



MGA



March 2024

Manchester Geological Association

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Prof. Ray Burgess
Nicola Fowler
Nial Clarke

Derek Brumhead

Sadly Derek Brumhead passed away in February this year. He will be greatly missed by all who knew him.

Contact Details

Would Members please update their contact details, especially email addresses. Email addresses are used to inform Members when there is a change to events, send you the Newsletter and sometimes information about other Societies activities which you may find interesting. **Please notify the Membership Secretary of any changes at** membership@mangeolassoc.org.uk.

Exhibition

This exhibition came to my attention – may be worth a visit!

<https://events.westcheshiremuseums.co.uk/event/the-geology-of-cheshire-salt/>

Printed Newsletter

Would Members please note that due to the cost of printing and posting the newsletter only those Members who have paid the higher subscription of £26 (£28 for a couple) will receive a printed copy. **All other Members will in future receive the newsletter by email** so please update your email addresses. Please send your email updates to membership@mangeolassoc.org.uk.

EVENTS

Full details on last page

Fieldtrips

May 04 Todmorden Moor

May 18 Alderley Edge and Copper Mine

June 12 Coastal Geology at Heysham

July 17 Geology of Crummackdale

Aug 10 Geology and Industrial Archaeology of Healey Dell

Sep 03 Building Stones of Central Manchester

Lectures

June 8 MGA - YGS meeting on carbonates



Derek Brumhead and the Manchester Geological Association

by Jim Spencer



The Manchester Geological Association is approaching its centenary. Nearly a hundred years ago a group of geologists at Manchester University arranged an amicable split from the much older Manchester Geological Society, which had become the Manchester Geological and Mining Society, so that they could re-focus on geological matters rather than on coal-mine ventilation shafts and winding engines. Over the years many geologists have contributed to the success of the MGA. Older members will remember the enthusiasm of Fred Broadhurst and Paul Selden, of the former Department of Geology, in their lectures and field trips. More recently, Ray Burgess, Cathy Hollis and Margaret Hartley, of the School of Earth Sciences, have continued with that valuable support. The geological curators at Manchester Museum, Dr Wilfrid Jackson, Dr Michael Eagar and Dr John Nudds have been stalwart in their support and arranging access to the Stratigraphic Gallery for the purposes of MGA conversatione.

One person, Derek Brumhead who died recently, deserves special mention for his outstanding efforts to keep the MGA ticking over. Derek was a geology lecturer at the then Manchester Polytechnic, a member of MGA and the YGS. He wrote "Geology explained in the Yorkshire Dales," one of the "Geology explained in ..." series of the publisher David & Charles. During the 1970s and 1980s, when Derek was on the MGA committee, he took it on himself to carry out much of the work to run the MGA. With his interest in geology, living in New Mills, he researched the history of coal-mining in the area. Here the coal seams are lower in the Carboniferous succession than the main Lancashire and Yorkshire coalfields and much poorer quality they were nonetheless worked. This led to a number of field trips for the MGA and several publications on coal-mining in the western Pennines area.

His interest in the history of New Mills led to him learning Latin to translate early property deeds of the area, and setting up the New Mills Museum, which he and his wife Alice ran. Derek gave an annual lecture in New Mills town hall on local history; attended by three or four hundred people.

He rather modestly said he thought they might just have come for the free buffet. What a pity that Derek didn't survive to see the centenary of the MGA.



A memorial service will be held sometime in May; details to follow.



Alderley Edge Engine Vein Mine, Cheshire

30th Sept 2023

Leaders: Anton Petho and Nigel Dibben

By David Tyler and Lyn Relph



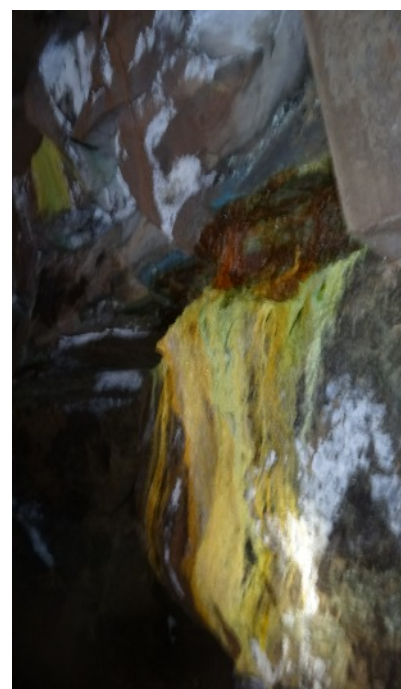
The entrance to the Engine Vein Mine (front cover and above). Two faults, one each side of the photo, merge near the entrance in the centre. The blue colour is the secondary copper deposit that coats the grains of sand, which the Bronze Age people extracted, mostly from bell pits.

