



Manchester Geological Association

President: Niall Clarke MSc

December 2020

www.mangeolassoc.org.uk

Founded 1925

On behalf of the Council may I wish all our Members a very Happy Christmas and all the best for the New Year when hopefully we can enjoy field trips and meeting up in person. Ed.



Photo Competition Winner

Monian (possibly Cambrian) schists by Jack Treagus

Who's Who in the MGA

Officers

President: Niall Clarke MSc

Vice-President: Dr Margaret Hartley

General Secretary: Sue Plumb BSc

Membership Secretary: Niall Clarke MSc

Treasurer: Jennifer Rhodes BA

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

Prof. Ray Burgess

Nicola Fowler BSc (Hons)

Peter Gavagan BSc (Hons)

Penny Heyworth Mphil

Ken Jacobs

Ex officio members of Council

The Immediate Past President, Manchester Geological Association: Prof. Cathy Hollis

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

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

Subscriptions for 2021 become due at the end of this month

Rates remain unchanged:

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

For those of you who **pay by cheque**, can you please send it to:

Niall Clarke
8 Wood Walk
Barnsley
S73 0NG

If you would like to set up a **standing order**, please email niallclarke01@gmail.com.

Quiz Answers September 2020

Q1. I would be mining for copper in the Lake District.

Q2. Knockan Crag Visitor Centre, North West Highlands. This represents the sequence of rocks found in this part of the Moine Thrust zone: from the base upwards: Torridonian Sandstone, Basal Quartzite, Pipe Rock, Fucooid Beds, Salterella Grit, Durness Limestone and Moine Schist at the top.

Q3. Wheal is a Cornish dialect word meaning 'place of work' and has become synonymous with mining locations.

Q4. The Green Bridge of Wales on the south Pembrokeshire coast. It is comprised of the Pen-y-Holt and Stackpole limestones of Arundian and Holkerian age

Q5. Arigna Coal Mine in County Roscommon, closed in 1990 having been worked since the 1700s.

Q6. Parkhouse Hill (taken from Chrome Hill). It is a reef knoll comprised of Bee Low Limestone (Visean Carboniferous).

Q7. Derbyshire, they are courts established to oversee lead mining.

Q8. A drainage sough. In this case near Derbyshire Bridge in the Peak District. It drains the Yard Coal Seam and 125,000 gallons of water per day were draining into the Goyt at its peak.

Q9. A structure which used water to separate ore from lighter gangue material.

Q10. St Bees Head, Cumbria. Triassic sandstones.

The Isles of Scilly

By Niall Clarke

The Isles of Scilly are probably best known for the glorious Abbey Gardens on Tresco and where Harold Wilson spent his final years and is now buried in a quiet churchyard overlooking the sea. For anyone looking for a quiet retreat sort of holiday, walking and bird watching, the Scillies are highly recommended. Figure 1 shows the general location and the named inhabited islands.



Figure 1 Location of the islands

You can fly there by plane and more hardy types can take the Scillonian from Penzance and now the helicopter link to Cornwall has been reinstated, these are again very much within reach of day trippers as well as those holidaying on one of the islands.

In terms of hard rock exposure, the islands are almost totally composed of granite, slivers of country rock, a tourmaline schist, exist on only one of the smaller uninhabited rocks to the north. The distinctive pattern of the archipelago is down to post ice-age rising sea levels filling the low points in the undulating surface of one of the bosses of the Cornish granite batholith (or more correctly the Cornubian granite) stretching from Dartmoor and running through Cornwall out past The Scillies into the Western Approaches. The combination of the rounded weathered granite, the sometimes-wild seas and sheltered coves surrounding five inhabited and hundreds of uninhabited islets and rocks is a joyful place to spend down-time.

