may be a short delay before you get to 'see' anything.

Anyone having problems can email Cathy.Hollis@manchester.ac.uk. The meeting organiser for the meeting will be monitoring this email address. The meeting organiser can control and change how participants are able to respond during the meeting and depending on what has been enabled, attendees can send chat messages to the whole assembly or to individuals, respond by audio or indeed, respond by video if they have a camera attached to their device. Meetings can be recorded by the organiser and screen shots can be taken by the users as and when they feel the need. So, all in all, we believe that this will provide the Members with almost as good an experience as a live meeting, but with some extra benefits. Just about the only downsides will be the experience and delight of face to face encounters with our friends and colleagues, sharing beverages and biccies! The latter we'll have to sort out for ourselves.

These are very difficult times for all of us. The Council has worked hard to find a way to keep the essence and spirit of the MGA strong and vibrant while we're not permitted to meet physically. We hope you will enjoy the new experience and we will be keen to hear your feedback.

One point is that you should make sure your **signal strength** is excellent or the picture will break up. So it is suggested that you either sit almost next to your WiFi router or, if you can, attach your device (I think this mainly applies to laptops/desktop PCs) by a wire to the WiFi router. If you have connection problems, try turning off the video on your device. You can do this using a button in the bottom left corner of the Zoom app.

So to recap the instructions:

You have three basic options for participation:

- (1) on a Windows desktop PC/laptop or a desktop Mac/Macbook
- (2) on a tablet or smartphone (iOS or Android)
- (3) by telephone (for audio only) – see phone numbers in meeting details below.

Zoom is VERY easy to use, but PLEASE READ THE FOLLOWING CAREFULLY!

For option (1) you probably won't need to do anything in advance*, other than make sure you have working audio connections (microphone, headphones or a combined headset) and preferably a webcam or built-in camera (you can turn this off if you prefer).

The camera makes the whole experience much closer to a 'real' meeting and hence more enjoyable for everyone. But don't worry if you don't have a webcam you can still enjoy the content and join in any Q&A or discussion: ie you will be able to see the presentations but no one else will be able to see you. Many laptops have sound and video built in and of course this is standard on tablets and smart phones.

For option (2) you should install the free Zoom App beforehand, available on the relevant App Store under "Zoom Cloud Meetings".

To enter the meeting, you simply click on the link under 'Join Zoom Meeting' below. You can do this before the official start time, and you'll be admitted as soon as possible. Note a simple password will be required which will be included in the email invitation and reminder.

* **Some Mac users** may have to change their system settings to allow screen sharing. See Zoom help for details.

For Option (3) Using your phone only.

Dial by your location

+44 208 080 6591 United Kingdom

+44 208 080 6592 United Kingdom

+44 330 088 5830 United Kingdom

+44 131 460 1196 United Kingdom

+44 203 481 5237 United Kingdom

+44 203 481 5240 United Kingdom

Find your local number: <https://zoom.us/u/acips5i7Jt>

To help people get to grips with Zoom, there will be a **Test Meeting being held on Monday 15 June 2020 from 7.30pm**. This is where you can log in to ensure everything works and if there are problems, there will be someone available to help. You will be sent an email with a link and a password to enable you to do this.

For any problems or questions, please email Jane Michael (lectures@mangeolassoc.org.uk) or phone Jane Michael on 07917 434598.

We look forward to 'seeing' you at the lectures!

Jane Michael
Indoor Meeting Organiser

MGA/GeoLancashire excursion to Apedale Newcastle-under-Lyme

15 March 2020 by Peter del Strother

Barbara Gordon of GeoLancashire organised this excursion, which comprised a special 'extended' trip down the Aurora mine in the morning and, in the afternoon, a geological walk led by Dr Ian Stimpson of Keele University. Thanks to both Barbara and to Ian, who provided a good deal of the information for this report. Thanks also to the mine staff, all volunteers, who led us underground and ensured our safety there. They also provided the first two photographs below. The mine is regularly open for tours, see <https://www.apedale.co.uk/attractions/mine/>. There is an excellent museum in the Visitor Centre.