Mineralisation in the mine

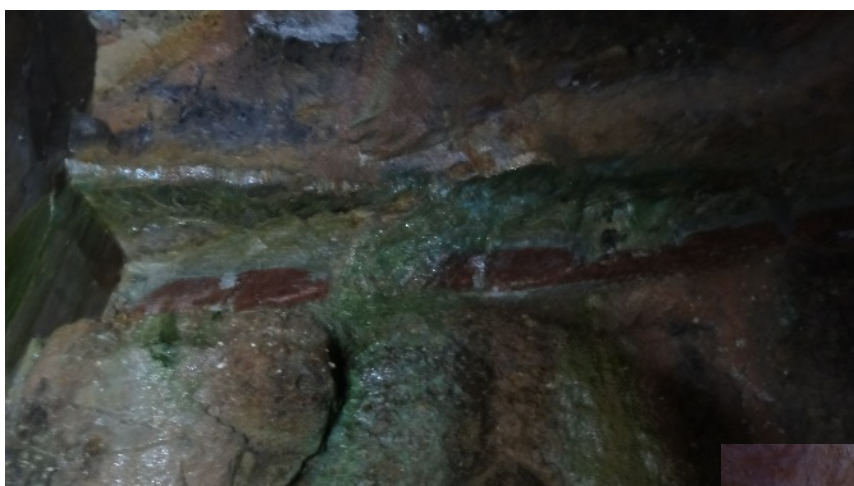


Two photos of the mineral vein that was worked from medieval times until the mine closed in 1922.

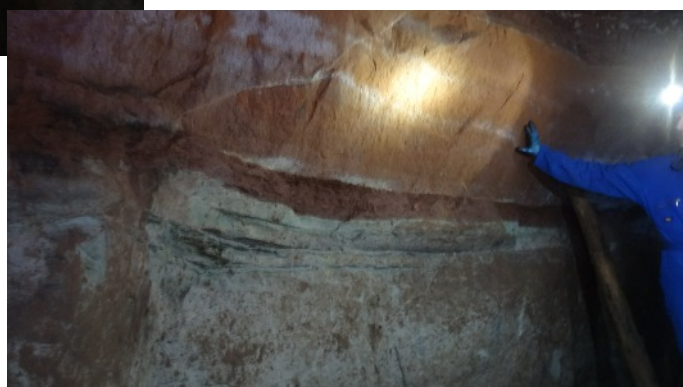
The pink mineral is barite; galena is also in this vein.



Acidic rainwater reacts with iron (the rusty lump) in the mudstone to stop mineralised water circulating, this concentrates the minerals; there were weak spots where the fluids can get through.



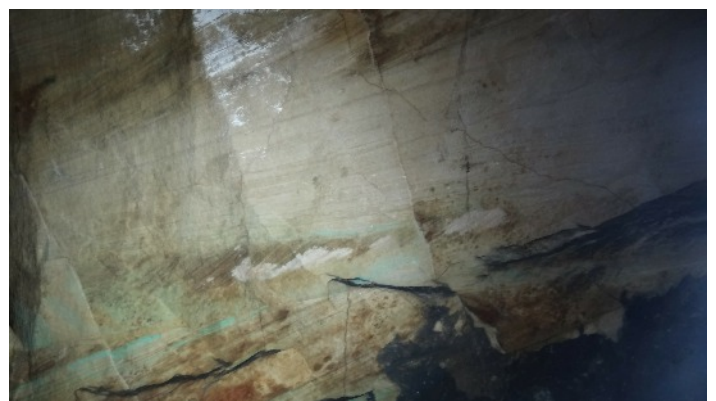
This is a thin red mudstone towards the roof. This horizon was impermeable mud which inhibited the upwards movement of the mineralising fluids that deposited minerals below the bed. However, there are fissures through the mudstone allowing the mineralising fluids through in some places.



