

# HOGG

## Newsletter of the History of Geology Group of The Geological Society



Number 68  
February 2020



## Front cover

WILLIAM AUGUSTUS EDMOND USSHER (1849–1920), the centenary of whose death is remembered this year.

Born in County Galway, Ireland in 1849, Ussher joined the Geological Survey of Great Britain (now British Geological Survey) in 1868 and spent his whole career (retiring in 1909) as a field and mapping surveyor. He is best known for his work in the south-west of England (Cornwall, Devon, Somerset), particularly his work on the Devonian, Carboniferous and Triassic strata. In 1894, he was awarded the Geological Society's Murchison Medal. Many Survey maps and memoirs bear his name as does the Ussher Society founded in 1962 as a focus for geological research in south-west England. Originally published under the title *Proceedings of the Ussher Society*, its journal was renamed *Geoscience in South-West England* in 1998.

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Image: courtesy British Geological Survey (P575830)

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**The HOGG newsletter is issued in February (copy deadline 31st January), June (copy deadline 31st May) and October (copy deadline 30th September).**

Past newsletters are available at <http://historyofgeologygroup.co.uk/newsletter/> and <https://www.geolsoc.org.uk/hogg-newsletters> .



## LETTER FROM THE CHAIR



It is in the lot for those keen on things historical that anniversaries, and their centenary, bicentenary and millennial high points, are the on-going stuff of our interest. And the high points are there to be seized—blink and they are gone for another hundred years or more; certainly for a generation beyond the present. Anniversaries are, of course, selective, and can be used for different purposes—celebration, commemoration, or simply to acknowledge a significant event or achievement.

Last year, we marked two such anniversaries with meetings: Firstly, in May, we had the centenary of the first female Fellows of the Geological Society—which turned out to be a rightly just celebration of the role women have played in the development of geological science, and amply highlighted how the Geological Society, amongst other key organisations in the geoscience world, has been much the richer for the admission of women to their midst. It was a privilege to welcome relatives of Gertrude Elles (1872–1960) at the meeting too. A Geological Society *Special Publication* of the proceedings is currently underway.

The second occasion for an anniversary was more ‘personal’ for HOGG. Marking our 25th year of existence, HOGG headed to York last October for a very successful meeting, jointly organised with the Yorkshire Philosophical Society (Geology Section) that explored the role of York and the region in the early years of geology. It was well attended, and it was good to see quite a contingent of HOGG members from the north of England at the meeting. The field day included a visit to the ‘classic’ Kirkdale Cave, famously studied by William Buckland who concluded that the fossils found within it were not a result of the Deluge but the result of hyenas’ feasting with the cave having been their den. The visit was aided by an online virtual tour of the cave’s interior (you can view and/or download this by copying and pasting the following link into your browser [shorturl.at/rs028](http://shorturl.at/rs028)). It was followed by an exciting side-trip to a back street on the outskirts of Kirby Moorside to view yet more caves—easily overlooked but important. William Buckland didn’t find any more fossils there, but he used this as negative evidence to support his Kirkdale Cave conclusions—seemingly the first such use of negative evidence in geology.

So to 2020, and there are two more anniversaries for HOGG members:

The first, in May, is a big one—not only as a bicentenary but also in its significance. On 1st May 1820, the Geological Society published *A Geological Map of England and Wales*, overseen by George Bellas Greenough. The anniversary year is a moot point as the date engraved on the map is November 1st, 1819, and the map is often cited as 1819. However, there is ample documentary evidence for when it was published and the accompanying memoir is dated 1820, so the argument for assigning the 1820 date is strong. The map and Greenough are often portrayed as controversial in other ways. Indeed, in Simon Winchester’s book *The map that changed the world*, Greenough’s conduct is characterised as “An ungentlemanly act” (Chapter 13). Winchester’s portrayal has been replicated over and over—somehow this has become the ‘authoritative’ view of Greenough. But, whilst the book is an engaging read, a good number of the ‘facts’ outlined in Winchester’s book do not stack up. It has been said by more than one (very reputable) historian of geology that both Greenough and his map deserve closer historical scrutiny to help evaluate if Greenough’s ‘reputation’ is deserved, or whether his work and map can be carefully explained in a more balanced way and be properly examined in the context of the thinking of its day and age. The Greenough Map Bicentenary Meeting on 6th and 7th May provides an opportunity to do just that. There is an interesting and exciting programme on offer. We are partnering with University College London Department of Earth Sciences to present this meeting. UCL has numerous associations with Greenough and the splendid Jeremy Bentham Room in the College will be the venue for what should prove to be a very convivial fine-dining dinner to mark the bicentenary of Greenough’s map.

The second day of this bicentenary meeting is akin to a field day—although the ‘fieldwork’ is an opportunity to view and discuss Greenough’s maps and specimens at the Geological Society. It is an exciting prospect and aims to give a real insight into the process of constructing the map. There will be numerous maps annotated by Greenough to look over, including one that was given to the National Museum of Wales back in the 1930s, and some rather special Greenough artefacts will be on show. In a previous HOGG newsletter, I mentioned how I recall drawing some of Greenough’s specimens as part of my undergraduate studies at UCL, and a selection of the material he gave to the nascent Geology Department at UCL will be on display. For a little more on Greenough, do read the feature article ‘Greenough’s World’ in the current issue of *Geoscientist*; you can view it at <https://www.geolsoc.org.uk/Geoscientist/February-2020/Feature-2>

I hope this has peaked your interest and you now want to attend this significant event. All HOGG members are cordially invited to attend. Details and how to register are included in this newsletter and on the HOGG website.

The second anniversary is a centenary—marking 100 years since the publication of Edward Greenly’s geological map of Anglesey. This was no ordinary geological map—it had been 25 years in the making. With Anglesey arguably containing the greatest variety of geology of any comparable area in the British Isles (ranging from Precambrian gneisses through to Carboniferous Red Measures, with ultrabasic and acid intrusions traversed by dykes, and a complex structural history), Greenly’s work was no mean feat. He was very ably supported in his task by his wife Annie, and their mutual devotion is a story worthy of a Hollywood film. Greenly honed his skills of geological outcrop mapping down to a fine art—in a pioneering approach that was innovative for its time but which is now adopted as standard practice for geological mappers. The summer HOGG meeting in August will visit Anglesey to explore Greenly’s approach to unravelling the geology of the island, guided by experts from Anglesey GeoPark. Seaside, rocks, history of geology—what’s not to like??! Be sure to book early for this meeting.

Read more in the following short *Geoscientist* articles by Jack Treagus available via online at <https://stage.geolsoc.org.uk/Geoscientist/February-2017/In-Anglesey-with-Henslow/> and <https://stage.geolsoc.org.uk/Geoscientist/Archive/April-2010/Greenlys-geological-map-of-Anglesey/>

If all this anniversary talk has made you curious as to what else might be ripe for a geologically linked bicentenary in 2020, then let me tell you that H.M.S. Beagle was launched on May 11th, 1820 (at Woolwich naval dockyard). The Beagle launch will be marked by a public event being organised by the HMS Beagle Trust and Rochford District Council in Essex, to take place on 29th–31st May 2020 in the Freight House (a restored Victorian engine shed) and the adjacent RSPB Wallasea Island reserve, which has views overlooking the final resting place of the Beagle (in estuary mud!). And finally one other, John Tyndall, an early pioneer of understanding how glaciers flow, was born in 1820.

If you are interested in anniversaries linked to the history of geology, then you could do worse than regularly visiting David Bressan’s Twitter feed History\_of\_Geology (@Geology\_History). Dave assiduously sends out tweets marking the anniversaries of individuals and events—great and small—that have stuck somewhere in the consciousness of geology. HOGG Twitter has occasionally added comments to these, offering a different appreciation of, or perspective on, what individuals achieved or the impacts of an event.

As a postscript, it must be said that anniversaries are anathema to some historians (which includes historians of science) and are considered a triviality. But the following best practice principles for ensuring that anniversaries engage seriously with what matters have been developed by the Heritage Lottery Fund (HLF) for projects they fund:

- Start from the historical facts

- Recognise the implications and consequences of what happened
- Understand that different perceptions and interpretations exist
- Show how events and activities can deepen understanding of the period.

These are very useful guidelines to apply to any HOGG meeting, anniversary or not. We should aim to follow them in making our 2020 meetings enjoyable and significant events that have historiographic credibility. I encourage you all to register and attend at least one of the meetings in 2020—and help make them a success.

Duncan Hawley  
e mail [duncan.hawley.hogg@gmail.com](mailto:duncan.hawley.hogg@gmail.com)

February 2020

### HOGG COMMITTEE 2020

**Chairman** Duncan Hawley **Vice Chairman** *pending* **Secretary** John Henry  
**Treasurer/Membership Secretary** Peter Riches **Ordinary members:** Cynthia Burek,  
Tim Carter, Beris Cox (**newsletter**), Jill Darrell, Cherry Lewis (**website**),  
Peter Lincoln, Nina Morgan

### NEW COMMITTEE MEMBERS



**TIM CARTER** is by background a medic, but one with a rather unusual career that has had a number of links to both geology and history. He fitted in one year of a geology course while a medical student and spent a summer as an assistant on a geological expedition to Spitsbergen. Later he worked for the Health and Safety Executive, where he was concerned with health risks from mineral dusts such as asbestos and silica. For a while, he managed field inspection services, including those for quarries. On leaving HSE, he spent a year funded by DIFD on Montserrat in the Caribbean, responsible for revising health care arrangements on an island with an erupting volcano and high ambient levels of silica dust. Subsequently he has worked for the Maritime and Coastguard Agency as their medical adviser, but has found time to do a master's course in maritime history and to write a book about merchant seamen's health. He has also studied the history of a range of occupational health risks, including a part time pre-retirement PhD on anthrax in Edwardian Worcestershire. He has been a member of HOGG for around five years and enjoyed both conferences and field trips.



