



# Manchester Geological Association

President: Prof. Cathy Hollis

December 2019

[www.mangeolassoc.org.uk](http://www.mangeolassoc.org.uk)

Founded 1925



*On behalf of the MGA Council may I wish you  
all a very merry Christmas and  
a happy New Year*

## Quick Diary

### Indoor Meetings 2019/20

Saturday 18 January 2020:	Vertebrates: Cambrian to Mesozoic
Wednesday 12 February 2020:	Annual General Meeting and Presidential Address
Tuesday 3 March 2020:	Joint Meeting with Manchester Geographical Association (start 6.30pm)

# Who's Who in the MGA

## Officers

**President: Prof. Cathy Hollis**

Vice-President: Niall Clarke MSc

General Secretary: Sue Plumb BSc

Membership Secretary: Niall Clarke MSc

Treasurer: Jennifer Rhodes BA

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 (Hons)

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](mailto:president@mangeolassoc.org.uk)

To contact our Vice-President: [vicepresident@mangeolassoc.org.uk](mailto:vicepresident@mangeolassoc.org.uk)

To contact our General Secretary: [secretary@mangeolassoc.org.uk](mailto:secretary@mangeolassoc.org.uk)

For membership enquiries: [membership@mangeolassoc.org.uk](mailto:membership@mangeolassoc.org.uk)

For field visit enquiries: [outdoors@mangeolassoc.org.uk](mailto:outdoors@mangeolassoc.org.uk)

For indoor meeting enquiries: [lectures@mangeolassoc.org.uk](mailto:lectures@mangeolassoc.org.uk)

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

For other enquiries: [info@mangeolassoc.org.uk](mailto:info@mangeolassoc.org.uk)

## MGA Council Vacancies

**Currently the MGA has a vacancy on the Council for someone to co-ordinate field trips.** This does not involve leading or attending field trips unless desired. It entails being the point of contact for people who wish to attend the field trip, emailing out information obtained from the field trip leader, liaising with the leader as required regarding health and safety information for their trip and advising the Newsletter Editor and Webmaster for inclusion in the Newsletter/on the web. The Field Trip Secretary might like to suggest field trips, but more likely they will find that other people suggest these including the leaders and also may offer to arrange them. At present several suggestions have been made for field trips for 2020. The MGA also has field trips which are jointly organised with other societies.

As from the AGM in February 2020, there will also be **a vacancy for an Indoor Meetings Organiser (IMO).** This entails making arrangements for some Wednesday evening and three Saturday afternoon lectures.

The planning for Autumn/Winter 2019/2020 has been completed. Topics for the lectures are sometimes suggested by Members/Council and help is available for finding lecturers. The AGM lecture is given by the President and the Joint Meeting with the Manchester Geographical Association is arranged by that organisation so **there are only four other lecture dates to fill.** Once the programme is complete, and the Lecture Season is about to start, the IMO liaises with the speakers to check their travel arrangements and obtain short abstracts for circulation the week before the lectures to Members (the Membership Secretary does the circulating). On the day, the IMO gives the President brief biographical details of the speakers and meets the speakers when they arrive. This position gives an opportunity to hear lecturers YOU might want to hear on topics YOU might want to learn more about whilst ensuring the MGA has an interesting and varied Indoor Meeting programme. Council members are always on hand for help and advice.

If you would like to know more, or feel that you would like to take on either of these roles, please contact the General Secretary, Sue Plumb, [secretary@mangeolassog.org.uk](mailto:secretary@mangeolassog.org.uk)

## Membership subscription renewals

Membership fees are now due. If you pay by cheque or cash please send the appropriate subscription to Niall Clarke, 64 Yorkdale Oldham, OL4 3AR

Obviously if you pay by SO your subs will be collected automatically, however **could all Members please confirm their contact details, including email addresses to Niall at [niallclarke01@gmail.com](mailto:niallclarke01@gmail.com).** If you would like to switch to paying by SO, please contact Niall.

