



Manchester Geological Association

President: Dr Cathy Hollis

March 2019

www.mangeolassoc.org.uk

Founded 1925

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Quick Diary

31 March	Turns Head and Healey Dell
2 May	Ecton Copper Mines
27 June	Brymbo Fossil Forest and Llay coal mine tip,
17 August	Bolton Quarries
22 Sept	Broadhurst Memorial Field Trip - The Geology of Samuel Oldknow's Mill

Who's Who in the MGA Officers

President:

President: Dr Cathy Hollis

Vice-President: Niall Clarke MSc

General Secretary: Sue Plumb BSc

Membership Secretary: Niall Clarke MSc

Treasurer: Jennifer Rhodes

Indoor Meetings Secretary: Vacant

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

Ex officio members of Council

The Immediate Past President, Manchester Geological Association: Jane Michael BSc

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: Derek Brumhead MBE

MGA email addresses

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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

OBITUARY

Morven Simpson 1922 – 2018

Dr Ian Morven Simpson FGS, known to all as Morven, was born in Edinburgh in 1922, son of Dr John Baird Simpson, District Geologist in the Geological Survey in Scotland. Morven's early education was based in Edinburgh, at George Heriot's School, and as an undergraduate student in Chemistry at the University of Edinburgh. His undergraduate career was interrupted by World War II, and when he resumed after the war, he switched to studying Geology. He graduated top of his class with first class honours, but usually added, with a twinkle in his eye, that there were only 4 geology students in his year, and two of those spoke very little English. Nevertheless, it was a good enough result to get him an appointment at the University of Glasgow as an assistant lecturer in Geology, and as a PhD student with Prof T.N. George, working on the Carboniferous Limestones of Ireland. In 1951 Morven completed his PhD and secured a position in the Geology Department at the University of Manchester, where he spent the rest of his working life.

He quickly gained an enviable reputation as a teacher, in the lecture theatre, laboratory and in the field, and started what turned into a lifetime research partnership, and deep friendship, with Dr Fred Broadhurst. Together they published many papers on the Carboniferous of Northern England, both clastics and carbonates, usually managing one day a week in the field, notably in and around Castleton, in the Peak District. This partnership also researched the urban geology of the sources and description of the stones used in Manchester buildings, culminating in the pioneer booklet *Building Stones of Central Manchester* (1975). While researching for the second edition (2008) in the 1990s they re-discovered the source quarry for the fine purple sandstone seen in such buildings as St. Anne's church in St. Anne's Square. This sandstone came from Collyhurst, first described in 1840s by the Victorian geologist Edward Binney as a stained Upper Carboniferous sandstone occurring below the true Permian Collyhurst Sandstone, for which it had subsequently been mistaken. They named it the "Binney Sandstone".

During his early years in Manchester in 1950s Morven was an officer of the MGA. His research continued an interest from his Glasgow days in glacial deposits. With R.G. West in 1958 he published the definitive paper on the stratigraphy and palaeobotany of the Late Pleistocene organic deposits at Chelford, Cheshire, namely the Chelford Sands. Later he published on the Pleistocene succession in the Stockport and south Manchester area (1959) and stone counts in these deposits (1960).

Morven was a gifted teacher, and one who became a role model to many who themselves went on to teach. To any student with a reasonable geological question, spontaneous or prepared, his default response was "Well now, what do you think?", getting the student to think, analyse, articulate and discuss. Throughout his career in Manchester Geology Department Morven taught stratigraphy in a traditional way, amplified by many field courses, particularly to the Isle of Arran. He also taught many extra-mural classes even after his retirement in 1983 and wrote a paperback book *Fieldwork in Geology (Introductory Geology)*, Allen & Unwin, Murby (1977).

His last appearance in public was at the Geological Society, at Burlington House, in 2013, when he handed back to the Society, for safe keeping, the Lyell Medal that his father had been awarded in 1954. He died on November 19, 2018, six years after losing his wife of 65 years, Janette. He is survived by his son, Graeme, also a geologist, daughter Jennifer, five grandchildren and six great grandchildren.

John Pollard (with acknowledgement and thanks to Professor Graeme Simpson).

The current version of *Building Stones of Central Manchester* is available at £6 per copy + £2.50 p&p, please email your requirements and details to lgga.info@gmail.com.

MGA / GeoLancashire joint field excursion.

Leader: Arthur Baldwin

31st March 2019 Thurns Head quarry, Whitworth (near Bacup*, Lancs).