**PETER LINCOLN** retired from careers in shipbuilding and school science-teaching to pursue his interests in history of science. An MSc dissertation project on the foundation of Ipswich Museum led to a fascination with the person and character of William Buckland, whose life and work now form the focus of his further studies. Devoid of any geological knowledge, Peter has nevertheless enjoyed and benefited from attendance at HOGG meetings, and hopes to be able to make some small contribution to the group during his term on the committee.

## HOGG WEBSITE

Our main website at <http://historyofgeologygroup.co.uk/> is up and running again after a hiatus last year, and continues to be upgraded. This provides easy access to all aspects of HOGG including details about our meetings and the facility for online registration and payment, as well as subscription renewal. We also have a presence at <https://www.geolsoc.org.uk/hogg> where you will find some useful resources.

## SOCIAL MEDIA



You can follow HOGG updates, history of geology news and selected items of interest through our Twitter feed where our username is @HOGGGroup. If you don't have a personal Twitter account, you can read all our latest tweets on the home page of our website <http://historyofgeologygroup.co.uk/>, and past tweets by clicking on the Twitter icon at the foot of that page. All our tweets also appear on the home page at <https://www.geolsoc.org.uk/hogg>

Please direct any HOGG Twitter queries to Duncan Hawley  
(e mail [duncan.hawley.hogg@gmail.com](mailto:duncan.hawley.hogg@gmail.com) ).

## HOGG NEW MEMBERS

HOGG welcomes the following new members

**John Bibby** (York)

**Simon Blackley** (Huntingdon)

**Laura Eddey** (Kirkbymoorside, North Yorkshire)

**Joanne Hawley** (Chipping Norton, Oxfordshire)

**Paul Henderson** (Henley-on-Thames)

**Sally Jaspars** (Aberdeen)

**Colin Speakman** (Ilkley, West Yorkshire)

**Martina Tully** (Birmingham)

## HOGG AGM 2019

For the benefit of those members who were unable to attend the AGM held in York on 23rd October 2019, the reports of the Chair, Secretary and Treasurer are reproduced below.

### **Chair's Report (Duncan Hawley)**

This Annual General Meeting in October 2019 is a landmark: it is 25 years since the inauguration of the History of Geology Group. It is pleasing to be able to report that after a quarter of a century HOGG has achieved much, with over 75 meetings and field excursions and members proposing, contributing and editing numerous scholarly volumes published in the Geological Society Special Publications series or contributing to Earth Sciences History (the international journal published by HOGG's sister organisation in the US—The History of Earth Sciences Society).

However, HOGG must not rest on its laurels; there remains a job in helping to make the story of how our geological knowledge of the Earth emerged and developed appeal more widely. It is with this in mind that during this year we have instituted a young person's membership rate (under 30 at £5 per year) and also a fee for non-members registering for a HOGG meeting that includes HOGG membership for the year, and this has brought more than ten new members to HOGG.

The HOGG Committee met four times over the year (January April, July and September). The Secretary's report outlines the main activities undertaken by HOGG during the year.

As another part of the focus on membership 'benefits', the HOGG Committee discussed desiderata for HOGG meetings, not in terms of topics, but venue locations, charges for meetings and interaction with/of those attending, expressly aiming to encourage greater participation in HOGG meetings drawn from a wider geographical constituency. The outcome was a set of working guidelines for one meeting a year to be held in London, another in the regions, and a third in the 'field'. The intention is to spread the meetings around the UK in a way that is inclusive of members, especially those normally at a disadvantage because of distance from London, but also so to prompt improved representation of the history of geology across the different regions of Britain. The guidelines also expect meeting charges to be as low as possible so as to break even over costs without an undue risk of loss. The Committee resolved to cap the daily charge for any meeting at £45, but with the caveat that it may be justifiable for the cap to be exceeded on occasions. London remains the most expensive place to hold a meeting; costs in other locations are generally much lower. With these in mind, the HOGG Committee reviews meeting budgets.

There was significant discussion at HOGG Committee over the management of the website. We decided one Committee member should assume responsibility for coordinating updates and changes to webpages but to outsource the 'technical' work of uploading new material to an independent consultant. We appointed Barbara Silva to the job, not least because her portfolio includes excellent work with websites of other geological organisations. HOGG Committee also deliberated on possible additions in building the website. No firm conclusions were reached but the aim is to develop more interest for members and visitors. Currently, the content on the HOGG website is largely confined to things of interest to 'initiated' members.

The Geological Society representative on HOGG Committee for the last three years, Sheila Peacock, finished her term as at the end of the summer. She served assiduously and conscientiously, attending to inform about matters relevant to history of geology within the Geological Society at large and she often advised on the best people to liaise with. Sheila has not yet been replaced, but we aim to prompt the Geological Society to appoint another person who can serve as effectively. Our grateful thanks go to Sheila for all her work with HOGG.

Two HOGG Committee members are retiring from their term of office; Geoffrey Walton and David Earle. Geoff served as Vice-Chair, giving much appreciated support to HOGG, not only through his wise counsel but, on several occasions, through generous backing of activities via his company DustscanAQ. Thank you Geoff.

David has given sterling service as HOGG Treasurer, quietly discharging his duty which not only involved overseeing HOGG finances but also membership and meeting registrations—you may have met David standing at front of house, even after the official start time of meetings when he dutifully registered any latecomers. A big thanks to David.

I encourage all HOGG members to attend one of our meetings in 2020, take part in discussion, activities and help spread the message that to understand a science it is necessary to understand its history—more especially in the case of geology.

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### **Secretary's Report (John Henry)**

**Meetings:** Three meetings were organised in 2019:

- 21 May. The Centenary of the First Female Fellows of the Geological Society of London, organised by Cynthia Burek and Bettie Higgs, in London
- 11-12 July. Aspects of the History of Geology in Scotland and the North of England convened by Tom Sharpe with the Edinburgh Geological Society and with field trips in Edinburgh organised by Beverly Bergman and Andrew McMillan;
- 23-24 October. The Genesis of Geology in York and Beyond organised by Duncan Hawley and John Henry in York with the York Philosophical Society and York Museum Trust, with field trips to Kirkdale Cave and Rosedale disused mines led by Duncan Hawley, Paul Thornley and Chris Duffin.

In addition, there have been short notice events, outside of the planned programme:

- 16 March. Dinomania at the New Diorama Theatre, London. Matinee theatre and meal following play about Gideon Mantell.
- 28 July. She Sells Sea Shells at the Omnibus Theatre, Clapham. Matinee theatre and meal following play about Mary Anning. S.S.S.S. went on to the Edinburgh Fringe in August.
- 18 October. Ralph Bagnold's Libyan Desert Expedition, at the Royal Geographical Society.

**Fund-raising:** In late 2017, HOGG was alerted to the disposal of Charles Lyell's library by his descendants to meet death duties. Although much of Lyell's library and correspondence were auctioned in July 2018, Lyell's 294 notebooks were to be sold privately to an anonymous buyer in North America. The export was temporarily banned to enable funds to be raised to keep the notebooks in the UK at the University of Edinburgh and to develop a website to make them accessible to all. The fund-raising was successful, meeting the £966,000 necessary to prevent export. HOGG played an active role by introducing the fund-raiser, to the GSL's Executive Secretary, to the treasurer of the History of Earth Sciences Society (HESS) and by circulating fund-raising news to HOGG members and other potential donors. From feed-back, we are aware specifically of £9500 raised through HOGG's efforts but know of several HOGG members who have made unspecified donations.

#### **Social media:**

- HOGG's JISC-mail (Joint Information Systems Committee) is a useful way of immediately reaching 194 members and others interested in the history of geology, by email. It is very useful in alerting people to the theatre, exhibitions and news that is germane, and for raising funds. It reaches a wider community than our membership of 168.
- The website, [www.historyofgeology.co.uk](http://www.historyofgeology.co.uk), is HOGG's 'shop window' for potentially interested people as well as providing information to members and providing a secure base for registering for meetings and taking payments. We are in the process of locating and digitising Abstract Booklets and Guides from past meetings and field trips to make them accessible on the website. Cherry Lewis maintains the jisc-mail and, with contractor Barbara Silva, the website.
- After a hiatus, the HOGG Twitter feed was revived in April 2019 and now has over 1800 followers. Tweets enable HOGG notices, comments and links to activities/meetings to be broadcast quickly (or live) to a wide audience and for 'on-topic' tweets from others to be shared. See <https://twitter.com/HOGGroup> and do contribute.
- Our very informative Newsletter that Beris Cox produces three times a year is a substantial benefit of HOGG membership. It includes cover articles by Beris, news, meeting reports and book reviews. Beris has been Newsletter editor since 2007, for which we are hugely appreciative, and has given notice that at the end of next year, she will retire as editor.

#### **Oral histories:**

HOGG embarked on an Oral History project over ten years ago. Several interviews were recorded but it lapsed for reasons that are now unclear. This year, it was revived by Sarah Day, the Geological Society staff member responsible for outreach, as part of the centenary of women fellows. HOGG supports Sarah. Committee members Nina Morgan and Cynthia Burek have conducted interviews this year.

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### **Treasurer's Report (David Earle)** **Financial Year ending 30 September 2019**

1. HOGG maintains three accounts:
  - Santander Business Account
  - Co-operative Community Directplus Account
  - Paypal Account
2. Main items of expenditure
  - 2.1 Committee travel expenses:
    - January 19 £351.25
    - April 19 £156.20
    - July 19 £271.55
    - September 19 £549.45
  - 2.2 Newsletter production:
    - Number 64 £101.84
    - Number 65 £39.00
    - Number 66 £63.27

- 2.3 GA Affiliation fee for 2019 £40.00
  - GA group insurance for 2019 £179.93
- 2.4 Website maintenance and reorganisation £633.04
- 2.5 Publicity materials (brochures, postcards, banner, pens) £768.93
- 2.6 Total expenditure on these items £3154.46 (previous year £2895.91)

3. Subscription Income  
£2000.00

Subscription remains the same for 2020 at £15pa  
New subscription rate of £5pa for age 30 and under.