### Current membership fees are:

Full member, correspondence by email £16.00

Full member, correspondence by post £18.00

Full member and an associate member, correspondence by email £18.00

Full member and an associate member, correspondence by post £20.00

An associate member is an adult residing at the same address as a full member.

# Report of the Williamson Tunnels Liverpool Tour

## Part of GA GeoConference

### 20 October 2019

By Jane Michael (Manchester Geological Association)

Eleven delegates from the GA GeoConference, that was held in Manchester, were joined by two Liverpool Geological Society (LGS) members to undertake a tour of the Williamson Tunnels in Liverpool. This tour was run by the Friends of Williamson's Tunnels (not to be confused with the Williamson Tunnels Heritage Centre which is based the other side of the railway!). After a safety briefing, donning hard hats and High viz jackets, we were split into two groups as the site comprises two areas; Paddington (not to be confused with the bear or railway station of the same name!) and Williamson's house area on Mason Street.

I was with the first group that walked up Mason Street to find the entrance, which is within the curtilage of Liberty Living student accommodation. A small area has been fenced off which contains the 'doorway' to the underworld. Before descending we were given a brief history of the tunnels and Joseph Williamson. He was born in 1769 in Warrington later moving to Liverpool to work for a relative, Richard Tate, a tobacco merchant. By working hard he rose up in the company before opening his own business importing and exporting to the Baltic alongside the tobacco business; he eventually took over Tates. In the process he became extremely wealthy. He married Elizabeth Tate, 'the boss's daughter'.

He decided to build a house and took on some leased land on Mason Street leading to Paddington, then a small hamlet. The stone used (the house also used brick in its construction) came from 'the tunnels'. These 'tunnels' are not strictly tunnels but slot quarries in Edge Hill, which were being dug for stone to supply the needs of the expanding city. In addition to continuing the quarrying, Williamson also saw an opportunity to reclaim this land by building arches over the slots (at various levels), finally building valuable merchant properties on the top. Our leader, Tom, did explain that quite a lot of the information about Williamson could be regarded as 'flaky' as there are few records. A lot of 'interpretation' has therefore taken place to build the story of the tunnels.

The rock locally is the Triassic Sherwood Sandstone, which, as we had learnt the previous day from the LGS poster, is a good aquifer for water and gas. There is no longer any quarrying locally. The rock is coarse-grained, has good porosity and contains some finer-grained beds. The environment of deposition was a desert with ephemeral rivers. The source of the material was from the south and deposition appears to have taken place in a fast flowing river environment where large sequences were laid down at any one time ie flood deposits.

We then moved down a set of steps to the first level of the tunnel. These had been 'lost' for at least 60 years, being covered by tenement buildings. In 1999 the first exploration of the cellar system (the tunnels here had been turned into cellars for a bakery) took place. It took until June 2012 before the Friends obtained a lease for the area and could set up a proper entrance. On the 18<sup>th</sup> November 2012 they commenced emptying the tunnels of the rubble from the house demolitions. This work is still ongoing and has resulted in many artefacts such as beer bottles, children's toys, cups and saucers etc have been found and put on display. (Fig 1).



Fig 1 Artefacts found during tunnel clearance.

LGS President Phil Firth advised us that we would also see wet patches on the quarry walls below what appear to be fine clay layers, possibly laid down as the floods receded and the river dried up. The wet layers could however also relate to water table height. Sure enough we did find wet areas on the quarry walls and this resulted in deep discussion about the source – clay or water table.

It was fascinating to see the tunnels and how they had been arched with brick (Fig 2). The walls showed diagonal 'stripes' which we considered were pick marks (Fig 3); the tunnels were dug by hand (as a form of poor relief – Joseph Williamson, who developed into philanthropist, paid his men a proper wage rather than just food and board as in other poor relief projects).



Fig 2 Brick arches had been used to bridge the slot quarries.



Fig 3 Pick marks on the quarry walls.