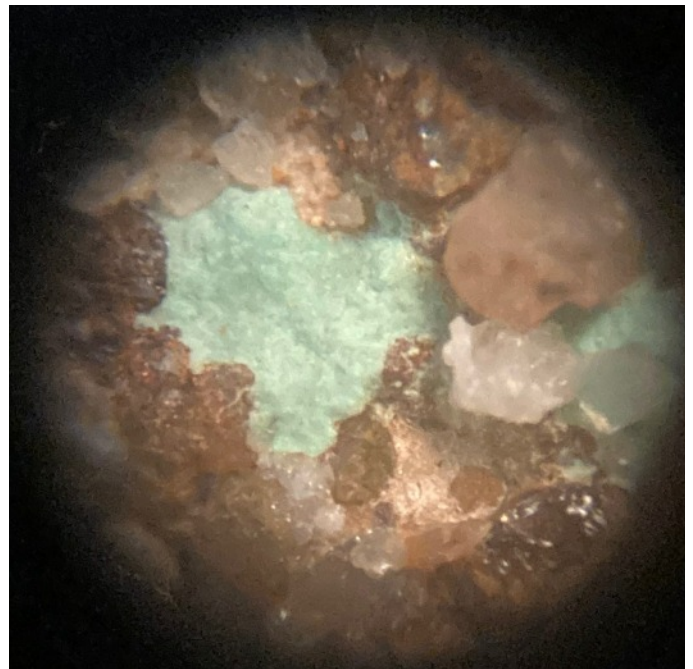


Mineralised (white) fracture zone we saw en route to the Bear Pit shaft.

The pale cream lines are barite deposits



The primary copper deposits are concentrated in the foresets. This is because the grains making up the foresets are graded from fine to coarse. The coarse sections are more porous than the fine sections allowing the mineralising fluids to flow through and depositing the copper as they pass. Above are sections within the mine and below left is a sample.



Above right. Close up (x20) of primary copper ore deposited between the sand grains rather than coating them as in secondary mineralisation. Note the sand grains are frosted, as you would expect in a desert environment.





Two photos of turquoise coloured copper which is being re-deposited from water trickling through the rocks. This mineral is chrysocolla.

Sedimentary structures



Desiccation cracks picked out by a lighter mineral

Ripples in the sandstone. These are asymmetrical so were deposited by flowing water. Above the ripples are more desiccation cracks.

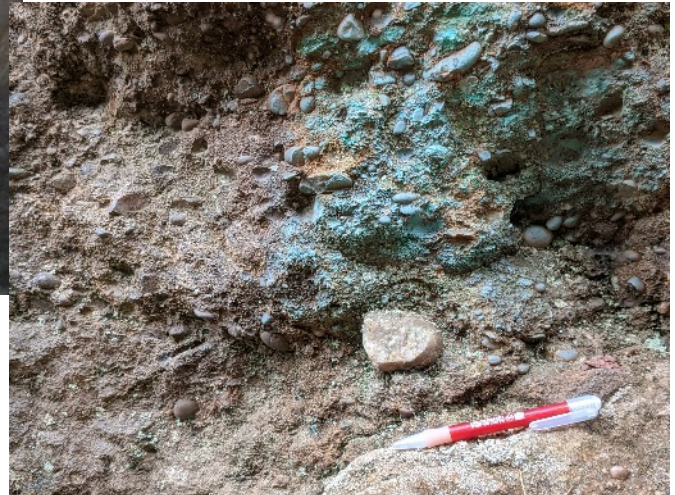
Photo; Peter del Strother





The surface of the Engine Vein fault
Fault as seen in the mine.

Conglomerate with copper deposit.



Mine workings



The bear pit shaft



The original Medieval stope (above left) was about 3ft wide. Later shafts were dug. The Roman shafts were about 4ft wide. Roman coins were found in the mine, but they were of less value than the copper so no one bothered to take them away (they are now in the Manchester Museum).





Left. A Victorian shot hole; these were triangular shaped because the corners concentrated the blast. Even the gunpowder charges were triangular. They used black powder which is very unstable. The charges were fired in the evening so that the air cleared by the time the morning shift started work.

Men worked in teams of six: youth, boy, two labourers and two skilled miners; usually Cornish. Depending on the type of job men were paid by the tonne extracted.

There were only two fatalities during the Victorian era; James Michel who fell down a shaft and a boiler explosion killed another man.

Below Members examining the fault face.

Photo; Peter del Strother



Our thanks go to Anton Petho and Nigel Dibben for leading the very interesting trip.

There is a good reference book on Alderley Edge that was written by Chris Carlon and Nigel Dibben.

The Alderley Edge Mines

Independent Publishing Network,
2012.



Other Societies Events

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

- 6 April** Field Meeting to Castleton, Derbyshire looking at the limestones in Cave Dale and the sandstones and landslip on Mam Tor
- 15 April** 'Geology of the Chiltern Hills; new data & new interpretations'

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

- April 18** Relict periglacial geohazards in the United Kingdom.
- May 2** The real Jurassic world – Frog Earths in the Middle Jurassic.
- May 18** LGA 150th Anniversary Day at Leeds City Museum.
- October 10** Here be sea monsters: New perspectives on fossil marine reptiles.

