

Manchester Geological Association

President: Dr Cathy Hollis

June 2018

www.mangeolassoc.org.uk

Founded 1925

INFORMATION

Many thanks to those members who have already returned their GDPR forms. If you have not yet done so, please could you complete and return the Confirmation of Details form which you will find at the end of this Newsletter. A link to this form is available on the MGA website and a copy is on the last page of this Newsletter. Forms may be returned by post to the address on the form, or by email. There is no requirement for an actual signature.

Quick Diary

Tuesday 24 July: Crummockdale led by Peter del Strother. This is a Joint event with Lancs GA.

Sunday 19 August: Crompton Moor, Besom Hill and Oldham Building Stones led by Stephen Darlington.

Saturday 29 September: Fred Broadhurst Memorial Field Trip: Deep Dale and Magpie Mine led by Jane Michael.

Wednesday 17 October. 7.00pm: Holiday Geology: members talks.

Saturday 10 November. Broadhurst Memorial Lectures 1.30pm: Earth's Distant Past

Thursday 22 November 6.30pm: Joint Lecture with Manchester Geographical Association

Saturday 8 December 1.30pm: Some Aspects of the Quaternary

2019

Thursday 17 January 6.30pm: Joint Meeting with Geological Society Northwest Region

Wednesday 6 February 7.00pm: Annual General Meeting: Presidential Lecture by Cathy Hollis

Who's Who in the MGA Officers

President: Dr Cathy Hollis PhD

Vice-President: Niall Clarke MSc

General Secretary: Sue Plumb BSc

Membership Secretary: Jennifer Rhodes

Treasurer: Jennifer Rhodes

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

Professor Ray Burgess PhD

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: Chris Arkwright PhD

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

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

MGA field excursion – Trowbarrow Quarry, Silverdale and Keer, near Carnforth

by Peter del Strother and Barbara Gordon

On May 8th 2018, there was a joint excursion with Geolancashire to Trowbarrow Quarry, near Silverdale and to Keer, near Carnforth.

Trowbarrow Quarry, near Silverdale SD 481 759



Trowbarrow is a limestone quarry in the Arnside Silverdale AONB, which operated from the 1850's to 1959. The rocks are Lower Carboniferous, laid down on the southern shelf of the South Lake District High, part of the same group as those on the Furness coast in Cumbria. The main rock within the quarry is the Urswick limestone, a pale grey rock, which forms massive thick beds that can form prominent scars and pavements. These quarry walls are very popular with climbers.

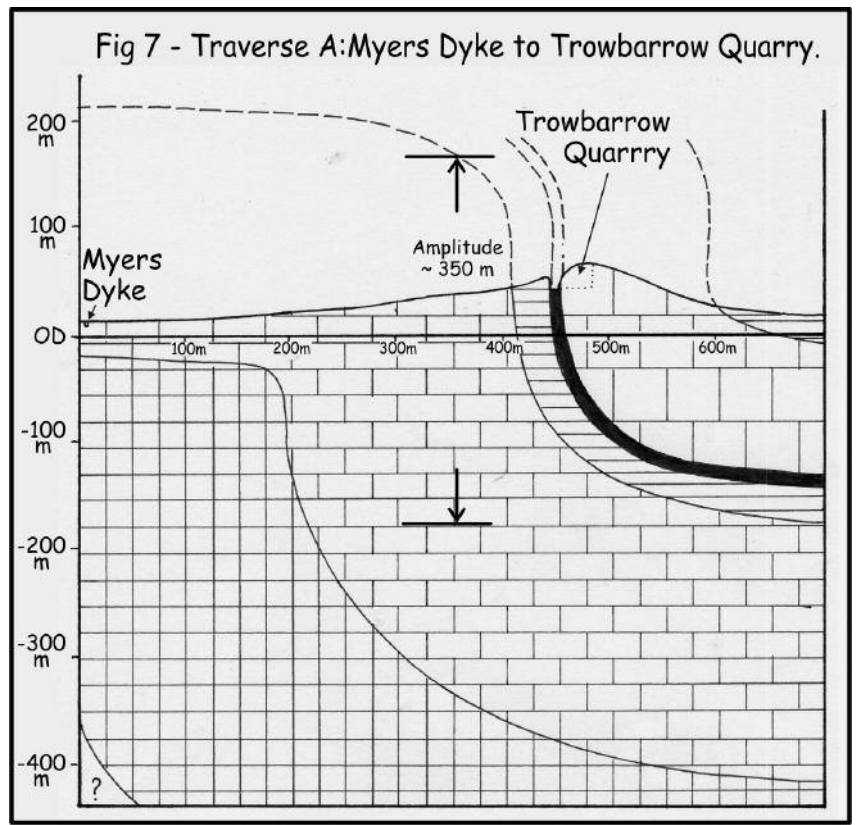
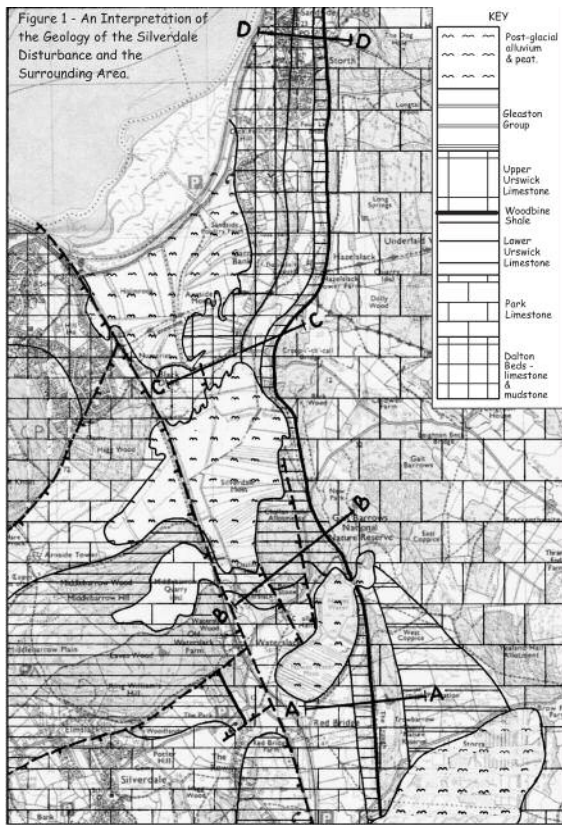
These walls are actually vertical bedding planes; a result of a monoclinial fold (the Silverdale Disturbance), which runs from just north of Leighton Moss to Storth, near Arnside on the Kent estuary.