4. Meetings

- 4.1 Bath meeting surplus of £329.84 (not reported in 2018)
  - 4.2 Coal meeting surplus of £88.76
  - 4.3 Edinburgh meeting surplus of £35.66
  - 4.4 Women fellows meeting surplus of £471.98
- Total meeting income £ 926.14 (previous year £328.12)

5. Account Balances

- Santander £4,373.90
  - Co-op £ 356.42
  - Paypal £8 188.05
- Total £12 918.37 (previous year £12369.90)

**THE GENESIS OF GEOLOGY IN YORK AND BEYOND**  
**HOGG 25th ANNIVERSARY MEETING**  
**23rd–24th OCTOBER 2019**



*Prof. Stephen Donovan<sup>1</sup> reports on HOGG's 25<sup>th</sup> Anniversary Meeting held in York in association with the Yorkshire Philosophical Society and York Museums Trust.*

Venue: Marriott Room, York Explore, Library Square, York YO1 7DS  
Convenors: Duncan Hawley [duncan.hawley@gmail.com](mailto:duncan.hawley@gmail.com) and John Henry [john@geolmaps.com](mailto:john@geolmaps.com)

**WEDNESDAY 23RD OCTOBER**

Getting to a HOGG meeting is never simple from the Netherlands; the North Sea always gets in the way. I flew into Manchester on Tuesday and was at Piccadilly Station so early the next day that I would have been in York before 8.00 a.m. if only TransPennine Express ran to timetable. John Mather came up from Devon; this was a meeting of the long distance travellers. Fortunately for us travel-weary souls, the venue for the

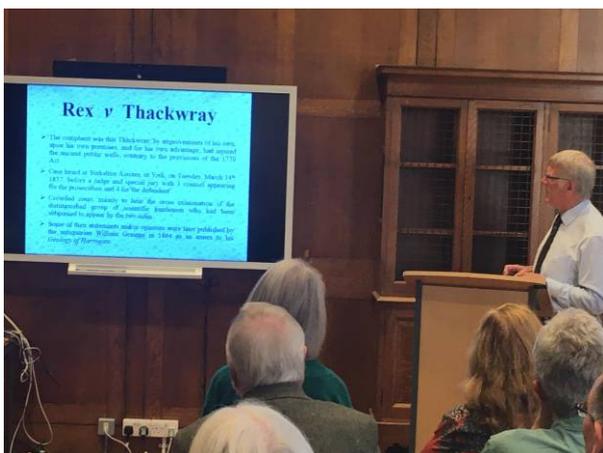
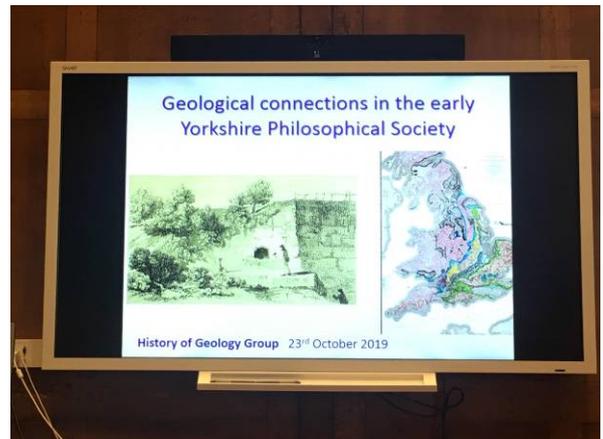


morning of talks, at York Explore in Library Square, was just a short walk from the station and next door to the Museum.

**Roger Osborne** (High Tide Publishing, Scarborough) gave the Keynote Address, a talk of three broadly similar titles—one in the programme, a different one in the abstract (*Gentlemen and players: early fossil trading on the Yorkshire coast*) and a third on screen. I have only quoted that of the abstract, the one that is likely to be recognised in the future. His subject can be encapsulated by a simple

question—if you found a fossil reptile on the Yorkshire coast in the late 18th and the 19th centuries, who would buy it from you and what would they pay? Once local museums were founded, a certain number found their way into them, but not always. Perhaps most notably, Adam Sedgwick bought a plesiosaur for Cambridge for 200 guineas. Prices rose as museums fought for specimens, even from as far away as Harvard, but prices fell as each of the interested institutions got a saurian.

**Peter Hogarth** (Yorkshire Philosophical Society) had just one title—*Geological connections in the early Yorkshire Philosophical Society*. Who knew what had been discovered? It seems that, in an age long before mobile phones and e-mail, everyone did. For example, the Pleistocene bones of Kirkdale Cave were first recognised by John Gibson FRS. The word spread and bones were collected by the cartload for private collections. It was only subsequently that the idea of a Yorkshire Museum emerged, shortly after the foundation of the Yorkshire Philosophical Society. John Phillips was appointed Keeper after giving well-received lectures, following on from those given by his uncle, William Smith. The Society and Museum had connections with many of the ‘great and the good’ in British geology, so it was no coincidence that the first meeting of the British Association (BA) was in York in 1831.



It is always a pleasure to hear my former boss at NERC, **John D. Mather** (Royal Holloway University of London), knowing that we’re both becoming historical objects ourselves! John’s subject was obscure, yet fascinating—*The Harrogate wells case of 1837 and a gathering of the scientific elite*. In 1770, there was an act of Parliament that no wells should be sunk that interfere with the flow of medicinal waters in Harrogate. In the 1810s, hotels had started to sink their own wells. In 1835, a Mr Thackwray sank a well for which he was prosecuted. Witnesses for the prosecution included William Smith, John

Phillips and John Dalton; the defence included a larger array of lesser lights. And ... it was all over by lunchtime! The two sides reached a mutually satisfactory agreement and Thackwray was found not guilty. The witnesses for both sides dined together that evening and the public, who had anticipated a feast of intellectual entertainment, went away, their philosophical desires unslaked.

*Scripture and Science: The Dean of York’s critique of Buckland and Sedgwick’s riposte* by **Margaret Leonard** (Yorkshire Philosophical Society) was marvellously entertaining. We all enjoy hearing of our champions triumphing over the ‘bad guys’, yet this wasn’t a Marvel superhero, but Adam Sedgwick. The BA came to York for a second time in 1844, a meeting where early photographers were active among the delegates. Geology was, as ever, a significant part of the meeting as demonstrated by the impressive array of vice-presidents—De la Beche, Murchison, Sedgwick and the Third Earl of Enniskillen. Yet there was an undercurrent equating geology with irreligion. The Dean of York gave an address criticising Buckland’s *Bridgewater Treatise* and giving his own speculative interpretation of geological history. In Buckland’s absence, it was Sedgwick who slammed down the Dean, apparently at some length, and emphasising the factual requirement for talking at the BA. The Dean’s talk is listed by title only in the Proceedings of the meeting.

**John Henry** (Nineteenth Century Geological Maps, London) talked about *John Phillips and Lithography*. Phillips was, of course, one of the most significant figures in 19th Century geology and palaeontology, and John showed that his involvement went as far as experimenting with printing coloured maps. Lithography, involving text and diagrams being drawn directly onto stone, was invented in 1799 and David Redman published the first lithographed book in England in 1815. Phillips was a self-taught lithographer, experimenting with different mixtures of inks on a variety of rocks. He produced coloured maps for one of the consultancy reports of his uncle, William Smith, and, later, for illustration of his own books and papers.

*The Yorkshire Boulder Committee—an erratic affair* was the subject of **Duncan Hawley** (Sheffield). The first report on erratic boulders in Yorkshire was by John Phillips at the BA in 1836. These were interpreted as the result of the interplay of powerful currents of water and oscillations of the land surface, just a few years before Louis Agassiz demonstrated that perched boulders were the mark of glacial action. The BA formed an Erratic Boulder Committee in 1873, to be followed by the Yorkshire Boulder Committee within the Yorkshire Naturalist Union (YNU). The latter became the Glacial Committee of the YNU in 1906. The data collected by the contributors to this committee were submitted by professionals and amateurs, and are still being referred to in the 21st Century.

After lunch, the delegates transferred next door to the Yorkshire Museum, both inside and out. Outside, we examined the calotypes displayed in the grounds of notable geologists, including De la Beche and Herschel (whose camera lucida drawings of European scenery he would discuss with Lyell). Inside, I did not explore all that was possible, but I was pleased to see part of the diverse collection of specimens from Kirkdale Cave, presented by Stuart Ogilvy and his volunteers. The historical significance of these specimens is undisputed, of course, and it is satisfying to see that they are receiving such devoted attention 200 years after many of them were collected.



*Celebratory anniversary cake and (right) the informal Anniversary Dinner held at the ASK Italian restaurant in the Grand Assembly Rooms, York, on Wednesday evening.*

#### **THURSDAY 24TH OCTOBER**

The next morning started in a fog of confusion for Malcolm Birtle and me. We assumed (erroneously) that the red arrow on the map provided in the abstract volume accurately located the car park at Morrison's supermarket, where the field trip would start. We spent 45 minutes not locating it. It was only subsequently (we lacked a GPS) that we found it only showed that Morrison's was in York, which we knew anyway, but by then we had driven north to meet up with the party at Kirkdale Cave.

But the trip was worth the effort, despite this early hiccup. Of course, the face has been quarried far back from that seen by Buckland et al. in the 1820s, but there is still the opening of a cave, even if the bone-rich portion has long disappeared. I had been introduced to the inside of the cave on Monday, in a video attached to an e-mail to delegates from Duncan Hawley, who was leading the field trip. Outside, it is a small opening in a not too overgrown face in a disused quarry. This might sound like little enough to see, but the discussion was animated, even vivid, and Duncan ably explained the site while acting as ringmaster of the diverse questions and answers.



*John Mather and Peter Lincoln in discussion.*

I missed the afternoon session at the Rosedale Ironstone Mines because I had to be elsewhere, but trust that it stayed dry and was as entertaining as the morning (see report by Peter Lincoln below). The meeting was convened by Duncan Hawley and John Henry, and I congratulate them on a job done particularly well. May I again cross the North Sea for a HOGG meeting sometime soon!