Throughout the c. 4000 years human of occupation there has been gradual submergence of the land area. This prompted gradual changes in the way land was used. The islands' archaeological remains demonstrate clearly the gradually expanding size and range of contacts of their communities. In Iron Age time the Scillies were a tin trading point. By the sixteenth century the islands occupied a nationally strategic location resulting in an important defensive works up to the twentieth century – all worth a visit. One which can provoke thoughts of where we came from and

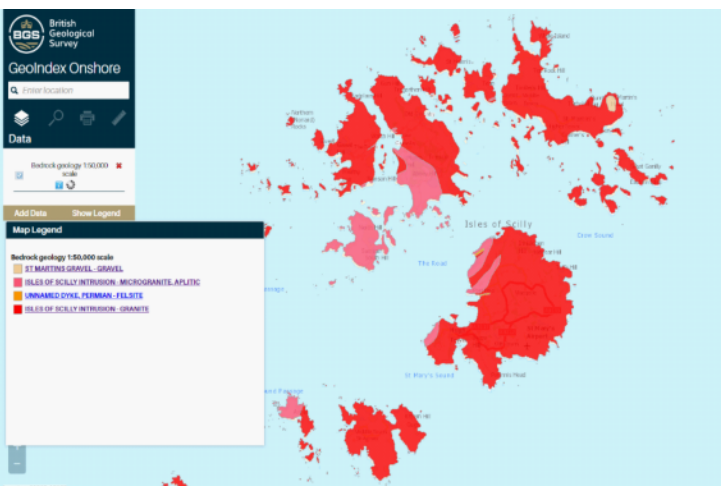


Figure 2 The solid geology (c) BGS Geotitles

are going as a civilisation is on the cliff edge at the SE tip of St Mary's where a cairn dated between 2000 to 1600 BC can be visited within feet of the end of the runway to the very modern airport – ancient and modern together.

The Cornubian granite was intruded during the final stages of the collision of the Gondwanan and Laurasian continents to form Pangaea; the Variscan orogeny. Dating gives a late Carboniferous – Permian age range of 300-275 Ma. As we all know the granites of Cornwall are famous for economic levels of mineralisation but the granite of the Scillies is rather poor in this regard with little history of mining other than ancient small-scale endeavours. Kaolinization, where late-stage hydrothermal fluids alter the feldspars to the clay mineral kaolin, is also absent from the Scillies. Figure 2 from the BGS Geotitles website, identifies two distinct granite types a coarser grained and finer grained. In the field the boundary is not especially sharp but as Figure 3 shows, this is not always the case. Felspathic phenocrysts are not uncommon (Figure 4) and the more typical coarseness of the granite is shown in Figure 5. I think between Figures 3, 4 and 5 the compositional differences in terms of feldspar and quartz are also evident.



Figure 3. two distinct granite types



Figure 4. Feldspathic phenocrysts



Figure 5. more typical coarseness of the granite



Figure 6. interesting veining at Piper's Hole on Tresco



Figure 7. Close up of veining in fig 6



Figure 8. quartz and tourmaline veins between 50 and 150 mm apart (close up Figure 7)



Figure 9. tin ore mineral cassiterite

Veining is extensive. One local guide book, discussing veining states rather jadedly ‘various attempts have been made to classify them, but for the layman there seems little point in this’. I tend to disagree and would like to spend more time looking at their texture and composition. For example, Figure 6 shows some interesting veining at Piper’s Hole on Tresco. These are identified as quartz and tourmaline veins between 50 and 150 mm apart (close up Figure 7) and seem to follow the main line of the jointing. The lighter V-shaped vein to the left in Figure 6 (close up Figure 8) and the vein in Figure 9 is identified as also containing the tin ore mineral cassiterite. I have collected a few hand specimens so it would be interesting to have this validated.

Granites are interesting things. At the university I attended there was an inspirational lecturer almost bonkers about tourmaline and granites. My undergraduate mapping project included a small granite in the west of Ireland. I think it is an area of geology I will take the time to reacquaint myself with.

This short article has been composed from:

