



EDINBURGH GEOLOGICAL SOCIETY

Promoting public interest in geology and the advancement of geological knowledge

Autumn Newsletter 2020

It is a great pleasure to introduce my first newsletter as President of the Edinburgh Geological Society. While it is a shame that we cannot meet together, you will see that EGS is adapting to the times.

I'm back at work in the lab at the Grant Institute after more than four months away. I soon realised that it really wasn't that different to what I have at home, and that actually there is an awful lot we can do from home, in pursuit of our interests. I've gained a new appreciation of the rich and varied geology in my local neighbourhood. I can stroll for 15 minutes and find a coal seam that hasn't been mined out. Through some geology googling, I discovered that not only do I have 1m thick coal seam 11m under my house, but there are Carboniferous vertebrates there too! I encourage all to explore the hidden corners of their local neighbourhood for geological gems, build a home lab in their kitchen, do some geology and share it with everyone.

That said, we cannot deny that the way we interact as a society has seismically shifted. Our AGM, the final

lecture and all our summer excursions were cancelled. We have a limited replacement excursion programme planned for the autumn, conditions permitting. Our winter lecture programme will be online using Zoom. There are advantages to this approach in terms of accessibility and geographical reach, but the social side for which we still yearn will have to put on hold for a bit longer.

It is not all doom and gloom however! The Scottish Geology Festival promises a feast of geological-related events. And EGS is in good health with a record-breaking 627 members, up by more than 100 from 10 years ago, and a tribute to the hard work of everyone involved in running the Society.

Tom Challands, EGS President,
president@edinburghgeolsoc.org



A longer version of this article, including links to online resources, is available in the News section of the EGS website.

The Nigel Trewin Memorial Lecture **Chip Shops and Drain Cleaners: the Weird World of the Triassic**

Friday 25 September, 5pm

Dr Nick Fraser, Head of the Department of Natural Sciences, National Museums Scotland

The Triassic is notorious for some of the strangest vertebrates ever to have lived. Fossil assemblages around the world exhibit incredibly different types of fauna both in the terrestrial and marine realms. What brought about this remarkable diversity and why is it particularly relevant to our understanding of today's terrestrial ecosystems? Nick Fraser will attempt to provide some insights into a range of very different Triassic assemblages from around the world.

The Friends of Hugh Miller and the Edinburgh Geological Society are delighted to host the 2nd Nigel Trewin Memorial Lecture, in memory of Professor Trewin's many contributions to understanding the geology of Scotland.



Atopodentatus, an extinct marine reptile from the Triassic.
Photo: Nick Fraser

To access the lecture, email promotion@edinburghgeolsoc.org for the link.

www.edinburghgeolsoc.org/trewin-memorial-lecture-2020



GEOPOETRY 2020
— Edinburgh —

Thursday 1 October **Geopoetry 2020**

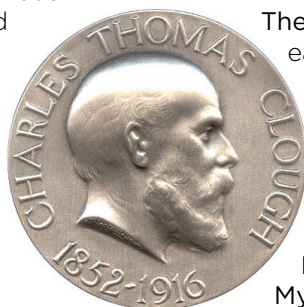
This gathering, on National Poetry Day, celebrates how geology has inspired poets in the past and present and will bring together poets and geologists to "encourage the rocks to speak". Organised by the Geological Society, the Scottish Poetry Library and EGS, the event is now being held online. The programme includes talks and readings from a range of poets, some of the winning entries from the Hugh Miller Writing Competition, and John Hegley as the headline act. Further details and registration at www.geolsoc.org.uk/geopoetry20.

Clough Medal, Grants and Awards

The Society recognises excellence in geology by making two prestigious awards, the Clough Medal and the Clough Memorial Award, and supports geological fieldwork with small grants from the Clough and Mykura Funds. Nominations for the Clough Medal and Clough Memorial Award for 2021-22 and applications for fieldwork grants from the Clough and Mykura Funds are invited by **31 March 2021**. Full details are on our website at edinburghgeolsoc.org/home/grants-and-awards/.