Meet at 10.30am at 'Cowm Water Ski Centre' (at SD882188), off Tong Lane, Whitworth, OL12 8BE
(modest parking fee)

Thurns Head quarry is in Namurian sandstones with mudstones. Spectacular examples of the non-marine bivalve trace fossil, *Lockeia isp.*, are abundant. Escape shafts of this bivalve were not found on the recce, so the challenge for the day will be to find an example. An exposure in an old quarry face contains loading structures about a metre across where, at the time of deposition, incoming sand has deformed soft mud beneath.

There is plenty of evidence of the industrial history of the site. Part of the route is up an impressive inclined stone trackway with setts in the centre and metre long flat stones for tracks either side. The long stones have grooves worn into them from long use by quarrymen, perhaps using sleds to transport stone more than a hundred years ago.

The walking distance is about 3km over moorland paths. The stone trackway is potentially slippery in wet weather.

Healey Dell Nature Reserve, car park at SD879164 (leader Ron Powell).

The River Spodden flows through Healey Dell nature reserve, in part through a narrow gorge with waterfalls. Ferns and other damp and shade loving flora abound. There is abundant evidence of the early woollen industry, including a waterwheel pit for a fulling mill. There are also the remains of a paving slab 'stone rubbing mill', used to smooth ripple marked stone flags. An adit, likely the site of mediaeval siderite mining, can be seen in a mudrock cliff by the side of the river. The reasons for the formation of siderite will be discussed.

Two faults, one at either end of the reserve, bring the older Upper Namurian, Rough Rock, into juxtaposition with the younger Westphalian, Lower Coal Measures. The more southerly fault is visible in the gorge. In the river bed are nice examples of potholes, formed when water born small pebbles and sediment swirl to erode flask shaped holes in the bedrock. There is also a variety of sedimentary structures in the cliffs on the side of the gorge, where the Rough Rock is well exposed.

The walking distance is up to about 4km, mostly on excellent tracks and paths. In one location the riverside path is rather narrow and potentially slippery in the wet. For those who do not feel confident about it there is an alternative route. The main route continues along the side of a leat to a mill lodge. The café and associated small visitor centre are not far from the lodge. Return will be via the railway track over the gorge and thence to the carpark. For those who wish to visit the café later in the day, there is parking available, see second website.

<https://www.woodlandtrust.org.uk/visiting-woods/wood/10383/healey-dell-nature-reserve/>

<http://www.visitrochdale.com/rochdale-all/where-to-go/healey-dell-nature-reserve-and-tea-rooms-p85871>

Logistics

Bring a packed lunch. We will find a suitable place for lunch at Healey Dell. There are no toilet facilities at either Thurns Head quarry or Healey Dell nature reserve. For those who want a café and facilities, it should be possible to find some sort of hostelry on the short drive between the two locations or in nearby Bacup or in the outskirts of Rochdale. There are some cafes advertised on the internet.

Safety

A risk assessment will be available on the day. Apart from what has been mentioned above the hazards are only what one would expect on a country walk. Healey Dell is a lovely place for a stroll, regardless of the geology. It is popular with dog walkers. We have seen dog walkers at Thurns Head too but there are sheep, so dogs would have to be kept on leads. It is strongly recommended that walking boots are worn.

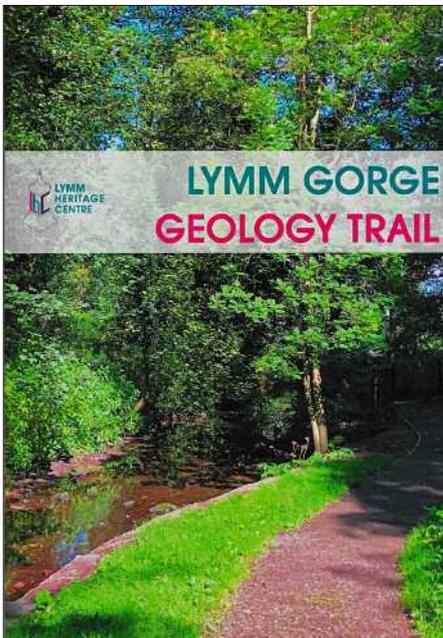
Peter del Strother

If you have questions, please email secretary@geolancashire.org.uk

* Bacup is close to Rochdale. The excursion sites are easily accessed from the M62 or from the M66 at Bury or Rawtenstall. Both locations, Healey Dell Nature Reserve and the Water Ski Academy (as its official title seems to be), are on Google Maps.