Apedale Visitor Centre Apedale Visitor Centre

We followed an approximately metre thick coal face seam down dip at about 30°. We then crawled along strike for a few tens of metres and scrambled back up dip. We saw the overlying iron-rich sandstone roof and underlying mudstone

which is prone to ground heave. Our guide, who had worked in the mine, had been replacing pit props, so the roof looked very secure. Nobody had any significant difficulty following the route, which was impressive as there were at least two artificial knees between us, one barely two months old! A deeper excursion was not possible on the day because of flooding. Several of us are minded to return to do that another day.



The mine entrance.

Mining in the area has been going on since Roman times, for both coal and iron ore. The visitor complex is on the site of the Apedale Iron Works which in 1785 commenced producing iron from a blast furnace. The works finally shut down in the 1930s. Deep pit working started in the 1790s, mostly to feed the ironworks.

The Upper Coal Measures crop out in a northward pointing V-shape, a consequence of the Potteries Syncline. Five of the 'Six Towns' are located on the outcrop, Tunstall, Burslem, Hanley, Fenton and Longton. The sixth town is Stoke to the south. In his novel 'Anna of the Five

Towns' Arnold Bennett omitted Fenton, apparently because he believed "Five Towns" were more euphonious than "Six Towns". All the raw materials were nearby, coal for kilns and furnaces, fireclays for kiln refractory linings and ironstones for steel making.

Almost all the Coal Measures succession is exposed along the valley, representing about 2,000m of strata, a greater thickness than all other UK coalfields. The coal seams at the Aurora mine, which dip between 30° and 45°, were worked by both drift and deep mining. On the western limb the dips are up to 70-80 degrees, and the drift mines that follow those seams, known as 'rearers', were quite precipitous. To a greater or lesser extent 34 coal seams and 16 ironstone bands were worked. Before the First World War, 20,000 men worked in the industry and over 50 pits were in operation https://en.wikipedia.org/wiki/North_Staffordshire_Coalfield.

Blackband iron formations, which were the source of the iron ore, are essentially thin (approximately 0.75 m thick) siderite-rich, carbonaceous, laminated mudrocks which commonly occur in grey coal-bearing sequences in close proximity to coal seams (Boardman, E.L., 1989. *Coal measures (Namurian and Westphalian) Blackband Iron Formations: fossil bog iron ores*. Sedimentology 36). The blackband iron formations in north Staffordshire, with associated coals, are approximately 85 m thick. Siderite, which is iron carbonate, was formed soon after deposition and in some cases preserves plant matter and spores. The blackband iron formations are considered to have been formed in a similar way to Recent bog iron ores and are therefore interpreted as fossil bog iron ores. The carbonaceous nature of the blackband ores was a major benefit to economic processing. The ore was placed in clamps, 2m by 6m by 100m or more in length, which were set on fire at one end. Because of the carbonaceous matter the fire was then self-sustaining. The heat calcined (drove off

the carbonate from) the siderite leaving iron oxide, so enriching the ore and, just as importantly, reducing the heat required for smelting. The Fe content of pure siderite (FeCO_3) is 48% and of iron oxide (Fe_2O_3) 70%.



Mine exit with belt conveyor

In Ian's walk through the Apedale Valley, he elucidated the history and pointed out geological features of the country park. Apedale was the site of one of the first onshore hydrocarbon exploration wells in 1920 which, whilst failing to find any oil or gas, did discover the Apedale Volcano. The geological

origins of the Apedale Valley lie in the Apedale Fault and there are plans to extract geothermal energy for Stoke-on-Trent from the fault-fractured rocks deep below the surface. The faulting is complex and is related to the late Neoproterozoic Midlands microcraton, whose northern boundary is defined (approximately) by two straight lines drawn from Pembrokeshire to Newcastle-under-Lyme and from there to Kent (Butler M., 2018. *Seismostratigraphic analysis of Paleozoic sequences of the Midlands Microcraton*. In: Monaghan, A. A., Underhill, J. R., Hewett, A. J. & Marshall, J. E. A. (eds). Paleozoic Plays of NW Europe. Geological Society, London, Special Publications, **471**) and (Kirkby, G.A., Bailey H.E., et al. 2000. The structure and evolution of the Craven basin and adjacent areas. Subsurface Memoir, British Geological Survey, HMSO).