The Clough Medal is the Society's premier award, presented to a geologist whose original work has materially increased the knowledge of the geology of Scotland and/or the north of England, or any geologist working in Scotland or the north of England who has significantly advanced the knowledge of any aspect of geology. The Clough Medal for 2020-21 will be awarded to Dr **Anthony Maxwell (Tony) Spencer** in recognition of his contribution to the international understanding of ancient glaciations through his ground-breaking work on the Port Askaig Formation over the last 50 years, which laid the foundations for the "Snowball Earth" model. He has encouraged and supported numerous PhD students to develop projects in this field, even while pursuing his own long career in the oil industry,

and now in retirement he remains active in guiding international efforts to understand global climate perturbations. Tony will give the Clough Medal lecture on 17th February.



The Clough Memorial Award is given to an early-career geologist, normally under 35 years old, whose research on some aspect of the geology of Scotland or the north of England is considered as having outstanding merit. It is awarded biennially in odd years.

Fieldwork Grants from the Clough and Mykura Funds are normally of the order of a few hundred pounds, and support geological field work at home or abroad. Five grants were offered this year but due to restrictions on fieldwork only three are able to go ahead.

The Society also makes Project Grants to support projects that encourage public interest in geology or advance geological knowledge. Applications may be from organisations or individuals, and requests of up to £1,000 will be considered. Applications must be made by email using the form available online. The next submission deadline for Project Grants is **31 October 2020**.

Autumn Excursions and the Scottish Geology Festival

EGS members will be disappointed that the Coronavirus pandemic caused the cancellation of our normal summer excursion programme. We are arranging a limited replacement programme during September and October, for our members and as our contribution to the Scottish Geology Festival.

Numbers will be strictly limited, and we ask that members book for only 1 or 2 excursions in the first instance until we gauge likely demand. The excursions will be short (2-4 hours) and at locations where there is plenty car parking. No coach is provided and car sharing is not recommended. Please read and take note of the Code of Conduct & Safety Guidelines.

It may not be possible to run these excursions. Even if they go ahead, they are likely to be fully booked. Some leaders will do short online introductions, using Zoom. You can then go and visit on your own or with friends.

Check the website for up-to-date details before each excursion: www.edinburghgeolsoc.org/excursions/.

Wednesday 16 September 2-4pm
Blackford Hill, Edinburgh. Leader: Richard Smith
Volcanic rocks from the Devonian Period.

Sunday 20 September, 10am-1pm
Salisbury Crags, Holyrood Park. Leader: Angus Miller
A sill of dolerite, intruded into sandstone.

Wednesday 23 September 1-4pm
Wardie Shore, Edinburgh. Leader: Tom Challands
Carboniferous sedimentary rocks that have been popular with palaeontologists for almost 200 years.

25-27 September 2020
Weekend Excursion to the Ballantrae Complex, Ayrshire. Leader: Prof. Alastair Robertson, University of Edinburgh
Oceanic rocks from the early Ordovician Period, c. 470 million years ago.

Saturday 26 September 10am-2pm
Siccar Point. Leader: Bob Gatliff
James Hutton's famous unconformity between two contrasting sets of sedimentary rocks.

Wednesday 30 September 1-4pm
Dalkeith Buildings. Leader: Tom Challands
A range of sandstones with interesting sedimentary features.

Saturday 3 October, 10am-1pm
Whinny Hill, Holyrood Park. Leader: Angus Miller
Lava flows from the Arthur's Seat volcano.

Saturday 10 October, 10am-2pm
Kinghorn to Seafeld, Fife. Leader: Ian Kearsley
Lava flows and sedimentary rocks from the Carboniferous Period.

Sunday 18 October, 10:30am-1pm
Joppa Shore, Edinburgh. Leader: Bob Gatliff
Well-exposed set of sedimentary rocks deposited during the Carboniferous Period.

The Scottish Geology Festival runs from 12 September to 31 October with a range of excursions and online events. Full details at www.scottishgeologytrust.org/scottish-geology-festival-2020/.

Evening Lecture Programme 2020-2021

Our varied programme of illustrated lectures runs from October to Easter, on Wednesday evenings. These meetings are open to the public, there is no charge, and visitors are most welcome. This year, due to the ongoing Coronavirus pandemic, the lectures will be held online using Zoom. We appreciate that this will not suit some members. If you can't use Zoom, perhaps you can visit a friend who has the right technology, and join the lecture with them?

It may be possible to start meeting for lectures at the Grant Institute again in the New Year. Details will be posted on our website and sent out to members via the EGS News email group. However, even if physical meetings restart, we will continue to broadcast all lectures using Zoom. Information about the lectures, including more detailed abstracts where available, from edinburghgeolsoc.org/lectures.