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***Peter Lincoln<sup>2</sup> continues the report of Thursday's events.***

The rain held off as the group returned to their cars to make the short drive to Kirbymoorside to visit a much less celebrated site of (historical) scientific interest.

In July 1822, six months after he had read his Kirkdale paper to the Royal Society, Buckland returned to Yorkshire, bringing with him the Society's president, Sir Humphry Davy, and a fellow Fellow, Henry Warburton. They came to see another cave, newly discovered on the land of Mr Charles Duncombe MP. Knowing of Buckland's regret that the Kirkdale cavern had been much disturbed before he himself was able to examine it, Duncombe had arranged for this latter cave to be sealed "till some qualified person shall be present to observe, and record the undisturbed appearance presented by its interior". Buckland tells us in *Reliquiae* that the new cave had been discovered in a "narrow gorge or valley called the Manor Vale".



Today's Manor Vale Lane runs northwards from the centre of Kirbymoorside village towards the golf club. It is bounded on either side by vertical limestone exposures, the result of Duncombe's quarrying activities. A neglected Portakabin and a few semi-derelict buildings are all that now remains of the small light-industrial area that once covered the former quarry floor, and high wire-mesh barriers prevent close examination of the rock face. Peering through the barriers, we were rewarded with a glimpse of a small opening; the remnant of the cave that Buckland had brought Sir Humphry to see. Sadly, the trio had found no bones at this location, merely a six-foot-thick "mass of loamy clay, precisely similar to that on the floor of the den at Kirkdale."

A light Yorkshire drizzle began to fall as we stood by the mesh

barrier imagining Buckland's disappointment that he would not, after all, be able to share with his illustrious friends the excitement of discovering a second den of hyaenas. But, as Duncan explained, the importance of this bone-less cave does not rest with the fleeting attendance of the three metropolitan savants in 1822. Its true significance lies in the way that Buckland used the humdrum mud that they did find as corroboration of his new and exciting ideas about Kirkdale. It is a site that deserves recognition as an important element in the ground-breaking reconstruction of an earlier world that won for the Oxford professor the Royal Society's coveted Copley Medal. In Buckland's own words: "*Our labour was lost as far as related to the discovery of more bones, or a second den of hyaenas; but it was repaid by the confirmation which this cave afforded in all its other circumstances of my speculations ... The absence of bones in this cave (the mud being present) adds to the probability that it was by the instrumentality of the hyaenas, and not of the diluvial waters, that the animal remains were collected in such quantities in the adjacent den at Kirkdale.*"

From Manor Vale, we drove the short distance across the moor past a mist-shrouded Chimney Bank Top to the village of Rosedale Abbey where we ate our packed lunches, donned our waterproofs, and sought what shelter we could from the steadily increasing rainfall. We had come to Rosedale to discover something of the great Cleveland ironstone industry that had delivered a large part of the nation's iron from the mid 1800s until well after the First World War. In particular, we would examine the site of an, at the time, unresolved 'conundrum' that, in the view of one contemporary writer, demonstrated "the baseless fabric upon which the so-called science of geology is made to rest". Such episodes are an important but often unsung part of geological history. Whereas the better-known Kirkdale story concerned the disputes of gentlemen philosophers, the less-celebrated Rosedale magnetic ironstone controversy was a tale of practical men whose intellectual challenges were primarily motivated by enterprise and profit rather than a simple thirst for knowledge.

In view of the weather, the original plan to walk down the old incline from Bank Top to the Magnetic Mines was abandoned and instead a damp but cheerful party followed our doughty guide up the Hollins Farm track to reach the site of the mines. Once on-site, Duncan bravely defended his



script from the assaults of wind and rain to deliver, verbatim, some of the arguments that had been rehearsed back in the 1850s in the chambers of the North of England Institute of Mining Engineers. The dispute centred on a small outcrop of rare magnetic ironstone, valuable due to its higher-than-usual iron content, which had been discovered at the very spot where we now stood cowering under our

umbrellas. John Marley, an experienced mining engineer and surveyor, upon whose early discovery of Cleveland Ironstone the local industry had been founded, had been cautiously optimistic that this discovery would prove to be part of an extensive seam of similar composition and therefore of immense value. Such a deposit would more than justify a large investment in the rail track and other infrastructure needed to exploit it. His view was shared by the Institute's president, Nicholas Wood. A 'drift' that had been cut into the hillside and three deep boreholes set back on the side of the valley appeared to support their conclusion—though both men agreed that the seam's true extent remained a matter of speculation. Less sanguine was Joseph Bewick, an agent of the nearby Grosmont Iron Mines. In Bewick's view, the nodular form and unusual chemistry of the ironstone suggested that it was of volcanic origin and thus likely to be of limited extent. From his own day-to-day practical experience, he challenged the others' interpretation of the evidence from the boreholes, suggesting

that they were mistaken in believing that they had proved that the deposit extended so far back into the hillside.

Initially, Marley and Wood won the day. More drifts were excavated, and a steam driven tramway installed to haul the ore up to Bank Top where it was dried in a large calcining kiln before being transported, by way of a new branch line, towards the furnaces of Middlesbrough. However, by 1870, it was clear that, although Bewick's "theory of the volcanic origin was now quite exploded", the deposit was, as he had predicted, limited in extent, being confined to two elongated troughs, each four or five hundred yards long by about 70 yards wide. Nevertheless, by that time at least three-quarters of a million tons of magnetic ore had been extracted and there remained "a considerable quantity to work". Modern interpretations suggest that the nodular magnetite ironstone at Rosedale represents "a condensed, remanié deposit ... preserved in shallow depressions on the pre-Dogger sea-floor."

After examining the site (and finding some wonderfully rusty-looking chalybeate water seeping from the old drifts), the group walked back to the village. Both time and the weather conspired against the planned visit to the Rosedale East Mines. However, as we passed Chimney Bank Top on the way back to York, the rain had eased enough for at least some of the group to explore the site of the Rosedale tramway's upper terminal and inspect the remains of the calcining kilns and the foundations of the stationary steam engine whose tall brick chimney (demolished in 1972) gave that spot its name.

Despite the weather, the day had been a great success. The sites we had visited included the famous and the obscure, and each of them had been explained with enormous panache and enthusiasm by our leader and guide, Duncan Hawley, who had also produced some comprehensive and beautifully illustrated excursion notes. Sincere thanks go to Duncan for a most enjoyable and fascinating day.

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Images courtesy Duncan Hawley and Peter Lincoln

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### HOGG at the GA FESTIVAL OF GEOLOGY Saturday 2nd November 2019

For a second year, HOGG took part in the Geologists' Association Festival of Geology at University College London. The HOGG stand was attended by four committee members, John Henry, Peter Riches, Jill Darrell and David Earle. A selection of relevant items for sale was provided by John; these raised £75 for HOGG funds. Interest in the festival and our stand was encouraging (despite a clash with the Rugby World Cup final) and a small spate of new members applying in the following month may be related to our attendance. Having four members to look after the stand allowed respite to check the other stands and stalls, although all four of us missed the bargain volume from the library of, and signed by, Ernest Shackleton. A very worthwhile exercise which will hopefully be continued.



John and Peter making a sale (Image © David Earle)

[David Earle]

## FUTURE HOGG EVENTS

### \*GEORGE BELLAS GREENOUGH MAP BICENTENARY MEETING

6th–7th May 2020

University College and Burlington House, London

See P. 15 for further details.

### \*EDWARD GREENLY AND THE GEOLOGY OF ANGLESEY—A CENTENARY MEETING

Weekend field meeting 21st–23rd August 2020

Anglesey

See P. 17 for further details.

### \*ARCHIBALD GEIKIE AS AN INNOVATOR, INFLUENCER AND EDUCATOR

20th November 2020 (including HOGG 2020 AGM)

Joint meeting with Haslemere Museum (sequel to the meeting held in April 2012)

Burlington House, London

See P. 18 for provisional details.

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#### ALSO IN THE PIPELINE:

- Open Meeting.
- Field-based meeting in the **Malvern Hills**
- Joint meeting in Sheffield based on work of **Henry Clifton Sorby (1826–1908)**
- Joint meeting with the Geological Curators' Group on **geological explorations of the polar regions** at British Antarctic Survey, Cambridge
- Joint meeting based in Dublin on aspects of the history of geology in **Ireland**
- Meeting at Burlington House on the importance of **railways and canals** in the development of geological knowledge and thinking
- Meeting in Edinburgh based on work and legacy of **Charles Lyell**
- Field-based meeting in **Norfolk**
- Field-based meeting in **mid-Wales** (with Mid-Wales Geological Group)

*If you have a particular interest in any of the above topics and would be prepared to contribute to the running of a meeting, please contact Duncan Hawley (email [duncan.hawley.hogg@gmail.com](mailto:duncan.hawley.hogg@gmail.com))*

*Otherwise, watch out for further details in future newsletters and on the website!*

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**GEORGE BELLAS GREENOUGH MAP BICENTENARY MEETING**  
**6th–7th May 2020**

**University College London and The Geological Society, Burlington House, Piccadilly**

**Convenors:** Duncan Hawley (HOGG) with Professor Ian Wood (UCL)



The Geological Map of England and Wales by George Bellas Greenough (1778–1855), also known as ‘the Geological Society’s map’, was published on 1st May 1820. A meeting to mark the bicentenary of this important map will take place on Wednesday 6th and Thursday 7th May 2020.

University College London (UCL) Department of Earth Sciences will be host on May 6th (conference and bicentenary dinner), and the Geological Society (Burlington House) will be the venue on 7th May (viewing maps and materials). On both days, there is a limit of 85 places so you are advised to book early—either online at <http://historyofgeologygroup.co.uk/> or by completing the registration form on P.29 of this newsletter.

The registration fee for the conference and the viewing days are inclusive of lunch with soft drinks, and coffee/tea refreshments. All registered delegates will receive an abstracts booklet and a ‘Greenough gift’.