Fig 4 Scaffolding stairways to reach the base of the quarries.

After passing down many scaffolding steps (Fig 4), we finally arrived at the lowest level, which looked very much like what we thought a river bed minus water would look like. (Fig 5) This was on a slope (though we did not measure the 'dip') and seemed to be made up of various layers. It occurred to us that perhaps the rock had not been quarried further because there is too much variability in the rock.



Fig 5 The quarry floor.

The Sherwood Sandstone being fairly homogeneous does carve well into blocks; the rock we were standing on didn't look like that. The other alternative was that, on Joseph Williamson's death in 1840, with no heirs, the quarry just shut down and the workers walked away.

We noticed that there was a lot of brick used in the arches/roofing for the tunnels. Our guide, Tom, mentioned that it was possible that Williamson had bartered stone for bricks rather than buy bricks. The floor flags may have come from thinner beds rather than the massive beds we saw during our trip.

The second part of the tour was underneath the remains of Williamson's house although this was only a flying visit as our time was nearly up. This had been a three storey property looking out over the city. Whilst there is little remaining except a sunken area which contained the kitchen with a bay window (it had been four storey's, the kitchen being in a basement). Williamson had arranged for the land in front of the house overlooking the city to be built up for a garden. We descended another couple of levels including going down a very narrow (shoulder width) slot, which was quite puzzling (Fig 6). On our way back up we came across a thicker clay layer some of which had been gouged out – an example of a quieter time of deposition perhaps. (Fig 7).



Fig 6 A very narrow 'slot' down to a wider quarry area.



Fig 7 Clay layer which had been gouged out at.

So thanks to Phil Firth, President Liverpool Geological Society, for arranging this fascinating trip and also to the various guides from the Friends of Williamson's Tunnels. If ever you are in Liverpool, this site has my very strong recommendation for a visit.

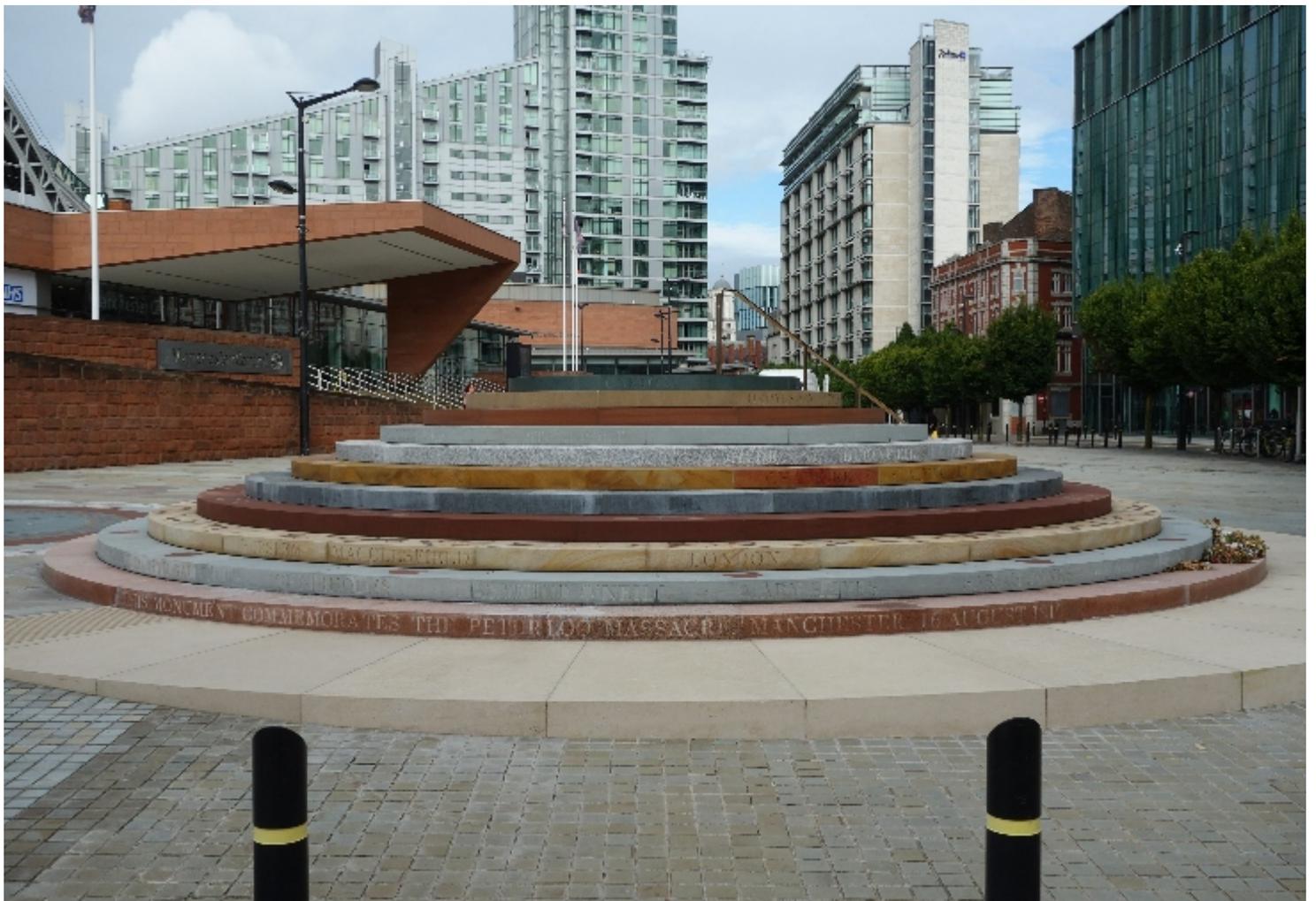
## Peterloo Monument - Manchester City Centre