View of "Main Wall" at Trowbarrow quarry



The "Assagai wall" and fluting at top due to solution effects from surface water.





Map of the Silverdale disturbance left and section of Trowbarrow Quarry (A-A) Courtesy of Geoff Brambles and Melville Thompson, Westmorland Geological Society.

A number of the beds are full of fossils, in particular large colonial corals and trace fossils in the form of “stick beds”.



Some of these trace fossils are remarkably large.



At the North end of the quarry three distinct bedding planes are visible with thin red clay fillings. These are paleokarst surfaces, believed to be associated with falling sea levels due to glaciation events that occurred during the period that the beds were being laid down.

A further paleokarst surface is visible on the western wall of the quarry, colloquially known by the climbers as the “Red Wall”. This surface is covered in a number of large circular depressions. It is speculated that these are the location of tree roots, which produced carbon dioxide, producing excess local erosion.



Paleokarst Surface



One rock which is not visible within the quarry is the Woodbine Shale, which lies between the Upper and Lower Urswick beds (see map/ section). However, this was visible as we subsequently walked from the quarry down the footpath to Leighton Moss RSPB for lunch.

Here the vertical beds of the soft Woodbine Shale have been eroded out to form what is locally known as “The Trough”, Trowbarrow originally being known as Troughbarrow. This Trough can be traced the length of the Silverdale Disturbance, and is seen again at Throughs Lane, Storth, at the northern end of the disturbance. Beyond this the beds can be tracked back to the horizontal.

“The Red Wall”



The Trough



Troughs Lane

So, down to the RSPB at Leighton Moss, where we had an enjoyable lunch before heading towards Carnforth.

Many thanks to Peter Standing and the other members of the Westmorland Geological Society (as referenced) who have produced all the information on the quarry and surrounding area. Peter Standing has produced a number of Geotrails for the area which are available from P STANDING peterstanding@btinternet.com

References Patrick, C. (2010) 'the Silverdale Disturbance' WGS proceedings (38) 18-22.

Keer, near Carnforth

An embankment of 'igneous rock' extends for about a kilometre along the north bank of the River Keer from NGR SD487713 to SD478705. Although the material was once molten it isn't igneous in the geological sense. It is slag from the works of the Carnforth Haematite Iron Co. Ltd., which operated from 1864 to 1930. This was no small operation. In 1871 they erected six Bessemer converters and by 1873 had installed plate and rail mills.

I am indebted to Duncan Woodcock for drawing attention to this locality, see bibliography, and to Brian Jeffery for research into the history of local and regional ironworking.

The picture illustrates one method of slag tipping used at Keer. Slag was also allowed to cool in hexagonal crucibles and the resulting solid blocks tipped in a similar manner.



Picture of slag tipping in China, courtesy of David Longman http://www.david-longman.com/China_Anshan.html

For those interested in steam locomotives David Longman's website includes many great pictures.