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

- 26th April.** Bob White “The Geology of the First Life on Earth

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

- April 6th** Geology and limestone pavements of Hutton Roof. Chris Arkwright & Pam Norris
- May 12** Geology of the Craven Basin, Bowland. Nick Riley (C&P GS)
- May 25th 2024 – Jun 1st 2024** Fossil sites of Germany with Dr John Nudds
- July 13** The Castle Head intrusion, Keswick. Alan Smith (CGS)
- July 14** Geology and mines of West Cumbria. David Kelly (CGS)

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

- 9th June** Wirral & Chester. The Triassic of NW England. Field excursion led by Neil Meadows.
- 29-30 June** Upper Gilwern Quarry near Llandrindrod Wells. Fossil trilobite collecting with Mike Stoddart.
- 7 July** Austwick. Study of the Craven Inlier. Field excursion organised by Peter Burgess.
- 1-10 August** Iceland. Field excursion organised by Hazel Clark via Izzy Tours.



MGA - YGS - LGS meeting on carbonates Saturday June 8th
at Liverpool University Teaching Hub 502 Bld

- 10.00 Registration, coffee and chat
- 10.30 Introduction
- 10.40 Jo Garland - "Marine carbonates and carbonate platforms"
- 11.20 V Paul Wright - "Non-marine carbonates: the interface of sedimentology and hydrology"
- 12.00 Break
- 12.20 Discussion - are all carbonates actually a bit weird?
- 12.50 Lunch break
- 13.50 Cathy Hollis - "Where's the margin? The rise and fall of the North Wales platform"
- 14.30 Peter Gutteridge - "Asbian to Namurian evolution and shut-down of the Derbyshire carbonate platform"
- 15.10 Break
- 15.30 Nick Riley - "Contrasting late Palaeozoic & early Mesozoic UK & W. Europe pelagic carbonates"
- 16.10 Discussion - UK platforms and the pelagic factory
- 16.40 Closing comments

MGA field excursions 2024

all joint with GeoLancashire but open to guests.

Brief notes on of what we expect to see are included. Most of these excursions are trails which will be included in the forthcoming 'Guide to geological routes around Manchester', which is being prepared by members of the MGA and GeoLancashire and will be published by the GA, we hope in early 2025.

May 04 BJ/PdS: "Todmorden Moor" held to celebrate the 100th Anniversary (1922-2022) of GeoLancashire. Meeting at Tower Causeway car-park at SD912250. We will visit an exposure of the six-inch coal and the Subcrenatum Marine Band, the base of the Westphalian, and also industrial archaeology associated with coal mining.

May 18 Anton Petho, DCC geologist: "Alderley Edge and Copper Mine" (2023 repeat by demand). Meet at National Trust car-park, next to the 'Wizard tearoom,' at SJ859773. (This excursion has now almost reached its maximum number. I will start a waiting list if numbers are exceeded)

June 12 PdS/BJ: "Coastal Geology at Heysham".

Three locations, access to the first from Heysham village. Namurian sandstones and mudstones, sedimentary structures, non-marine and marine facies with trace fossils. A small exposure of Triassic sandstone. Access to, and conditions on, the foreshore are somewhat challenging with cobbles and boulders, some covered in seaweed.

July 17 PdS "Geology of Crummackdale" (joint WGS and perhaps with YGS).

Meet at Town Head Rd, Austwick at SD769687 or at Crag Hill Rd, Horton-in-Ribblesdale at SD805724. This will be a one-way trail, north to south, about 12 km long but with an option to reduce that by missing the Norber erratic locality. It will be necessary to leave a car at Austwick to take drivers back to Horton in Ribblesdale. This will be arranged prior to the excursion. We will see Carboniferous limestone and what is probably the most spectacular limestone pavement in northern England, a Silurian mudstone with Liesegang rings, a well exposed unconformity at Austwick Beck Head where a Carboniferous lime mudstone/siliciclastic conglomerate overlies bedded and cleaved Ordovician basement with enigmatic jointing, Silurian turbidites with rip-up clasts, cleavage and cleavage refraction, an unconformity at Nappa Scars with a difficult to interpret boulder bed and the Norber Erratics. All this is set in a glaciated landscape with a well exposed syncline in Silurian rocks seen in one side of the valley.

Aug 10 BJ/PdS: "Geology and Industrial Archaeology of Healey Dell". Meet on Station Rd, Broadley. Coal measures sandstones and industrial archaeology in a spectacular gorge with waterfalls, created by glacial meltwater.

Sep 03 PdS: "Building Stones of Central Manchester". Meet (probably at 13.30) at Visitor Reception Area on Library Walk, which is between Manchester Town Hall Extension and the Central Library. If oversubscribed, for traffic safety reasons I will run a repeat. Building stones and their geological background, plus some aspects of the history of Manchester.

Please email the excursion secretary Peter del Strother at outdoors@mangeolassoc.org.uk for details and meeting times.