UCL is a fitting venue for the conference day and bicentenary dinner as Greenough was instrumental in its founding; he was a subscriber (shareholder) in the original College, alongside a number of other prominent early Geological Society members involved in its set up in 1827, and he played a key role in its early governance. Greenough was an advocate for the inclusion of geology, one of the newer sciences, in the curriculum offered by the College, although a Chair of Geology at UCL, was not established until 1844, when fittingly, Thomas Webster, who had played such an important role in the draughting, engraving and colouring of the 1820 geological map, was appointed to the post of Professor of Geology.

**Wednesday 6th May 2020**

**Conference** 09.30–17.00hrs

A day of oral presentations and discussion in the Department of Earth Sciences at University College London (UCL).

**PROGRAMME**

09.30–10.00 REGISTRATION AND COFFEE

10.00–10.20 Introduction: the lives of Greenough—childhood, family, domestic, political and social. *Duncan Hawley*

10.20–10.50 Göttingen: the birthplace of Greenough’s lifelong passion. *Dr Maximilian van Woudenberg (Life Member of Clare Hall, Cambridge)*

- 10.50–11.20 Greenough’s aesthetic cultures of science. *Dr Allison Ksiazkiewicz*
- 11.20–11.40 COFFEE
- 11.40–12.10 Geological connections: Greenough and the Oxford Geological Club. *Peter Lincoln*
- 12.10–12.40 Greenough’s objectives in his 1819 book *First Principles* and his 1820 Geological Map and Memoir. *Prof. Hugh Torrens and Dr Geoffrey Walton*
- 12.40–13.10 The construction and distribution of Greenough’s 1820 geological map. *Tom Sharpe*
- 13.10–14.10 LUNCH
- 14.10–14.40 George Bellas Greenough’s legacy as a Geological Map Designer. *Karen Severud Cooke (University of Kansas)*
- 14.40–15.10 Greenough’s influence on the colours employed on early Geological Survey maps. *David G. Bate (British Geological Survey)*
- 15.10–15.40 Greenough’s map collection and what it reveals about his interests. *John Henry*
- 15.40–16.00 TEA
- 16.00–16.30 Manifestations of Greenough’s 1820 geological map: a ‘standard’ for subsequent geological maps. *Duncan Hawley*
- 16.30–17.00 George Bellas Greenough’s *General Sketch of the Physical and Geological Features of British India* (1854, 1855): its production, distribution, variants and survivorship. *Dr Christopher Toland (Oolitica Ltd)*

### **Greenough Map Bicentenary Dinner 19.00 hrs**

An evening celebratory, fine-dining, three-course dinner in the Jeremy Bentham Room at UCL, attended by UCL Vice-Provost (Research) Professor G. David Price (Professor of Mineral Physics in the Dept of Earth Sciences and formerly Executive Dean of the Mathematical and Physical Sciences Faculty). Professor Price will give an after-dinner talk.

The dinner will be a fixed three-course menu (starter, main and dessert, coffee/tea & petits fours) Diners can opt for a ‘standard’ menu (meat & fish) or a vegetarian menu, and any special dietary requirements or allergies can be taken into consideration. See registration form on P.29 for menu details. A selection of wines, beers and soft drinks to accompany the dinner will be available via a cash/card bar.

### **Thursday 7th May 2020**

**Viewing day 10.00–16.00hrs**

A unique opportunity at The Geological Society apartments in Burlington House to view and discuss maps that Greenough annotated and used to collate geological information and construct his first edition, together with original Greenough specimens and materials used in the construction of the first edition of his geological map of England and Wales. Subsequent editions of his map and other key early geological maps influenced by Greenough’s map will be on display, as will be the first geological map of India.

Material will be drawn from the archives of the Geological Society as well as that held at UCL, the British Geological Survey and the National Museum of Wales. This will be the first time these materials have been gathered together in at least 165 years.

For further information or enquiries, contact Duncan Hawley (email [duncan.hawley.hogg@gmail.com](mailto:duncan.hawley.hogg@gmail.com))

# EDWARD GREENLY AND THE GEOLOGY OF ANGLESEY— A CENTENARY MEETING

Friday 21st–Sunday 23rd August 2020  
Isle of Anglesey (Ynys Môn), North Wales



2020 marks one hundred years since the publication of the Geological Survey map of Anglesey; the memoir *The Geology of Anglesey* was published the previous year. Both these were the work of Edward Greenly (1861–1951), who had worked assiduously, with the support of his very able wife Annie, over the previous 25 years, to map the geology of Anglesey in great detail. Greenly was the master of mapping at six inches to the mile, and he would produce a book on *Geological Surveying* a decade later that would become a standard of how to do geological mapping.

Anglesey is renowned for its magnificent and varied coastal scenery, with its superb exposure of rocks. The geology of Anglesey had been studied, mapped and debated by ‘classic’ geologists since the early 19th Century, notably John Stevens Henslow (in 1822), Henry Thomas De la Beche, and Andrew Crombie Ramsay (in 1849, 1850 and 1851). They had described the rocks and had begun to unravel the stratigraphy, but it was Greenly who paved the way for our present-day understanding of the structural complexity and variety of geological settings that produced the rocks of Anglesey. Greenly was the first to introduce the term ‘mélange’ for the rock formerly known as ‘crush breccia’, and there will be a visit to Greenly’s type section for this deposit which is of international significance. We will explore sites mapped by Greenly, and thereby begin to understand the ‘genius’ of his achievement.

Visits to ‘classic’ sites will be led by members of the UNESCO GeoMôn Geopark.

<http://www.geomon.co.uk/welcome/4533286587> Details of the itinerary are yet to be confirmed, but the meeting will start (on the evening of 21st) at the GEPark HQ in Amlwch (on the north coast). There will be a visit to the grave of Greenly and, if possible, to the grave of A.C. Ramsay, who is also buried on the island. We also hope to arrange a visit to see Greenly’s archive in Bangor.

## Accommodation

Participants will be expected to make their own accommodation arrangements. There are numerous Bed & Breakfast options on Anglesey (many around £50–70 per night)—easily bookable via internet accommodation agencies, e.g. booking.com The area around Amlwch and Cemaes is a pleasant and convenient location to be based, but many other places on Anglesey would be suitable locations. For those who wish, it is possible that we can arrange to meet for evening meals. *You are advised to book your B&B as soon as possible.*

## Transport

Nowhere on Anglesey is more than a distance of a 45 minute drive. We aim to arrange car share for the field visits. For those who wish to travel by rail, trains run from Euston to Holyhead (note that most of the stops on Anglesey are request). Arrangements can be made to meet those arriving by train from a nominated station.

## Registration and cost

There will be a charge for the meeting of £15. Registration and booking will be via the HOGG website <http://historyofgeologygroup.co.uk/> but for HOGG members who do not have internet access, please complete the form on P.30.

**Convenor:** Professor Cynthia Burek (email [c.burek@chester.ac.uk](mailto:c.burek@chester.ac.uk))

**Enquiries to** Duncan Hawley (email [duncan.hawley.hogg@gmail.com](mailto:duncan.hawley.hogg@gmail.com))

## ARCHIBALD GEIKIE AS AN INNOVATOR, INFLUENCER AND EDUCATOR

Burlington House, London

Friday 20th November 2020

Planning is well under way for a HOGG meeting on November 20th exploring Archibald Geikie as innovator, influencer, and educator. The meeting, jointly organised with Haslemere Educational Museum, will be held at the Geological Society, Burlington House and the programme will include the HOGG 2020 Annual General Meeting. There will be an optional second day (Saturday 21st November) with a visit to Haslemere, to include viewing Geikie's archive at Hazlemere Educational Museum, a visit to his grave, and geological walks in his home town area.

Geikie was a prolific writer and painter of landscapes. He held high positions, notably the Murchison Chair of Geology at Edinburgh University (1871–1882), Director of the Geological Survey (1882–1901), President of the Royal Society (1908–1913), President of the Geological Society (1891–2 and 1906–7) and President of the British Association (1892). The meeting aims to look at how Geikie used his writing and his artistic skills, and his substantial powers of patronage and influence to spread his view on the place, value and scientific significance of geology (physical geology in particular) to a wide audience, both young and old, at home and abroad. It will include new perspectives on Geikie's travels to North America. Geikie's great grand daughter will also be speaking.

The meeting will focus on his post-Murchison years, so will explore new perspectives of Geikie's work, and complement the HOGG conference on Geikie's life and work held in 2012 (which spawned *GS Special Publication* 480 last year).

Further details will be circulated when confirmed, and given in the next (June) newsletter. In the meantime, do put the dates in your diary!

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### ORAL HISTORY PROJECT

As part of the Geological Society Centenary Celebrations in 2007, Nic Bilham began an oral history project on behalf of HOGG. The aim was to record memories of the life, times, geological careers, and especially the voices of longstanding members of the Geol. Soc. A number of very interesting recordings were made by volunteers, who visited interviewees at their homes or offices. These are now stored in the Geological Society's archives, a permanent public reference resource for use in research, and for use by the Society for publication, education, lectures, broadcasting and dissemination on the internet. In 2019, the Geological Society relaunched the project as part of the centenary of female Fellows of the Geological Society, with a view to interviewing longstanding female members of the Society.

The Society is working with HOGG to establish a network of volunteers to conduct interviews, and to get in touch with longstanding members (both male and female) who are interested in sharing their memories and experiences. If you would like to help with either, or would like to be interviewed yourself, please let us know and we can help to match potential interviewers and interviewees.

Further information about what's involved—including information for potential interviewees, tips for conducting interviews and suggested questions—will be available shortly on the HOGG website. Recording equipment will be provided!

Contacts are Nina Morgan [nina.morgan@cooptel.net](mailto:nina.morgan@cooptel.net) and Sarah Day [sarah.day@geolsoc.org.uk](mailto:sarah.day@geolsoc.org.uk).