Over many years the huge pile of slag has largely been quarried away, in 1958 some was used for the foundations of the M6. What remains is a 4 metre high cliff facing south across the river and largely unvegetated.

The reason for visiting was that the tipped slag possesses many characteristics of relatively recent volcanic activity - and the nearest place to see such characteristics is rather more than a one-day MGA field excursion away!

If you make this excursion yourself, be aware that the base of the exposure is on the River Keer flood plain. I do not know how often the river floods but it would be prudent to avoid times of high tides. The first igneous characteristics seen were chilled margins and vesicles.



Field of view approximately 1.5m



Lens cap 50mm



Field of view approximately 100mm



Field of view approximately 100mm

In places the slag had partly solidified prior to tipping but was still sufficiently plastic for the fragments to weld together, see below, in the form of an anticline.



No trip to a lava field would be complete without seeing pahoehoe.



Peter del Strother

The chaotic nature of the exposure is illustrated below with Brian Jeffery relishing the sunshine on the day when he, Barbara Gordon and I did the recce. Disappointingly, on the afternoon of the MGA visit, it drizzled. Nevertheless the hardy souls present had an enjoyable day.

Bibliography

Duncan Woodcock. Anthropocene volcano-analogue deposits near Carnforth, Lancashire: an introduction and field guide. OUGS Journal 35 (1–2) 2014; published 2015.

Phillip Grosse. The Railways of Carnforth - the town and its ironworks. ISBN 978-0 9569709-0-9

OTHER SOCIETY EVENTS

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

7th July, Saturday. Field trip: Wren's Nest led by Graham Worton (BCGS)

15 September Saturday. Field Trip: Churnet Valley (with EMGS) led by Dr Ian Stimpson

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

21 July, Field meeting, Severn Valley Country Park, Geology and Mining Heritage

18 August, Field meeting, Visit to Wren's Nest and the newly opened Dudley Museum and Art Gallery

1 September, Field Meeting, Visit to Titterstone Clee Hill

17 September, Indoor Meeting, Details TBC

6 October, **Geoconservation Day, Portway Hill, Blue Rock Quarries**

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

28th July Saturday. Field meeting. The Loxley Edge Rock and Wharnccliffe Edge Rock Formations on the Banks of the River Don. Dr Gareth Martin LGA & WYGT

11th October Thursday. 7:15PM - Rupert Beckett Lecture Theatre (Michael Sadler Building)
Waking the Giant: How a Changing Climate Triggers Earthquakes, Tsunamis and Volcanoes
Prof Bill McGuire, University College London

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

July 21st Saturday. Field trip; Garburn Pass Geology Trail, Troutbeck, Ambleside, Cumbria. Leader: Jane Schollick

September 7th–11th. The north Antrim Coast including the Giant's Causeway. Leader: Phyllis Turkington

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

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

24th July. Field trip. Crummackdale. Leaders: Barbara Gordon & Peter del Strother

2nd August. Troutbeck. Leader: Lesley Collins

Letter by Grahame Miller (July 1973)

by Derek Brumhead

An article (July 1973) has come into my possession for the MGA archives by Grahame Miller on 'Practical Difficulties in Studying Geology at Home' together with a letter of comment from Fred Broadhurst in which he says 'The subject matter is very much one that is in my mind and I see my own future as moving away from 'pure' academic research towards a liaison job placing geology at everybody's front door'

'In fact the sooner our student population ranges from 18-80 yr olds the better... Morven Simpson and I have just completed 6 programmes for Radio Manchester's 'Prospect Manchester' which will go on the air next autumn. We are also completing a guide on building stones which have been used in the city centre (Manchester) and which the Town Hall promise to publish and issue free of charge to all schools and interrelated parties – provided we satisfy their requirements !'

How right he was !

[Did the Town Hall do this ? I don't know. There is no mention about it in the original 1975 Guide].

Force Crag Mine

From Niall Clarke

While we can still email all of you and not just those who have returned their consent form (!), I'd like to pass on a communication from the National Trust, who say...

Thanks to the work of an amazing group of volunteers, Force Crag Mine has undergone a two year project to conserve and protect its nationally important collection of mining machinery. The project was led by Tim Martin of Context Engineering, one of the UK's leading machinery conservation consultants, so don't miss the opportunity to see what they got up to.

This year's open day dates are:

- Saturday 5 May
- Friday 1 June
- Wednesday 8 August
- Saturday 8 September
- Saturday 15 September

Located near Keswick, in the Lake District, Force Crag Mine has it all, history, engineering, geology, geography, archaeology you name it. The last mineral mine worked in the Lake District it was once a hive of industry, mining lead, zinc and barites for over 200 years. Production ceased in 1990 yet you could almost believe the miners had just left for the day as the complete processing plant still exists.