by Jennifer Rhodes

Turner Prize-winning artist Jeremy Deller was commissioned by Manchester City Council to create a memorial in recognition of the 200th anniversary of the Peterloo Massacre. This took place on 16th August 1819 at St Peter's Field when a crowd of protestors many thousands strong calling for parliamentary reform were charged by cavalry. The confrontation resulted in the deaths of 18 people and hundreds more were injured. A detailed account of the fateful day can be found here -

<http://www.peterloomassacre.org/history.html>

The memorial is located behind the Midland Hotel and close to the Manchester Central Convention Complex.



## Stonework Details

The memorial comprises two interlocking circles, one of flat elevation and the other made up of concentric raised circles both with detailed inlays and carvings. The construction uses various materials from around Great Britain including examples of sandstone, limestone, granite, dolerite and slate. The table below provides details.



### Project details

Architect: Caruso St John

Artist: Jeremy Deller

Client: Manchester City Council

Structural engineer: DJ Lingard and Associates

Planning consultant: Maybern Planning and Development

Main contractor: Conlon Construction

Stonework contractor: Mather and Ellis

Acknowledgements

The information on stonework has been provided by Mather & Ellis (Stonemasons) with the kind

permission of Manchester City Council and Conlon Construction.

### Rock type and source key; A is the centre with M the outer ring.

Ref Material

Source