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## ON-GOING RESEARCH ON THE TEACHING COLLECTIONS OF WILLIAM BUCKLAND AT OXFORD

*HOGG member Susan Newell<sup>1</sup> reports on her current research project and her collaboration with other HOGG members.*

I started my doctoral project (funded by the Arts and Humanities Research Council) at the University of Leeds (History of Science) in collaboration with the Oxford University Museum of Natural History (OUMNH) in October 2018. My research centres on the teaching collections of William Buckland surviving at OUMNH and how these contributed to the development of the university discipline of geology in the nineteenth century. John Henry and Geoff Walton are among many HOGG members who have been a great help to me in my research to date. In late November 2019, we met at the OUMNH to investigate the massive uncatalogued teaching diagrams stored there, as I need to identify which items relate to Buckland's period as Reader in Mineralogy and Geology at Oxford, c. 1813-1850.



Image © Susan Newell

The photo figured here shows John (*centre*), Geoff, and Eliza Howlett (Head of Earth Collections), in the former Paper Conservation Studio in the attic of the OUMNH, with an enlarged version of the keyed theoretical section by Georges Cuvier and Alexandre Brongniart, first published in 1829: *Tableau Théorique de la Succession et de la Disposition la plus générale en Europe, des Terrains et Roches qui composent L'Écorce de la Terre ou Exposition Graphique du Tableau des Terrains, publié en 1829 par Mr Alexandre Brongniart, Professeur de Minéralogie au Muséum d'Histoire Naturelle de Paris.*

Drawn and tinted by hand and laid on fine canvas, at over 2.5 m wide, this section is over three times the size of the print of c. 1830. This massive version was probably sent personally to Buckland by Brongniart as a sign of mutual esteem. Many members will know the print of Buckland lecturing in the original Ashmolean building of 1823. However, around the

time he received the '*Tableau Théorique*', Buckland was installed in his new, larger lecture room and 'Geological Museum' in the Clarendon Building, formerly the home of the Oxford University Press. A floor of this building was given over to Buckland from c. 1831 for teaching and the display of his own extensive geological collections, combined with those of the Old Ashmolean. On his death in 1856, Buckland bequeathed all his specimens and teaching materials at Oxford to the University.

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[susan.newell@oum.ox.ac.uk](mailto:susan.newell@oum.ox.ac.uk)

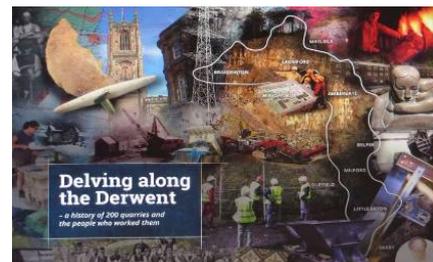
## BOOK AND MAP NOTES

### *Delving along the Derwent: a history of 200 quarries and the people who worked them*

Ian Thomas

National Stone Centre 2019 191pp.

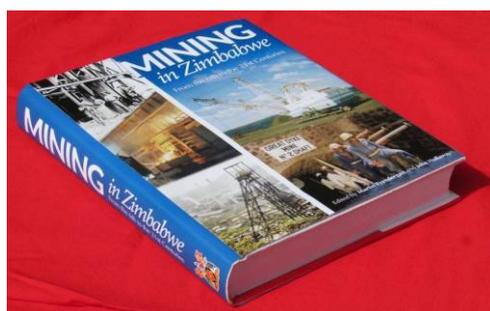
ISBN 9781871827439



“Whilst lottery funding met the cost of a limited print run, meaning initial copies are/were available free of charge, the production and distribution of further copies is not covered, so recipients are invited to donate £15.00–£20.00 per copy towards National Stone Centre funds. For further information or to order a copy of the book, contact delving project co-ordinator Ian Thomas on tel: (01332) 833385 or email: [ianathomas2@gmail.com](mailto:ianathomas2@gmail.com). Alternatively, contact Lisa Witham at Derbyshire Wildlife Trust on tel: (01773) 881188 or email: [lwitham@derbyshirewt.co.uk](mailto:lwitham@derbyshirewt.co.uk)”

“This glossy new book, packed with pictures, traces the pattern of quarry workings from prehistoric times to the present day across a 20-mile stretch of Derbyshire and the Peak District between Derby and Matlock and around Wirksworth. The quarries in this area were critical during the Industrial Revolution, with their ready access to tough and pure stone resources putting them in pole position to serve the nation, and together they still produce around 2.5 million tonnes of stone every year.

A chronological review of significant developments prior to industrialization is followed by a gazetteer which tracks, in great detail, 175 sites. This is supplemented by accounts of players in the industry and their roles, and dynastic accounts of eight major families. An introduction serves as a mini ‘how to do it’ manual, whilst other sections analyse millstone- and grindstone-making from earliest to recent times and briefly describe paint production as well as the industry’s geological origins. That Stephenson produced lime at Crich to mop-up unsaleable small coal from his collieries; that the Barton family, famed for their bus company, were previously important in the local quarrying industry; and that Middleton limestone mine has 40 km of tunnels large enough for a double-decker bus to pass through, are among the wealth of factual nuggets contained within the book. ....” [publisher’s notes]



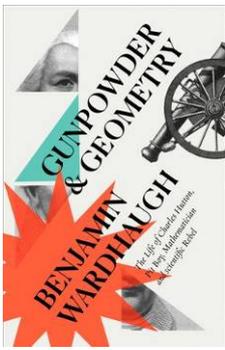
### *Mining in Zimbabwe: from the 6th to the 21st centuries*

Martin Prendergast & John Holloway (eds)

The Chamber of Mines of Zimbabwe 2019 645pp.

“In this book, a group of Zimbabwean mining professionals describe the discovery, development and production histories of each of the country’s major mineral commodities, mainly from a technical viewpoint. ....Blessed with a deep and varied geological history, and an unusually wide range of

mineral resources, the land between the Zambezi and Limpopo rivers in southern Africa has been ‘mining country’ for fifteen hundred years. .... The main chapters are preceded by accounts of the geological basis of Zimbabwe’s mineral wealth and of the historical role of government in the development of the mining industry; they end with a discussion of the country’s mining economy. ...” [publisher’s notes]



### ***Gunpowder & Geometry***

***The Life of Charles Hutton: Pit boy, Mathematician and Scientific Rebel***

Benjamin Wardhaugh

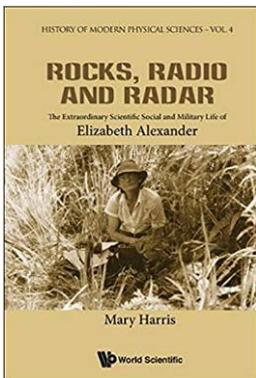
William Collins 2019 320pp.

ISBN 9780008299958 hardback RRP £20

“August, 1755. Newcastle, on the north bank of the Tyne. In the fields, men and women are getting the harvest in. Sunlight, or rain. Scudding clouds and backbreaking labour. Three hundred feet underground, young Charles Hutton is at the coalface. Cramped, dust-choked, wielding a five-pound pick by

candlelight. Eighteen years old, he’s been down the pits on and off for more than a decade, and now it looks like a life sentence. No unusual story, although Charles is a clever lad—gifted at maths and languages—and for a time he hoped for a different life. Many hoped.

Charles Hutton, astonishingly, would actually live the life he dreamed of. Twenty years later you’d have found him in Slaughter’s coffee house in London, eating a few oysters with the President of the Royal Society. By the time he died, in 1823, he was a fellow of scientific academies in four countries, while the Lord Chancellor of England counted himself fortunate to have known him. Hard work, talent, and no small share of luck would take Charles Hutton out of the pit to international fame, wealth, admiration and happiness. The pit-boy turned professor would become one of the most revered British scientists of his day. This book is his incredible story.” [publisher’s notes]



### ***Rocks, Radio and Radar: The extraordinary scientific, social and military life of Elizabeth Alexander***

Mary Harris

World Scientific Europe 2019

World Scientific (History of Modern Physical Sciences, volume 4) xii +587pp.

ISBN 978-1-78634-6643 hardback Geol.Soc. list price £75.00

ISBN 978-1-78634-6667 ebook RRP £29.95

“Many women scientists, particularly those who did crucial work in two world wars, have disappeared from history. Until they are written back in, the history of science will continue to remain unbalanced. This book tells the story of Elizabeth Alexander, a pioneering scientist who changed thinking in

geology and radio astronomy during WWII and its aftermath. Building on an unpublished diary, recently declassified government records and archive material adding considerably to knowledge about radar developments in the Pacific in WWII, this book also contextualises Elizabeth's academic life in Singapore before the war, and the country's educational and physical reconstruction after it as it moved towards independence. This unique story is a must-read for readers interested in scientific, social and military history during the WWII, historians of geology, radar, as well as scientific biographies.”[publisher’s notes]

### ***Geology at the University of Manchester: A brief history (1851–2004)***

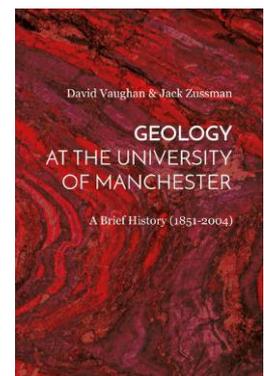
David Vaughan & Jack Zussman

Troubador 2019 165pp.

ISBN 9781789017106 hardback RRP £15.00

ISBN 9781789019773 e book £6.99

“Geology has been taught at what became the University of Manchester since 1851 when W.C. Williamson was appointed as the first Professor. (He was also Professor of Botany and Zoology in the early years and a medical doctor specialising in ear surgery!) Beginning with Williamson, this book outlines the fascinating story of the growth in teaching and research in geology at one of the world’s foremost centres throughout the nineteenth and twentieth centuries



and early years of the present century.

Manchester was one of three centres (with Oxford and Cambridge) which led research and teaching in geology in the UK and associated with the ‘big names’ (Boyd Dawkins, Holland, O.T. Jones, Pugh, Deer, and Vincent). As well as describing the Heads and their contributions, the ‘comings and goings’ of all academic staff are outlined. A chapter on the evolving ‘research scene’ takes readers through the early years, when individual scientists focused on the basic description of rocks, fossils and minerals or the geological mapping of areas in the UK. This led on to research groups in areas such as experimental petrology, isotope geochemistry and cosmochemistry, and molecular environmental science.