Lymm Gorge Geology Trail

Fred Owen



Lymm Heritage Centre has recently published the *Lymm Gorge Geology Trail*. It is an attractive, glossy, 20-page, A4 booklet written for the public with little or no knowledge of geology. The aim is to encourage people to enjoy a walk around the Lymm Dam and village taking in the geological features on the way. It takes in fourteen locations that are clearly shown on a double centre-page map, with directions to, and photographic descriptions of, each one. The trail also includes references to some historical features in the village. To complete the walk you will cover about 3 miles and take 2 to 3 hours. It is an ideal family excursion into the Cheshire countryside, which is adjacent to the pretty Lymm village.

A Heritage Centre volunteer sculptor has fashioned a superb life-size model of *Chirotherium* from 'junk in his garage'. He based the model on photos in Liverpool Museum. It is on display in the Heritage Centre and supported by a 'hunt the dinosaur' challenge for kids.

The booklet costs £3.00 and is available from the Lymm Heritage Centre. lymmheritagecentre@gmail.com or 01925 754080

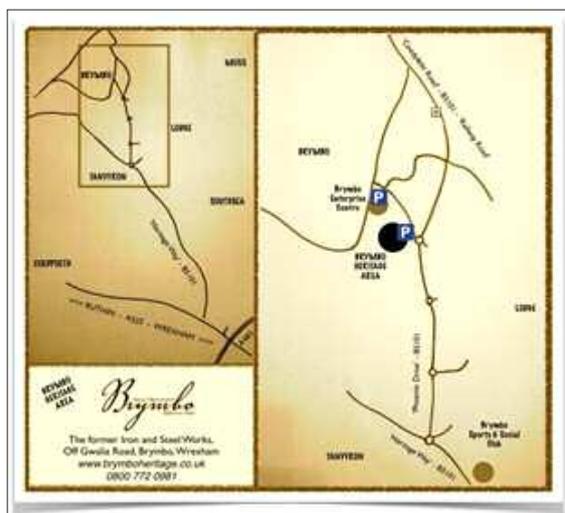


MGA - GeoLancashire field excursion to Brymbo 'fossil forest' and Llay coal mine tip

27th June

Brymbo

Leader: Tim Astrop PhD of Brymbo Heritage Project



For directions - see <http://www.brymboheritage.co.uk/find-us/>

At Brymbo are the in situ remains of a Pennsylvanian (Upper Carboniferous) 'forest', with both lycophyte and calamite stems in growth position. Stands of *Calamites* stems are said to be very rare, (Appleton et al. 2011. The Brymbo Fossil forest).

The base of the exposure contains plant stems up to about half a metre in diameter in mudstone. Stems over 1.5m diameter have been observed. Channels cutting through the mudstone can be observed in a vertical face. Above this is a horizon with siderite nodules and at the top a coal seam of Westphalian B age.

In September 2017 the Brymbo Heritage Project secured funding of £0.84M from the Heritage Lottery Fund and is working to secure more to make the site accessible and to cover the fossil plants which weather rapidly as soon as they are exposed.

The site is associated with a historic iron ore processing complex which includes blast furnaces. The large maintenance workshop building is currently being restored, with a grant of £1.1M from the BIG Lottery, to provide a visitor centre.

The excursion will include the industrial archaeology in addition to the geology.

Calamites stem in situ



Sandstone channels in the mudstone that contains the plant remains



Bring a packed lunch. It is planned to take lunch at the site as there are outdoor picnic tables.

Walking distance is short, about a kilometre if all the industrial archaeological sites are included. Conditions underfoot are fairly good, but boots are recommended.

Llay coal mine tip, about 6 miles north west of Wrexham. Meet at 2.00pm

Address: Hanson Cement, Former Llay Main Tip, Llay Road, Llay, near Wrexham, LL12 0TL

Leader: Jason Parry - Quarry Manager, Hanson Cement Padeswood.

The coal mine tip is being reworked by Hanson Cement as raw material for cement production. It is located quite close to Brymbo. Apart from coal we should be able to find cobbles of sandstone containing plant fossils.

You can read something about the mine at <http://www.welshcoalmines.co.uk/North/LlayMain.htm>

Walking conditions are fairly good. Walking distance is less than a kilometre. This is an operational quarry site, so wearing of boots, safety helmet and high visibility jacket or waistcoat is compulsory. If it is dry it may be dusty and wearing of eye protection will be required.