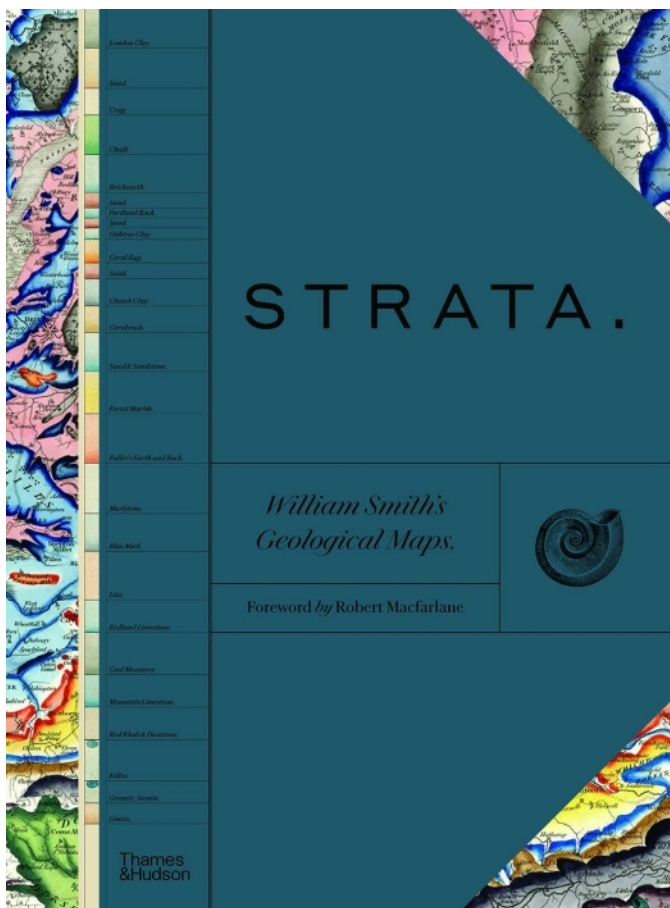
A short guide to the Geology of the Isles of Scilly published by the Isles of Scilly Museum.

The Geology of Cornwall, E. B. Selwood et al, 1998, University of Exeter Press

Evidence of tin and tungsten mineralisation in the Isles of Scilly, Grant, J.B. and Smith, C.W.E.H. 2012, Geoscience in South-West England, 13, 65-70.

Observations and photographs by myself from Summer 2020

Strata: William Smith's Geological Maps



We seldom include reviews of books but a recent publication from Thames & Hudson in conjunction with Oxford University Museum of Natural History would not only grace the coffee table of any geologist but is sturdy and large enough to make a coffee table.

The book is a celebration of William Smith’s contribution to the geological mapping of the UK and is extensively illustrated with Smith’s maps, cross sections and stratigraphy. In addition, there are photographs of Smith’s fossil collection alongside contemporaneous drawings.

The book is divided into four sections covering the famous 1815 sheets for *The Borders and the North, Wales and Central England, East Anglia and the South East* and *The West*. These are accompanied by geological cross sections, county maps and fossil illustrations organized by strata. The volume includes essays exploring the aims of Smith’s work, its application in the fields of mining, agriculture, cartography, fossil collecting and hydrology. *Contd next page*

Photo Competition Runner Up

Folding at Cocklawburn, Northumberland. Hilary and Peter Bennett



Strata: William Smith's Geological Maps *cont*

The book is visually striking, the quality of the map reproduction, photographs and drawings is to a very high standard and the accompanying text seems well researched and comprehensive, covering biographical as well as scientific themes. For example, there are items on canals, mines, mining techniques and mineralogy. The palaeontology is heavily illustrated and the mixture of drawings and photographs does, I think, demonstrate the superiority of a good drawing over a good photograph when illustrating fossils.

Why not ignore the usual online sources and have a trip to a bookshop and treat yourself to a copy!

STRATA - William Smith's Geological Maps, ed. Robert Macfarlane, Thames & Hudson 2020, 256 pages RRP £50.00.

Some links:

<https://www.nhm.ac.uk/discover/first-geological-map-of-britain.html>

<https://thamesandhudson.com/strata-william-smiths-geological-maps-9780500252475>

An update of Trevor Ford's Blue John book on the Moore books website. The details are...

Trevor Ford, Edited by Tony Waltham and Noel Worley, Sb, 80pp, 137 photos and 15 maps,

This book is a completely new edition, with a new publisher, of the classic and definitive book on Blue John fluorite, which Trevor Ford first published in 2000. It has been completely revised, much up-dated and somewhat expanded by Tony Waltham and Noel Worley, though Trevor sadly died during the early stages of its preparation. It covers the discovery and mining of the mineral, describes its geology with explanation of the distinctive colour, and records the past and present production of ornaments and decorative items from the mineral. The new edition continues to stand as the finest documentation of Blue John.