Another major theme of this book covers the student experience and outlines the history of buildings used for teaching and research, along with student numbers, and teaching quality. A more personal aspect is given by a chapter of recollections from former students and staff. These accounts offer a fascinating insight into life as a geology student at Manchester in the mid to late 20th and early 21st centuries. The successes of these geologists led to recognition in the form of knighthoods, fellowships, medals and awards and brought substantial resources into the Department. Although this account ends in 2004, a short ‘epilogue’ speaks of further major developments to around 2018.” [publisher’s notes]

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.....**ALSO OF INTEREST?** (names in bold are HOGG members)

**Bate, David G.** and Morrison, Andrew L. 2019. Cavendish Walters’ holy wells. *Mercian Geologist*, **19(4)**, p. 205.

\***Cook, Karen S.** 2019. A geological tale of two cities: Cuvier and Brongniart’s map of Paris (1811) and Conybeare and De la Beche’s map of Bath (1823). *The Geological Curator*, **11(2)**, 113–120.

\***Cotterell, Tom F.** and Williams, Matt 2019. Francis Basset, 1st Baron de Dunstanville and Baron Basset of Stratton, and his mineral specimens at the Bath Royal Literary and Scientific Institution and the Natural History Museum, London. *The Geological Curator*, **11(2)**, 121–142.

**Donovan, Stephen K.** 2019. Book review: The Enlightened Mr. Parkinson by Cherry Lewis. Icon Books, London, 2018.....*Proceedings of the Geologists’ Association*, **130(5)**, p.654.

\_\_\_\_\_ 2019. Book review: Adam Sedgwick: Geologist and Dalesman, 1785–1873: A biography in twelve themes by Colin Speakman. Gritstone Writers Co-operative, Hebden Bridge, and Yorkshire Geological Society, 2018.....*Proceedings of the Geologists’ Association*, **130(5)**, p.655.

\***Duffin, Christopher, J.** 2019. Charles Moore and late Triassic vertebrates: history and reassessment. *The Geological Curator*, **11(2)**, 143–160.

Hannath, S. 2019. 1258 – Salisbury Cathedral and one of the world’s greatest volcanic eruptions. *Magazine of the Geologists’ Association*, **18(4)**, 28-30.

**Hawley, Duncan** and Lam, Caroline 2020. Greenough’s World. *Geoscientist*, **30(1)**, 16–19.

**Henry, John** 2019. John Phillips (1800–1874): The introduction of lithography in geological mapmaking in Great Britain. *IMCøS Journal*, **157**, 10–27.

**Howells, Cindy** 2019. A tale of heavy fossils: the history and storage of the Charles Moore Ichthyosaur Collection. *The Geological Curator*, **11(2)**, 179–183.

\***Hutchinson, Deborah** 2019. Mr Sanders’ Map. *The Geological Curator*, **11(2)**, 161–172.

- Morgan, Nina** 2019. Distant Thunder: A casualty of war. *Geoscientist*, **29(10)**, p. 26. [on Gertrude Elles and Ethel Wood]  
 \_\_\_\_\_ 2019. Distant Thunder: A geologist's Christmas in Wales. *Geoscientist*, **29(11)**, p.26. [on John Phillips' Christmas in Wales 1841]  
 \_\_\_\_\_ 2020. Distant Thunder: Marriage of true minds. *Geoscientist*, **30(1)**, 26. [on Edward and Agnes Arber, and their daughter Muriel]

Simmons, Mike. 2019. The continuing journey of geological discovery. *Geoscientist*, **29(10)**, 10-15

\* Papers presented at the joint HOGG/GCG meeting *Collectors, Collections and the geology of South-West Britain* held in Bath, September 2018 (see HOGG Newsletter 64).

**NEW REPRINTS OF CLASSIC  
 GEOLOGICAL BOOKS  
 (YORKSHIRE and the NORTH OF ENGLAND)**



**YORKSHIRE  
 GEOLOGICAL  
 SOCIETY**

*The following article is reproduced, courtesy of Patrick Boylan, from Circular 626 (November 2019) of the Yorkshire Geological Society.*

Several reprint publishers in India, the USA and the UK are now publishing good quality scanned reprint editions of classic geological books, and are advertising these on the AbeBooks searchable joint online catalogue of the current stocks of several thousand national and international bookshops and dealers at <http://abebooks.co.uk>

From time to time, new reprints of works by geological authors and topics especially associated with the North of England, will be listed in the YGS Circular—this time John Phillips and Adam Sedgwick (two of the first YGS Honorary members).

Note: The price shown is the lowest currently listed for the title. There may be several different reprint editions available at different prices.

**JOHN PHILLIPS (1800–1874)**

- *Illustrations of the Geology of Yorkshire vol. 1 Yorkshire Coast, 1829* (Prices from £11.56)
- *Illustrations of the Geology of Yorkshire col. 2 Mountain Limestone District, 1836* (Prices from £10.41)
- *Syllabus of a Course of six Lectures, 1832* (Prices from £6.37)
- *A guide to geology, 1835* (Prices from £4.66)
- *Black's Picturesque Guide to the English Lake District, including an essay on the geology by John Phillips, 1836* (Prices from £6.47)
- *Treatise on Geology by John Phillips in 7th Edition of Encyclopaedia Britannica, 1837* (Prices from £11.56)
- *Palaeozoic Fossils of Cornwall, Devon and West Somerset, 1841* (Price £23.36)
- *Railway Excursions from York, Leeds and Hull, 1854* (Prices from £6.47)
- *Notice of Rocks and Fossils in the University Museum Oxford, 1871* (Prices from £20.45)

**ADAM SEDGWICK (1785–1873)**

- *Syllabus of a Course of Lectures on Geology, 1837* (numerous copies from £6.80)
- *Complete Guide to the Lake District by William Wordsworth, with three letters on the Geology of the Lake District by Professor Sedgwick, 1842* (Prices from £12.11)

- *Catalogue of the Collection of Cambrian and Silurian Fossils contained in the Geological Museum of the University of Cambridge, 1873* (Prices from £26.35)
- 

## HISTORY OF THE BRITISH GEOLOGICAL SURVEY

Thanks to the efforts of Bob MacIntosh (retired Librarian BGS Edinburgh), various documents and books relating to the history of the BGS are now available via Earthwise—the digital publication channel for the BGS.

[http://earthwise.bgs.ac.uk/index.php/History\\_of\\_the\\_British\\_Geological\\_Survey](http://earthwise.bgs.ac.uk/index.php/History_of_the_British_Geological_Survey)

Navigate down to 'Links' and you will be able to access the full text of various documents and books relating to the history of BGS, with others to follow.

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## GS LIBRARY NEW ONLINE EXHIBITION

The GS Library has recently added a new online exhibition about Charles Moore (1815–1881) to their website. *“Using material from the archive collection and sources from the Geological Society Library, this exhibition gives an insight into the life of a man who had a fervent passion for geology and left behind a significant palaeontological legacy.”*

View at <https://www.geolsoc.org.uk/Library-and-Information-Services/Exhibitions/charles-moore>

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## THE HISTORY OF THE GEOLOGICAL SOCIETY’S LIBRARY IN RUBBER STAMPS, 1811-2007

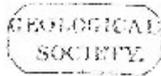
Wendy Cawthorne<sup>1</sup> (Assistant Librarian, The Geological Society)

During the Geological Society’s Bicentenary Library Re-cataloguing Project, the then Librarian, Sheila Meredith was intrigued to discover how many different library stamps had been used over the years and gradually built up a record of them. I contributed to this in a small way and finally we made a collection of images of the different stamps and recorded our findings—then just filed the sheet of images away, hoping it might be of interest in the future.

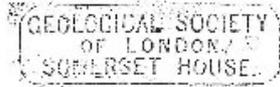
It is at last going to be used in the forthcoming exhibition curated by our Map Librarian, Paul Johnson, on the history of the Society’s Library, which will be in the display cases in the Lower Library and Lyell Room. The dates of this small exhibition will be advertised in the Library’s e-mailed/online Library newsletter. If you do not already receive this, you can be added to the mailing list by registering online <https://www.geolsoc.org.uk/newslettersignup>, or emailing [library@geolsoc.org.uk](mailto:library@geolsoc.org.uk)

You do not have to be a member to visit the exhibition or subscribe to our newsletters, but anyone wishing to use the library or email us for assistance in their research, must either be a Fellow, a Friend or pay a daily fee. Becoming a Friend of the Geological Society costs only £39 and comes with additional benefits, e.g. discounts on the purchase of Geological Society *Special Publications*. For further details, see <https://www.geolsoc.org.uk/friends>

<sup>1</sup>e mail [wendy.cawthorne@geolsoc.org.uk](mailto:wendy.cawthorne@geolsoc.org.uk)



ca1811 - ca1859



1860 - 1874



ca1874 - ca1882



ca1883 - ca1909



ca1889 - ca1897



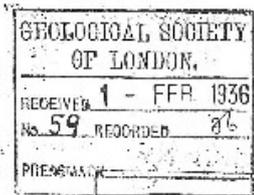
ca1903 - ca1939



ca1909 - ca1911



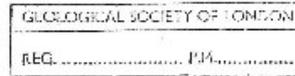
ca1900 - ca1930



1928 - 1953

GEOL. SOC. LONDON.

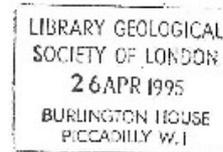
1950 -



1954 - 1970



1971 - 1985



1985 -

LIBRARY GEOLOGICAL SOCIETY OF LONDON BURLINGTON HOUSE PICCADILLY LONDON W1V 0JU

1989 -

GEOLOGICAL SOCIETY LIBRARY BURLINGTON HOUSE PICCADILLY LONDON W1V 0JU

1992 -

New HOGG committee member Tim Carter<sup>1</sup> and Anne Spurgeon were lunching with friends, one of whom, Chris Bates, told them about the name of the engine running on The Lincolnshire Coast Light Railway (LCLR) where he is an active member. This led to a rich seam of geological names for industrial engines so Tim asked Chris, who was a BBC and newspaper journalist, if he would write about them for the HOGG newsletter; here is his article.