**A** Burlington Slate Kirkby-in-Furness, Cumbria

**B** Peakmoor Sandstone Stanton-in-Peak, near Matlock, Derbyshire

**C** Cove Red Sandstone Kirk Patrick Fleming, Scotland

**D** Whitworth Blue Sandstone Whitworth, Yorkshire

**E** Delank White Granite St Brewton, Cornwall

**F** Copp-Crag Sandstone Byrness, Northumberland

**G** Scottish Dolerite Dunaverig, Sterling

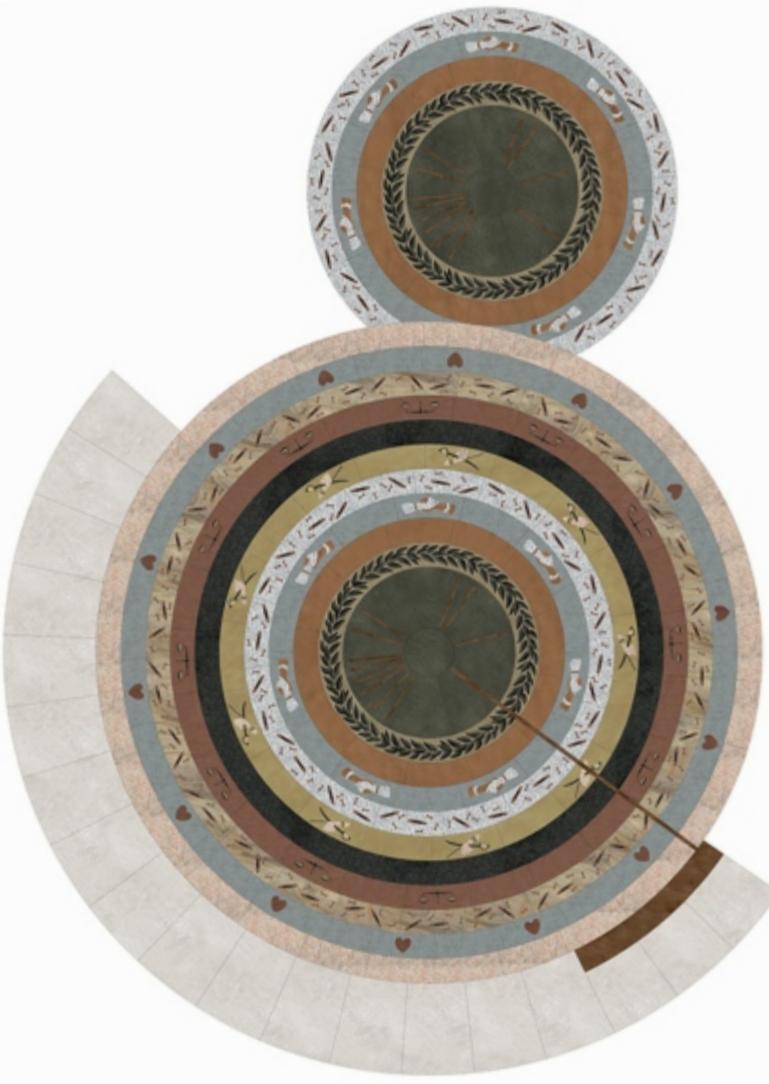
**H** St Bees Sandstone Salton Bay, St Bees Head, Cumbria

**J** Fletcher Bank Sandstone Southowram, Halifax, West Yorkshire

**K** Whitworth Blue Sandstone Whitworth, Yorkshire

**L** Corrennie Pink Granite Tillyfourie, Aberdeenshire

**M** Portland Stone Isle of Portland, Dorset



# Geologists' Association Conference Manchester 18<sup>th</sup> – 20<sup>th</sup> October 2019

The organising committee of the 2019 GA conference: Nick Pierpoint (GA President), Philip Firth (Liverpool), Lyn Relph (North Wales), Cathy Hollis (MGA President), Peter Jones (Staffordshire), Jane Michael (MGA), Jennifer Rhodes (Lancashire)



The Annual Geologists' Association conference was held in Manchester. The weekend began with a tour of the Manchester Museum on Friday afternoon, with Prof Phil Manning, before a group of GA members met for a social event at the Abel Heywood pub in the Northern Quarter. The main event was held on Saturday 19<sup>th</sup> October in the Great Hall in the Sackville Street Building. In the hall were posters and exhibitions by all the regional GA groups, the Geologists' Association and the British Geological Survey, amongst others.