Nestled in the stunning Coledale Valley it's a hidden gem in the Lakeland landscape that gets missed by many so don't be afraid to bring along friends and family who may not be as interested in mining as you are!

We offer a guided tour to explore the processing mill and surrounding remains, to get a feel for the harsh lives of the miners working away on the side of the fell. The tour takes about 1 hour, all tickets are £6 and we do provide transport up to the site.

To find out more visit <http://bit.ly/ForceCragMine> call 017687 74649 or email northlakes@nationaltrust.org.uk

Many thanks and I hope that we may see you at Force Crag Mine soon.

Cath Tyrrell
Marketing Assistant North Lakes Outdoors
National Trust
07909876577
017687 74649

Manchester Geological Association

Outdoor Events 2018 Calendar

Tuesday 24 July 2018: Crummockdale led by Peter del Strother. This is a Joint event with Lancs GA. Carboniferous limestones, Silurian turbidites (with cleavage in the mudstone facies), a Silurian mudstone with spectacular liesegang rings, a well exposed Silurian syncline and a superb and very unusual non-planar unconformity where a Carboniferous limestone / siliciclastic conglomerate overlies bedded and cleaved Ordovician basement. I will also include the famous Norber erratic locality.

Sunday 19 August 2018: Crompton Moor, Besom Hill and Oldham Building Stones led by Stephen Darlington. This is a joint MGA/ OUGS NW trip. Morning look at the geology of two locations on The Pennines above Oldham. Afternoon, a building stones walk in Oldham showing which stones were used at different times in the town's history.

Saturday 29 September 2018: Fred Broadhurst Memorial Field Trip: Deep Dale and Magpie Mine led by Jane Michael. The trip will be based round Walk 14 Ashford-in-the-Water and Magpie Mine in 'Rocky Rambles in the Peak District' by Fred Broadhurst.

To book on any trips please contact Jane Michael at outdoors@mangeolassoc.org.uk as soon as possible.

2018/19 Indoor Meetings calendar

Wednesday 17 October 2018 7.00pm: Holiday Geology: members talks

Saturday 10 November 2018 Broadhurst Memorial Lectures 1.30pm:

Earth's Distant Past:

Dr Stefan Schroeder, University of Manchester

Prof Richard White, University of St Andrews

Dr Matthew Warke, University of St Andrews

Thursday 22 November 2018 6.30pm: Joint Lecture with Manchester Geographical Association:

Dr. Colin Summerhayes, Scott Polar Research Institute, Cambridge.

"Melting Ice - Rising Seas: Antarctic Climate Change and the Environment"

Saturday 8 December 2018 1.30pm:

Some Aspects of the Quaternary:

Prof Jamie Woodward, University of Manchester

Prof Jeff Peakall, University of Leeds

Prof David Bridgland, University of Durham

Thursday 17 January 2019 6.30pm: Joint Meeting with Geological Society Northwest Region

Prof Robert Ward, British Geological Survey

Wednesday 6 February 2019 7.00pm: Annual General Meeting:

Presidential Lecture by Cathy Hollis

All lectures with the exception of the Joint Meeting with the Manchester Geographical Association will take place in the Lecture Theatre in the Williamson Building, Manchester University, Oxford Road, Manchester. The venue of the Joint Meeting with the Manchester Geographical Association will be the same as last year; ie Manchester Metropolitan University, Brooks Building, 53 Bonsall St, Manchester M15 6GX.

Manchester Geological Association

An Affiliated Society of the Geologists' Association
Founded 1925
Charity No. 500532

Confirmation of Details Form 2018

A new General Data Protection Regulation (GDPR) becomes law on 25 May 2018.

This law is aimed at protecting your personal data. Therefore, the Manchester Geological Association (MGA) will need your written consent to communicate with you by post, email, telephone, or text.

Please complete and return this form as soon as possible to the secretary, marking the envelope GDPR.

Or download the form from our website www.mangeolassoc.org.uk, complete it, and forward it electronically. A copy of the MGA's Privacy Policy document is on the same website page. Please read the Privacy Policy document before providing your consent.

N.B. Full and Associate members at the same address: please fill in **both** sets of consent boxes.

NAME(S):

TITLE(S): (Mr/Ms/Dr/Prof etc)

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TELEPHONE(S): (Home) (Mobile/Other)

EMAIL(S):

Date:

I consent to you contacting me by (please write Yes or No in appropriate boxes):

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I give the MGA permission to use my contact details, for MGA use only, as detailed in the MGA's Privacy Policy.

Completed forms can be returned by email to: secretary@mangeolassoc.org.uk or posted to: GDPR, Sue Plumb, 20 Ridge Crescent, Marple, Stockport, Cheshire SK6 7JA.

Thank you for completing the form