Peter del Strother

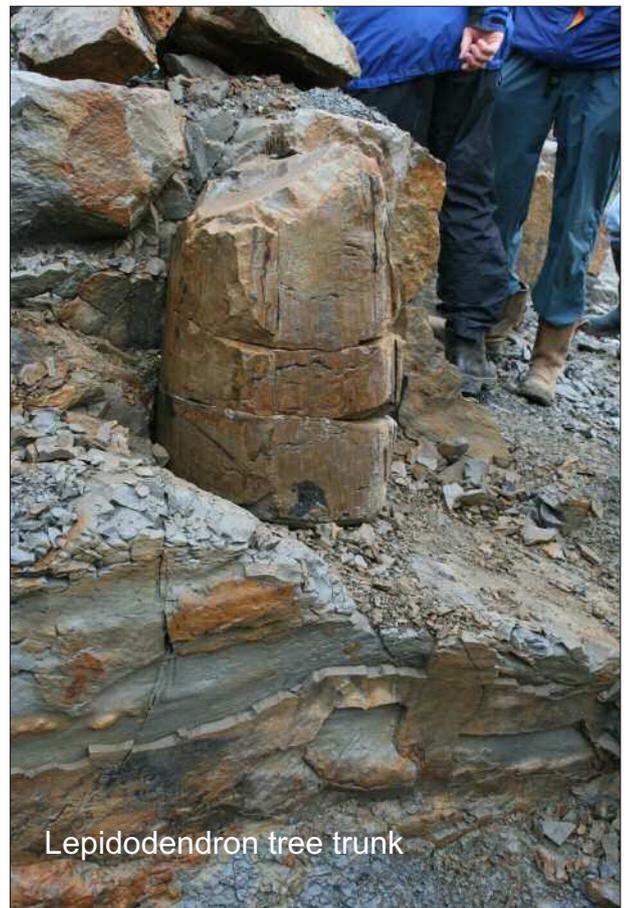
If you have questions, please email secretary@geolancashire.org.uk



Lepidodendron cone



Seed fern frond



Lepidodendron tree trunk

Sunday 22 September 2019

Fred Broadhurst Memorial Field Trip led by Jane Michael The Goyt Valley Round Marple: Industrial History Meets Geology

The Goyt Valley round Marple is not just geologically interesting (top of the Namurian/bottom of the Westphalian, an area of changing environments) but the industrial history is fascinating too. So if you would like to learn why, though he probably didn't realise it, Samuel Oldknow made a good choice for the site of Mellor Mill, then join me. The morning will be spent looking at how the geology influenced Mellor Mill's construction. This will be around 2 miles of flat walking on a stony track. In the afternoon, we will visit the canal, Marple Aqueduct and the Goyt valley around its confluence with the Etherow. This will be 3 miles with around 100 ft of moderately steep ascent on canal towpath and grassy/muddy river bank. For more indepth information, please contact me on gmicsh@gmail.com or 07917 434598.



OTHER SOCIETY EVENTS

NSGGA <http://www.esci.keele.ac.uk/nsgga/>

14th March 2019 AGM and @ 19:30 Chair's Address
The formation and evolution of mountains and basins: insights from the modelling of geological processes. Dr Stuart Egan (Keele University)

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

18 March Indoor Meeting, AGM + 'Rock along the Cut'
6 April Field Meeting, Quaternary of the Severn Valley in Shropshire
April Indoor Meeting, 'Europe's Lost World: The Rediscovery of Doggerland'
11 May Field Meeting, Martley Geo-Village

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

21 March Victoria Cave and the Forgotten Climate Controversy. Dr Phil Murphy
Earth and Environment. University of Leeds
09 May The Environmental Consequences of Volcanism. Dr Evgenia Ilyanskaya
Earth and Environment. Leeds University
22 May Wednesday. The Green Lecture: Getting Information from Noise
Joint Meeting with SEE Prof. Roel Snieder. Colorado School of Mines
10 Oct The Great Glen Fault Zone - Back and Forth for Longer Than We Thought
Dr Eddie Dempsey. University of Hull
07 Nov Does Size Really Matter? A Look at Aeolian Forms. Dr Oliver Wakefield BGS
05 Dec AGM and Conversazione – Short Talks and Displays by Members

OUGS <https://ougs.org/northwest/>

April 28 Leader: Dr Audrey Brown. Coniston; Broughton; Millom, Cumbria
Visit 3 geological gems of South Lakeland: Brown Howe Quarry, Coniston. Donkey Rocks (Eccle Riggs Bank Quarry) at Broughton in Furness. Millom Rock Park (Ghyll Scaur Quarry).