OTHER SOCIETY EVENTS

All the societies have cancelled all or part of their summer programmes, but I have retained the web address so those who are interested can keep up-to-date with each societies' events. Many now have online events and some very good links. Ed.

Yorkshire Geological Society <http://www.yorksgeolsoc.org.uk/>

BCGS <http://bcgs.info/pub/>

Leeds Geological Society <http://www.leedsga.org.uk/>

GeoLancashire <https://geolancashire.org.uk/lectures-and-excursions/>

OUGS North West Branch <https://ougs.org/northwest/>

John Price



John Price was a leading light in the MGA for many years and many older members will remember his kindness and sincerity with fondness. Sadly, John has recently passed away, his death hastened by COVID19. Two members have written appreciations, firstly Fred Owen who worked closely on the Council with John and secondly a neighbour and friend Richard Parr.

“During John’s Presidency I was working on assembling a selection of cobbles for display at Knutsford Heritage Centre to interest the public in their geological origins. John enthusiastically supported the project and the MGA Council approved a £750 grant from the Horrock’s Fund to cover its full cost. John was always gentle and cheerful and enjoyed communicating his love of geology to others, as is evident in the photo taken after Fred Broadhurst had unveiled the display for formal handover to the Heritage Centre, in March 2006. The display is still there (though the poster has been revised) and I tend to it twice a year to keep it clean and respectable. It is a lasting example of the contribution John made, and the MGA continues to make, to bring geology to the public.

I believe it was John who proposed Peter Prydderch to become the Association’s accounts examiner, a role he only relinquished at February’s AGM. John’s love for, and contribution to, the MGA is acknowledged and greatly appreciated.”

Fred Owen

“John Price was a gentleman, in every sense of the word. He was kind, thoughtful and generous. Before I joined our local U3A, John had organised and led geological visits and holidays that were greatly appreciated, and still remembered today. I know he was a keen walker, who had completed a number of long-distance trails. He was responsible for introducing me to the delights of "Down to Earth", as well as our Manchester Geological Association. He was always delighted to share his enthusiasm and knowledge, but always quietly and modestly. He greatly missed his beloved wife, Enid. We shall miss him, too.”

Richard Parr

Photo Competition Entries: part one

Please vote for your favourite picture by emailing the newsletter Editor:

newsletter@mangeolassoc.org.uk



01 Tuff layers in Caerfai Shale



02 Strombolian eruption – Stromboli (2017)



03 galena vein within the band of dolomite found just above the shoreline at the foot of the Great Orme



04 Folding at Cocklawburn, Northumberland



05 pahoehoe flows over aa Hawaii



06 four-legged custodian of the Great Orme, encountered on the way down to sea-level.



07 Monian (possibly Cambrian) schists



08 Volcanic plug, near St Andrews, Fife



09 Fossil olive leaves (*Olea europaea* Linné) preserved in volcanic ash – Thera, Santorini



10 Nodules embedded in shales in Healy Dell, Nr. Rochdale



11 Mynydd Parys Anglesey. Lower Ordovician to Silurian sediment



12 Magpie Mine



13 Minoan eruption pumice infilling erosion surface in scoria deposits - Santorini



14 Viaduct crossing Healy Dell



15 Sue



16 Giant solitary coral



17 Mossy, rocky defile through Lud's Church



18 Flysch deposits - Zumaia Basque Country, Spain

Photo Competition Voting

Please vote for your favourite picture by emailing the newsletter Editor:
newsletter@mangeolassoc.org.uk

There will be another batch of pictures in the September issue.

Manchester Geological Association Zooms into the Present! Coming to a laptop/tablet/iPad/phone near you: Online Lectures

Council is also aware that there may be some of our members who will not have access to the Internet and therefore regrettably unable to join us online. We are sorry about this but there is nothing we can do about that. Please bear with us: we are hopeful that by the autumn our face to face meetings at the University will be possible and the Indoor Meetings programme already arranged will take place.

To help people get to grips with Zoom, there will be a **Test Meeting being held on Monday 15 June 2020 from 7.30pm**. This is where you can log in to ensure everything works and if there are problems, there will be someone available to help. You will be sent an email with a link and a password to enable you to do this.

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If you have any questions, please contact Jane Michael on lectures@mangeolassoc.org.uk and she will do her best to assist you.