### **JURASSIC: TEACHING GEOLOGY SINCE 1903** **Chris Bates**

How does a diminutive steam engine 117 years old introduce people to the basics of geology? Well, let it carry a name from a geological period—*Jurassic*, for instance. That's the name of the first of six elegant and long-chimneyed steam engines built for Kaye and Company's cement works at Southam in Warwickshire, by Peckett and Sons of Bristol. When delivered to their 2' gauge system to haul trucks of limestone to their cement works in 1903, it was the second loco to carry the name. The nearby Nelson's works had bought a similar but smaller version in 1901 to run on their narrower, 1' 9" gauge tracks. Yes, it did cause confusion!

The Southam *Jurassic* ran until 1956, when road transport took over. Three of her six siblings had survived to be sold into preservation and they still exist: *Liassic* (running at the Stafold Barn Railway near Tamworth), *Triassic* (Bala Lake Railway), *Mesozoic* (in bits at the Bromyard Light Railway).

*Jurassic* steams along the Lincolnshire Coast Light Railway in the Skegness Water Leisure Park, where she was restored with the help of a Lottery Heritage grant of £43,600 to educate people in how narrow gauge railways enabled industry and agriculture to move goods—and generally, how a steam locomotive works. The name is a show-stopper, given the popularity of the Jurassic films and the LCLR markets its services as “*Jurassic in the Park*”. Children and adults ask about the name and it introduces them to geology, as do interpretation boards on the station. More than ever, *Jurassic* and her highly polished nameplate still ignite a fascination with geology.



Image © Dave Enefer LCLR.

Return fares for a ride behind her are just £1; she operates in 2020 on Saturdays 4th July, then 18th July through to 5th September, Sundays 30th August and 20th September. A heritage diesel operates Wednesday services in August. More on [www.lclr.co.uk](http://www.lclr.co.uk) and [www.southamheritage.org/2016/07/12/jurassic-the-last-surviving-quarry-engine](http://www.southamheritage.org/2016/07/12/jurassic-the-last-surviving-quarry-engine); or call the Park on 01754 899400. Volunteers are always needed to help run the railway and to work with *Jurassic*!

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<sup>1</sup> e mail [jtimc@icloud.com](mailto:jtimc@icloud.com)

## OTHER FUTURE MEETINGS AND EVENTS



### 45TH INHIGEO SYMPOSIUM

NEW DELHI, INDIA (in association with the 36th International Geological Congress)

2nd–8th March 2020

The Symposium will be part of Theme 1 Geoscience for Society.

#### 1.6 The History of Geology and the Dissemination of Geological Knowledge organized by

Barry Cooper [barry.cooper@unisa.edu.au](mailto:barry.cooper@unisa.edu.au) (Australia)

Marianne Klemun [marianne.klemun@univie.ac.at](mailto:marianne.klemun@univie.ac.at) (Austria)

Abstracts are invited on

- i) Dissemination of geological knowledge including networking, collecting, accumulating and printing
- ii) Evolution of handbooks and textbooks
- iii) Legacy of a continent in contributing to the history of geology
- iv) Development of geological concepts
- v) History of mining or mineralogy
- vi) Understanding fossils and stratigraphy
- vii) Understanding of landscapes
- viii) Understanding of volcanoes and earthquakes
- ix) Relevance of historical understanding in geology.

Visit <https://www.36igc.org/> and Go to “Science Program”

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#### Future INHIGEO symposia

2021 46th INHIGEO Symposium, Krakow, Poland, 18th–24th July

2022 47th INHIGEO Symposium, ?Russia

2023 48th INHIGEO Symposium, location to be decided

2024 49th INHIGEO Symposium, South Korea (in association with 37th IGC)

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#### GEOLOGISTS' ASSOCIATION

#### LECTURE MEETING

Lecture Theatre, Burlington House, Piccadilly, London W1J 0DU

3rd April 2020 6.00 pm (tea at 5.30pm)

***“Pills and Politics”*: a new look at George Bellas Greenough and his Geological Map of 1820**  
Prof. Hugh Torrens

Non-GA members are very welcome to attend but please telephone (020 7434 9298) or email ([sarah@geologistsassociation.org.uk](mailto:sarah@geologistsassociation.org.uk)), the GA Executive Secretary, to book a place.

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**GEOPOETRY 2020**  
**Thursday 1st October 2020**  
**Scottish Poetry Library, 5 Crichton's Close, Edinburgh EH8 8DT**  
**and environs**

Geopoetry 2020 will bring together poets and geoscientists to celebrate poetry drawn from where the Earth, rocks and society meet.

Following on from the Geological Society's first Geopoetry day in 2011, this meeting will be held on National Poetry Day, hosted by the Geological Society (in conjunction with the Central Scotland Group), the Scottish Poetry Library and the Edinburgh Geological Society.

### **Call for contributions**

The organisers of GeoPoetry2020 are seeking contributions which will form the basis of a programme of talks, walks, readings and workshops, and ultimately a publication, in the following areas:

- Geo-themes: poetry about rocks, geologists, geological sites
- Geo-images: poetry that uses earth and ocean images
- Geology and society: poetry drawn from earth and society interaction
- Geoscience and the poetic form: Geopoets' influences, inspirations, histories

Please use the form at <https://www.geolsoc.org.uk/geopoetry20> to submit your contribution, and email to [michael.mckimm@geolsoc.org.uk](mailto:michael.mckimm@geolsoc.org.uk) by **Sunday 1st March 2020**.



**WILLIAM SMITH MEETING 2020**  
**Burlington House, Piccadilly, London W1J 0DU**  
**6th–8th October 2020**

### **GEOLOGICAL MAPPING: OF OUR WORLD AND OTHERS**

This three-day conference is a celebration of geological mapping, its historical importance, the deductive reasoning embedded with it, and its use to gain knowledge of the evolution and processes both on Earth and on planetary bodies at large.

Oral and poster abstract submissions for the meeting are invited. These should be sent in a Word document to [conference@geolsoc.org.uk](mailto:conference@geolsoc.org.uk) by 30th April 2020. Abstracts should be approximately 250 words and include a title and acknowledgement of authors and their affiliations.

For further information, contact

Conference Office, The Geological Society, Burlington House, Piccadilly, London W1J 0BG  
Tel. 0207 434 9944

Email [conference@geolsoc.org.uk](mailto:conference@geolsoc.org.uk)

Web: <https://www.geolsoc.org.uk/wsmith20>

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**GREENOUGH MAP BICENTENARY MEETING  
6th–7th May 2020**

**REGISTRATION FORM**

**Name:**

**Address:**

**Tel.**

**Email**

**HOGG member.....YES / NO**

**UCL alumnus/a.....YES / NO**

**Conference Day (May 6th) only (at UCL)**

HOGG members and UCL alumni @ £35.00..... \_\_\_\_\_

Non-members @ £45.00 (includes HOGG membership for remainder of year).. \_\_\_\_\_

**Viewing Day (May 7th) only (at GS and UCL)**

HOGG members and UCL alumni @ £35.00..... \_\_\_\_\_

Non-members @ £45.00 (includes HOGG membership for remainder of year) \_\_\_\_\_

**Both days (excluding Bicentenary Dinner)**

HOGG members and UCL alumni @ £65.00..... \_\_\_\_\_

Non-members @ £80.00 (includes HOGG membership for remainder of year) \_\_\_\_\_

**Bicentenary Dinner excluding wine (May 6th at UCL)**

‘Standard’ Menu @ £37.00..... \_\_\_\_\_

Salad of duck breast with orange, pine kernels & shoots

Roast line-caught cod, wild mushroom orzo & langoustine sauce

White chocolate & stem ginger cheesecake

Vegetarian Menu @ £37.00..... \_\_\_\_\_

Chilli roasted halloumi with watermelon & mizuna & balsamic dressing

Autumn vegetable crumble, parmesan roasted potatoes & hispi cabbage

White chocolate & stem ginger cheesecake

*For special dietary requirements (including allergies),  
please email details to [ian.wood@ucl.ac.uk](mailto:ian.wood@ucl.ac.uk)*

TOTAL £ \_\_\_\_\_

*Please send completed form and cheque (payable to HOGG) to  
Peter Riches (HOGG Treasurer)  
3A Albemarle Road, Norwich, Norfolk NR2 2DF*

**HOGG WEEKEND FIELD MEETING  
EDWARD GREENLY AND THE GEOLOGY OF ANGLESEY  
21st–23rd August 2020**

Registration by post

Please supply the following contact details and send to  
Duncan Hawley (HOGG), 73 Marlcliffe Road, Sheffield S6 4AH.

Full booking and other details will be sent to you when they become available.

NAME:

ADDRESS (including postcode):

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**HOGG ANNUAL SUBSCRIPTIONS**

**Payment by standing order** saves HOGG’s resources so, if you are willing to make future payments by this means, please complete the form below *ensuring your mandate gives instructions for the appropriate amount.*

**HOGG STANDING ORDER MANDATE**

Name of bank or building society.....

Branch address.....

.....

.....

Sort code.....Account number.....

Account name.....

Please pay the amount of £15 (fifteen pounds) / £5 (five pounds) (*please delete as appropriate*) to the History of Geology Group of the Geological Society (Santander Business Account, Sort code \_\_\_\_ - \_\_\_\_ - \_\_\_\_ Account number \_\_\_\_\_) on 1st January (or closest date thereto) following the date of this instruction and annually thereafter until terminated by me in writing. [NB *Account details will be inserted by the HOGG Treasurer.*]

Signed.....Date.....

**PLEASE SEND THE COMPLETED MANDATE TO**

**Peter Riches (HOGG Treasurer)**  
**3A Albemarle Road**  
**Norwich**  
**Norfolk**  
**NR2 2DF**