A series of talks were held throughout the day, focusing on the importance of the geology of the NW in the past, present and future. After a short welcome by the President of the GA, Nick Pierpoint, and the Chair of the Organising Committee, Cathy Hollis (MGA), Dr Oliver Wakefield introduced the audience to the Geology of the north west. Dr Tim Astrop then provided an excellent summary of the palaeontology, excavation and preservation of the Brymbo Fossil Forest and its importance to rejuvenating an area that has been in decline since the close of the steel works that used the coal, which hosts the fossil forest. Prof Mike Bowman then described the importance of the geology of the NW to oil and gas development in the Irish Sea Basin. The final presentations of the morning focused on minerals with Roy Starkey showing beautiful photographs of a wide range of well known and less common minerals from the Peak District and Andrew Fielding describing the history of exploitation of salt resources in Cheshire.

Lunch was held in the Great Hall. The afternoon focused on how the geology of the NW now influences resource development in the region. Robert Hunt showed the results of a ground investigation for Wylfa Newydd Nuclear Power Station, and how bedrock geology and faults were mapped and modelled. Cat Hirst gave an excellent summary of the prospects for geothermal energy production from the Triassic sandstones of the Cheshire Basin; the same succession that is the main reservoir for oil and gas offshore. Vanessa Banks described the hydrogeology of the NW and finally Cynthia Burek and Ian Drew gave an overview of their Saltscape Geoconservation Project.

In the evening, around 50 participants gathered at the Manchester Museum for dinner in the fossil gallery. On Sunday, field trips were run to the Williamson Tunnels in Liverpool, Apedale Heritage Site in Staffordshire and the Clitheroe Cement Works. There was also a Building Stones tour of Manchester.

The entire event was incredibly well attended with over 100 registrants and feedback on the weekend has been excellent. Many of the attendees came from the NW region, but an almost equal number had travelled up from London and the south east. The organising committee would like to thank all the GA groups, speakers, poster presenters, exhibitors, field trip leaders, sponsors and student helpers for making the event such a success.

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Bubbling mud pools in the Volcan Rincon de Viaje National Park. Jane Michael.

# Obituary

## Iain Ashworth Williamson

November 14th 1931; d. November 2nd 2019

Iain Ashworth Williamson passed away peacefully on Saturday November 2nd after a short illness. He remained very active until recent months and often enjoyed his walks around Ambleside and then Kendal, where he was resident in his final months.

Iain attended Burnley Grammar School from 1942 – 1950 and Nottingham University from 1955 – 1958, graduating with a B.Sc in Geology and in 1960 with an M.Sc.

From an early age, Iain always had a passion for Field Geology and enjoyed all aspects of mountaineering, maps, history and spent many happy hours immersed in books. He travelled to many parts of the globe, as part of his work and research – including some very remote parts of the South Americas. Iain was a very accomplished golfer and declined the chance to turn professional in favour of his studies.

Iain was devoted to Pat (nee Holt), his wife of 60 years and was the proud father of Roger and Katie and grandfather to Ross, Bill, Ambrose & Digby. His son Roger followed in his footsteps as a geologist, until his death in 2010.

He was elected as a Fellow of The Geological Society in 1953, and then a Senior Fellow.

He was also a Member of:

The Manchester Geological Association from 1951;

The Lancashire Group of the Geologists' Association from 1950;

The Yorkshire Geological Society from 1950;

The Institution of Mining Engineers from 1965;

He was widely published and wrote several papers over the last 50 years including several, often referenced, early papers on Tonsteins - and was the author of 'Coal Mining Geology', published in 1967.

He was a Senior Lecturer at The Wigan Mining College from 1958 – 1980 and was a very successful and highly sought-after Geological Consultant since the early 1970's.

In his own words: 'My most fundamental belief is in there being a God to whom all natural things belong. Please do not grieve - and remember me when the wind blows in your face and when you are walking in a blizzard, enjoying the sensation of nature. I'm now on my next and probably my greatest adventure.'