- May 19** Leader: Cathy Hollis. Geology of Llandudno.
- June 9th–15** Geology of Norway. Leader: Dr Simon J Cuthbert. Maloy, Norway.
- June 29** Exploration of Formby Point. Leader: Alison Burns and Jane Schollick. Coastal processes and prehistoric human footprints.
- July 6** Field trip to the Lake District Borrowdale Volcanic Group. Leader: Prof Chris Wilson. Examination of the Borrowdale Volcanic Group (BVG) and glacial features. Fell walk of 9km round trip to summit of Haystacks.
- August 17** Bolton Quarries. Leader: Alan Diggles and Chris Arkwright. Joint trip with MGA.
- September** Geology of Raasay and Skye. Leader: Dr Ian Williamson ****Waiting list only****
- Sept 7** Shap Quarries Leader: Dr Chris Arkwright. Cumbria. Visits to Shap Pink Granite Quarry (SXR260 fame), and also Shap Beck Limestone Quarry.
- October 27** Lancaster Building Stones. Leader: Vic Parsons.
- Dec 7** Afternoon of Lectures. Leader: Dr Chris Arkwright. Heald Green Village Hall. Heald Green, Stockport, Manchester

NWGA <http://www.ampyx.org.uk/cdgc/rhaglen.html>

- March 20** Speaker: Steve Coleman ex Robertson Research. Meeting Room, Pensychnant, Conwy. In 1969, four geologists from the University of Exeter joined an expedition to East Greenland to carry out detailed geological mapping of the East coast of Greenland over a 5 year period.

Geolancashire <http://geolancashire.org.uk/lectures-and-excursions/>

- 31 March** Healey Dell and Thurns Head. Leaders: Peter Del Strother and Brian Jeffrey. MGA / GeoLancashire joint field excursion.
- 9 April** Brinscall Quarry / Horwich Stone works. Due to a shortage of the original stone, this quarry is now providing stone for the building of the Sagrada Família Cathedral in Barcelona. Some of this stone is being carved at the Horwich works before shipping. Visit details to follow.
- 2 May** Ecton Copper Mines. These mines in the Manifold Valley have been worked from Bronze Age times and are estimated to have produced 100,000 tonnes of ore. We will be hosted by geologists from Ecton Hill Field Studies Association.
- 27 June** Brymbo/Llay (MGA trip). Leader: Tim Astrop PhD of Brymbo Heritage Project. At Brymbo are the in situ remains of a Pennsylvanian (Upper Carboniferous) 'forest', with both lycophyte and calamite stems in growth position. Stands of Calamites stems are said to be very rare.
- 11 July** Bashall Eaves Permo Triassic outlier. Leader: Alan Harrison. This will be an evening trip starting from Bashall Eaves.....Limited local parking.
- 22 July** Preesall Salt fields. Leaders: G. Williamson and Barbara Gordon. A short, easy and pleasant walk to look at the brine extraction fields of the area known locally as "Over Wyre", taking in the interesting industrial archaeology and the effect that several collapse structures has had on the area.

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MGA Outdoor Meetings 2019

Sunday 31 March 2019

Thurns Head and Healey Dell

Leaders: Arthur Baldwin and Ron Powell

Notes See page 4

Contact: GeoLancashire Secretary: secretary@geolancashire.org.uk

Thursday 2 May 2019

Ecton Copper Mines

Led by Geologist from the Ecton Hill Field Studies Centre

Notes: Joint with GeoLancashire

Ecton Hill

Contact: GeoLancashire Secretary: secretary@geolancashire.org.uk

Thursday 27 June 2019

Brymbo Fossil Forest and Llay coal mine tip, about 6 miles north west of Wrexham.

Leaders: Tim Astrop PhD of Brymbo Heritage Project and Jason Parry - Quarry Manager

Notes: see page 6

Contact: Lyn Relph: newsletter@mangeolassoc.org.uk

Saturday 17 August 2019

Location: **Bolton Quarries**

Leaders: Alan Diggles and Chris Arkwright

Notes: Joint with OUGS

Contact: John Gooch, jk.gooch@sky.com

Sunday 22 September 2019

Broadhurst Memorial Field Trip – The Goyt Valley Round Marple: Industrial History Meets Geology

Leader: Jane Michael

Notes: Samuel Oldknow (see page 8)

Contact: Jane Michael, gmisch@gmail.com or 07917 434598.