Contents:

Foreword by the Duke of Devonshire	Mining the Blue John
The special features of Blue John	Production of decorative Blue John
The origin of the name Blue John	Blue John not with the Romans
Caverns and mines with Blue John	The discovery of Blue John
Geological history of the Peak District	Matthew Boulton and Blue John
Mineral deposits of the Peak District	Blue John in fireplaces
The mineral deposits of Treak Cliff	Blue John into the 19th century
The mineralogy of Blue John	The Blue John craftsmen
The Blue John veins	Blue John at Castleton
Banded fluorite similar to Blue John	Blue John through to the 21st century
Notable collections of Blue John	

<https://www.moorebooks.co.uk/-USED-Derbyshire-Blue-John.html>

North West Geologist a request for issues 1 to 5

Jennifer Rhodes is requesting copies of issues 1 to 5 of North West Geologist so that they can be sent to the British Library. If you have any of these would you please contact Jennifer at: s_j_rhodes@hotmail.com

OTHER SOCIETY EVENTS

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

18 January Wren's Nest (TBC)

20 January Jurassic Brain Teasers

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

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

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

Yorkshire Geological Society <http://www.yorksgeolsoc.org.uk/>

January 4:00 pm 5:00 pm. A virtual tour of the geology of Islay, including its 2 billion year old gneisses, 700 million year old tillites, and 12 year old malt whiskies.

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

19th January: James Lea — Ice sheet stability.

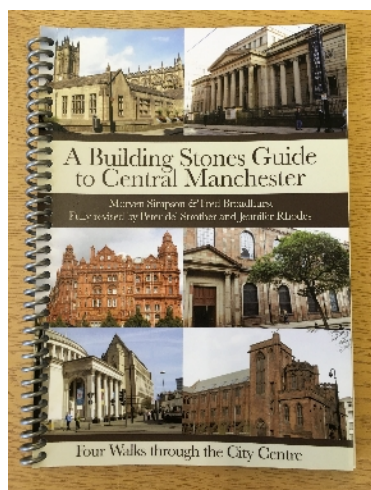
26th January: David McClay — Charles Lyell papers.

9th February: Steve Barrett — Stellar evolution.

2nd March: Amani Becker — Energy potential of River Mersey.

More details appear on their Meeting page: <http://www.liverpoolgeologicalsociety.org/meetings.htm>

Guests are always welcome. Just ask for a meeting link from Maggie Williams via the website.



The new edition of ***A Building Stones Guide to Central Manchester*** is available at £6 per copy (MGA members £4.50) + £2.50 p&p, please email your requirements and details to lgga.info@gmail.com.

Manchester Geological Association

A Christmas message from our President Niall

Dear Members,

As we reach the end of 2020, I would like to thank you for your support and engagement during the year. Although we have had to cancel physical meetings and field trips, the virtual field trips and lectures have proved very popular with between fifty and one hundred participants on every event. This programme would not have been possible without the support of the University and the hard work of MGA Council members who together provided the technology and imagination to make it all happen. I am sure I am speaking for all of us when I express our thanks to them. I'd also like to thank visitors from other associations who have joined us on line. I hope they continue to enjoy our events into 2021.

I also hope you have enjoyed the MGA newsletters and the material we have circulated from other geological associations.

At this stage it isn't clear what will be possible next year, but we are planning field trips and lectures; the details are in this newsletter. We look forward to you taking part in these events. If you would like to join the MGA Council please let a member of the Council know. You will be very welcome.

Finally, may I wish you and your family a happy Christmas and good wishes for the New Year.

Niall Clarke
President

Indoor Meetings 2021

Tony Adams Memorial Lecture Wednesday 13 January 2021

Plate tectonics explained
Prof Peter Burgess (University of Liverpool)

Wednesday 10 February 2021

Annual General Meeting and Presidential Address
Borehole Geology and public water supplies in the north west
Niall Clarke MSc

Wednesday 10 March 2021

Historic Mineral Mining in Afghanistan
Robin Grayson FGS

Broadhurst Lecture 3 Wednesday 14 April 2021

East African Rift Volcanism
Dr Celine Vidal (University of Cambridge)

To book a place and receive the log in details, please email lectures@mangeolassoc.org.uk