# OTHER SOCIETY EVENTS

## BCGS <https://bcgs.info/pub>

- 18 January 2020** (*Geoconservation Day*): Wren's Nest.
- 20 January** (*Indoor Meeting*): 'Jurassic Brain Teasers'. Speaker: Stephan Lautenschlager (Lecturer in Palaeobiology, University of Birmingham).
- 8 February** (*Geoconservation Day*): Saltwells Local Nature Reserve.
- 17 February** (*Indoor Meeting*): 'The Impacts of Future Climate Change on Industrial Landscapes: recent work in The Derwent Valley Mills WHS and its relevance to the Black Country'. Speaker: Dr Andy J. Howard ('Landscape Research & Management', and Honorary Fellow, Dept. of Archaeology, University of Durham).
- 7 March** (*Geoconservation Day*): Barrow Hill.
- 16 March** (*Indoor Meeting, 7.00 for 7.30 start*): AGM followed by two talks by young geologists, Daniel Cashmore (University of Birmingham) and Matt Sutton (Oxford University) TBC.
- 20 April** (*Indoor Meeting*): 'Silurian Rocks of the Dingle Peninsula'. Speaker: Ken Higgs, Emeritus Professor of Geology, University College Cork.

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

- 30 JAN 20.** A New Glacial Chronology for East Yorkshire? Recent Work on Flamborough Head and in Holderness. Speaker: Dr Rodger Connell. University of Hull

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

- Jan 10th** Details to be announced
- Feb 7th** AGM + Peter del Strother – Cyprus
- Mar 6th** Lesley Collins
- Apr 3rd** Harry Pinkerton

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

- February 1st 2020** (Saturday) AGM Location: Gathurst Golf Club, Miles Lane, Shevington, Wigan
- May 6th–10th, 2020** Exploration of The Jurassic Coast, Dorset. Leader: Alan Holiday and Jeremy Cranmer
- October 2020** Geology of SW Portugal. Leader: John Rodgers (Cumberland Geol Soc)

# Manchester Geological Association

## Indoor Meetings 2019/20

**Saturday 18 January 2020:**

**Vertebrates: Cambrian to Mesozoic**

Speakers: Dr Duncan Murdock, Oxford University Museum of Natural History  
Elsa Panciroli, University of Oxford  
Dr Martin Brazeau, Imperial College, London

**Wednesday 12 February 2020:**

**Annual General Meeting and Presidential Address**

**Tuesday 3 March 2020:**

**Joint Meeting with Manchester Geographical Association** (start 6.30pm)

The 2018 Sulawesi Earthquake and the Hazard Management in Indonesia

Speaker: Professor David Petley, Sheffield University

Venue: Manchester Metropolitan University, Brooks Building. Exact locations within the campus will be communicated to members nearer the time.

### Bring Your Own Reusable Mugs

Would Members please bring a cup to use for tea/coffee when attending lectures, where refreshments are provided. It would be much appreciated. The MGA will be using biodegradable cups when our supply of polystyrene ones runs out, but these do cost more.

### Two interesting web-sites from Paul Gian

My gemology resource: <https://beyond4cs.com/free-gemology-courses-and-resources/>

I recently published an animated infographic on how diamonds are made and formed that I think might be of interest to your members and a good share in the newsletter!

Do check it out here: <https://beyond4cs.com/how-are-diamonds-made-and-formed/>

### Books and GA Guides

The following books/guides available for sale/donation for MGA funds. These will be brought to the January lectures for the last time.

#### GA Guides:

No 5 Silurian Inliers of SE Welsh Borderland £1.00

No 6 Geology Round the University Towns Liverpool £1.00

No 15 The Durham Area £0.50

No 39 Lleyn Peninsula £1.50

No 41 Jersey £0.50

No 2 The Lake District (1990) £4.00

No 48 Ercall Quarries Wrekin Area Shropshire £2.00

No 54 The Aberystwth District £4.50

#### Books available for a donation

Migmatites MacKenzie and Adams

GA Guide No 38 Plymouth Hobson

Minerals and Rocks of Jamaica Porter, Jackson and Robinson