



Founded 1925

President: Dr Rufus Brunt

<http://www.mangeolassoc.org.uk/>

# MGA

## September 2024

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### Manchester Geological Association

#### Proposed Centenary field trip

A longer field trip is being considered as part of the MGA Centenary celebrations.

It is hoped to be a three day mid week event during May or early June 2025. All sites have good parking. Except for the afternoon of day two, which has a lot of steps down to the beach, we will be walking on rough grassland, rocky/sandy beaches and public footpaths.

#### Provisional itinerary:

Day 1. Snowdonia

Day 2. Llyn peninsular; the Ordovician overstep

Day 3. Nefyn shear zone and cryo-tectonics.

#### Expressions of interest please to:

[newsletter@mangeolassoc.org.uk](mailto:newsletter@mangeolassoc.org.uk)

#### North West Geologist

The latest copy of the North West Geologist should be available for Members to collect at the next meeting. The remaining copies will be posted out at the end of December.

### EVENTS

Full details on last page

Building Stones of Central Manchester.

This trip was oversubscribed so a repeat trip will be arranged soon.

#### Lectures

**Saturday 19<sup>th</sup> October**

**15<sup>th</sup> February AGM**

Presidential address & member presentations

**We would like to hear Members suggestions for speakers; so if you have recently heard a good speaker please share the information.**

[lectures@mangeolassoc.org.uk](mailto:lectures@mangeolassoc.org.uk)

Our winter programme of lectures is now being collated and will be forwarded to Members as soon as possible.



## Healey Dell

The river Spodden runs down the Healey Dale which is cut deep into the Rough Rock. Just above the Rough Rock, at the very top of the Namurian, lies the Six Inch Coal and a few metres above it a marine band containing the goniatite *Gastrioceras subcrenatum*, which marks the base of the Westphalian (approx. 320-308 Ma). These sediments were deposited in a subsiding basin from near-equatorial river systems, which were 700 km wide and drained large mountain ranges to the north.



Our first stop of the day was the rubbing-mill where the rippled top of the sandstone flags was ground off to make them flat and comfortable to walk on. Haslington produced 2000 tons of flags per week. They were used all over the country including Manchester and Trafalgar Square in London.

The mill consists of a coal fired engine house and two pits where the rotating grinding tables were housed. These were connected by a drive shaft, but only the shaft tunnel is visible. The pits and the base of the engine house can still be seen today.

**Donkey stones** (originally called Lonkey stones) were made of the fine waste stone from the rubbing mill which was mixed with cement and a colour. They were cream, brown or white. Originally used to put a non-slip surface on greasy stone stairs in the mills, but later housewives used them to put a smart finish on their front door step. It became something of a ritual and I suspect an excuse to gossip to the neighbours.

The last manufacturer of these stones was a firm called Eli Whalley, which closed in early 1979.

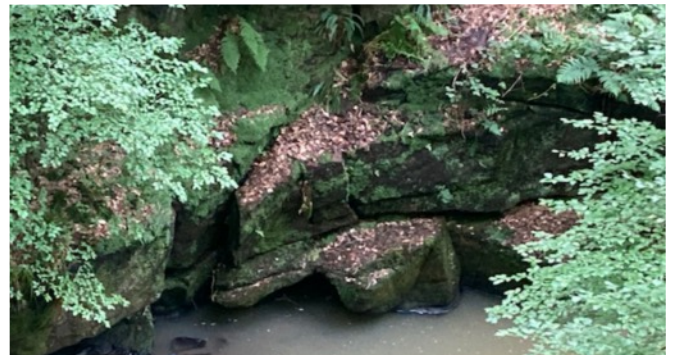
Although there was coal mining in the valley, the adit on the far side of the river (to the bottom left of the picture) was probably associated with a siderite mine. Siderite, (iron carbonate  $\text{Fe}_2\text{CO}_3$ ), would have been the ore for the manufacture of iron in a late mediaeval bloomery, the evidence for which was found nearby.

From here there was a leat that supplied water to Broadley woollen and cotton mill, but the leat was destroyed by a flood. A new leat was built and rerouted across a field and then back across the river; where there is now a foot bridge (Members of our group are seen crossing) and the leat farther down where it is quite wide, about 1.5 metres and somewhat overgrown (see pictures on next page).





Cross Station Road and descend the stone steps. From a little farther down the wide path, you can look over to the opposite side of the gorge and see the sheer sides. This is a clear indication of rapid down-cutting by the river, into a weak rock joint system, caused by prolonged torrents of meltwater as the ice sheet retreated far to the north during the waning of the last ice-age. Notice also the curved rock-face as the force of the water swirled round.



Looking across the river from the Fairy Chapel is some tabular cross bedding. They are the result of underwater dunes moving downstream during periods of fast flowing water carrying a high sediment load.

From here there is a superb view of the river and waterfalls.



Return to the main path and continue downhill to the long rock face on the left.





A small load structure above which is a small fragment of plant fossil. Although this fossil is ribbed a bit like a *Calamities* it is unlikely that a *Calamities* stem would have survived in the high energy environment in which these sand stones were deposited, so it is more likely that it is a piece of a climber stalk.

We came across a triangular area of fractured rock with what looked like the remains of some orange sand. Further along is a patch of very soft orange sand (arrow) and an area where part of a bed is missing so the question is was this all that remains of a bed? As it is soft it could have worn away from the triangular hole where the overlying rock is flaking off.





Between the path and the river is the remains of a fullers mill. This is accessed by a cobbled roadway. A close look at the cobbles revealed that they are well worn very dark grey igneous rock. As there are no igneous intrusions in the valley they must have been imported from some distance away. In the background the very imposing railway viaduct can be seen.

On the right can be seen one of the original two bridges that supported the mill until it was washed away during a flood.

Below is the waterwheel pit. This must have been a large wheel as the pit is from the top of the photograph to several feet below Steve (our membership secretary) is about six feet tall.

There are three remaining sandstone tanks that were used for processing the cloth. One has channels cut into the ends so that dividers could be used enabling several processes to be carried out in one tank.





A view of the spectacular skewed angle railway bridge. At the base of the one of the pillars on the opposite side of the river can be seen a fault showing the older Rough Rock above the younger shales. The bedding of the shales turns upwards towards the fault as it was dragged up by the upwards movement of the Rough Rock. As we saw later the shales are horizontally bedded.

At the base of a pillar beside the path is a sluice gate that controlled the supply of water to a mill farther down stream.



Part of the leat runs underground; here we saw the entrance to what is quite a long tunnel, the other end is close to the mill pond just before the Railway inn. This pond is supported by a huge brick wall.

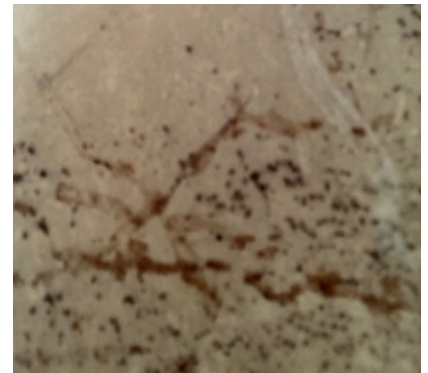
Below are the not very impressive shale beds. Here we found some not very convincing plant remains.





Growing on a fallen beech tree was a bracket fungus *Ganoderma appanatum* also known as the artist's because when the underside is scratched it leaves a red mark as though it is bleeding.

We noticed an unusual fern, Hard Fern *Blechnum spicant* growing alongside the path from the Railway inn.



**Twin Bridges** The construction of the Healey Dale branch railway line was difficult because of a thick, sloping and unstable bed of silty clay that covered the area. A newly built bridge slid towards Heap Mill reservoir. Amazingly this bridge remains intact but out of alignment with the new track bed so another bridge was built alongside the original bridge leaving the two bridges side by side as we see today.

After a great day out, even the weather was good, all that remained to do was to thank Peter del Strother and Brian Jeffery for a very interesting and informative day.

A useful web site for anyone visiting the area <https://www.visitrochdale.com/things-to-do/healey-dell-nature-reserve-p85871>

## Other Societies Events

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

16 September – H.W. Hughes - a glimpse into the life & works of a Man of Coal

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

10 October. Here be sea monsters: New perspectives on fossil marine reptiles. Speaker: Dr Rebecca Bennion, University of Liege and YGS.

7 November. Monitoring community exposures to volcanic emissions on Montserrat, Eastern Caribbean. Speaker: Rosie Lewis, SEE, University of Leeds.



## Other Societies Events contd.

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

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

September 25 Guided visit to Williamson Tunnels and building stones of central Liverpool

November 30 Afternoon programme of 3 talks, with refreshments

**Liverpool Geological Society** <https://liverpoolgeologicalsociety.org/>

**Westmorland Geological Society** <https://www.westmorlandgeolsoc.org.uk/>

18 September Michael Roberts WGS Darwin and Wales, 1831 and 1842, rock and ice, baobabs and boobies

16 October Dr Danny Clarke-Lowes Nubian Consulting Geology of the Himalaya

20 November Dr Katy Chambers Univ Liverpool From cataclysmic super-eruptions to monogenetic burps:  
A crystal-eye-view of the timescales of volcanism

18 December Members evening Several short talks and displays by members

15 January Dr Tim Pharaoh BGS The evolution of the crust of southern Britain (Note: lecture will be on ZOOM)

19 February Dr Hugh Tuffen Univ Lancaster AGM & President Address

19 March Dr Stefan Schroeder Univ Manchester 500 million years that changed the world: geological  
travels in South Africa through Earth's first oxygenation

16 April Prof Bob Holdsworth Univ Durham Fissures and fills and why they matter

Lectures will be held in Abbot Hall Social Centre, Kendal; refreshments at 19.30, lecture at 20.00. Everyone is welcome.

**North Wales Geology Association** <http://www.ampyx.org.uk/cdgc/rhaglen.html>

19 September Geothermal becomes cool in Minecraft Speaker: Simon Kendall, E&P Data Licensing

17 October Jordan Phethean, University of Derby

14 November Speaker: Katrien Van Landeghem, Professor in Marine Geology Bangor University

**Geologist Association Annual Conference**  
<https://geologistsassociation.org.uk/conferences/>

27 to 29 September Bristol's Diverse Geology





## Notice of the MGA AGM 2025

The Annual General Meeting of the Manchester Geological Association will be held in the Williamson Building on Oxford Road at 2.00pm on the **15<sup>th</sup> of February 2025**. Please note that **the date has changed from the 8<sup>th</sup>** which was stated in the minutes of the 2023 AGM.

This will be followed by the Presidential address from Dr Rufus Brunt and Member presentations

There will be a break for coffee and biscuits.

## Next Lecture

**Saturday 19<sup>th</sup> October** Broadhurst Lecture.

## Internationally important geological sites

Seven sites in the United Kingdom have been named on a list of internationally important geological sites

<https://iugs-geoheritage.org/designations/2/?ref=inkcapjournal.co.uk>