To access the lecture, email promotion@edinburghgeolsoc.org for the link.

Graham Leslie, Lectures Secretary agle@bgs.ac.uk

2020

Wednesday 14 October, 7pm

Dave McCarthy, BGS Marine

The geological controversies of the Falklands Plateau

Despite the Falklands Plateau's significance as a crustal structure, our knowledge of the plateau is severely limited. Many of the findings from geological and geophysical studies are widely debated. This discussion will provide an overview of the main controversies including: the role of the plateau in the break-up of Gondwana; its crustal composition; and whether it is home to one of the largest impact craters on the planet.

Wednesday 28 October, 7pm

Andy Mitten, BDRG, Keele University

Delta tops and succession hops: the Clackmannan Group, Midland Valley, Scotland

Deltaic successions are synonymous with sequence stratigraphical surfaces (succession hops). We present data from the Carboniferous Clackmannan Group of the Midland Valley, where sedimentary log data, three-dimensional photogrammetric modelling and borehole correlations reveal the depositional history. However, the question still remains: what controls the succession hops seen on our delta tops?



Carboniferous delta successions at Spirelack. Photo: BGS

Wednesday 11 November, 7pm

Alasdair Murphy, University of St Andrews and colleagues

Exploring Southern Greenland's magmatic past: new perspectives from the giant dykes on Tuttutooq

Rift related, alkaline magmatism exposed in the Gardar province has contributed greatly to geology, petrology and mineralogy for over 100 years. The unique nature of these rocks leaves much to be discovered and, with

economic interest growing in the area, this is becoming ever more important. As undergraduate students, we organised an expedition to map features on the island of Tuttutooq which promise to help unravel aspects of Southern Greenland's magmatic past.

Wednesday 25 November, 7pm

Graham Leslie, BGS Edinburgh

A Caledonian cruise across Iapetus on Anglesey

A century after publication of Edward Greenly's original mapping, BGS has produced a new tectono-stratigraphic synthesis of Anglesey and adjacent parts of NW Wales. This reveals a comprehensive record of the Appalachian-Caledonian 'Wilson Cycle'. How did Anglesey migrate from Gondwana to Laurentia, across Iapetus? By the shortest crossing, or on a cruise with several ports en route?! This talk will examine the geological way-markers left behind.

Wednesday 9 December, 7 pm

Fellows' Night

This meeting, close to the anniversary of the foundation of the Society, is an informal meeting with a series of short talks given by members. If you would like to contribute, please get in touch with Chris Lofthouse on fellowsnight@edinburghgeolsoc.org.

2021

Wednesday 6 January, 7pm

Lucy McKay, Strathclyde University

Core Surprise: What's Inside a Plate Boundary Fault in Scotland

Digging to expose the Highland Boundary Fault core near Stonehaven has revealed a remarkable sequence of clay and microfossils 'inside' this ancient plate boundary fault. Surprisingly, the fault core consists of four distinct clay-rich units. The internal structure has similarities with active plate boundary faults like the San Andreas. This talk will provide an overview of these surprising discoveries and discuss their implications for understanding earthquakes at plate boundary faults.

Wednesday 20 January, 7pm

Charlie King, Scotgold, Cononish

Gold: Exploring Scotland's Untapped Potential

As the Cononish Gold Mine is brought into production, the question arises- what's next? This presentation will cover some of the challenges an exploration geologist faces when searching for elusive precious metal deposits in Scotland, how we overcome these challenges and what the future may hold for a Scottish gold mining industry.

Wednesday 3 February, 7pm

MIS/EGS Joint lecture: Alison Monaghan, BGS Edinburgh

Drilling into mines for heat: the UK Geoenergy Observatory in Glasgow

Net-zero carbon targets require significant progress in the decarbonisation of heat. Warm water in flooded, abandoned coal mines offers substantial opportunities, using technology that is proved, but not widely realised. The UK Geoenergy Observatory in Glasgow is an at-scale 'underground laboratory' of 12 boreholes, surface monitoring equipment and open data for investigating shallow, low-temperature mine water heat energy, heat storage resources and environmental change. This talk will focus on drilling into the mine workings, hydrogeological testing of the resource and environmental monitoring.

Wednesday 17 February, 7pm

Clough Medal Lecture: Anthony M. Spencer

The Port Askaig Formation in Argyll: uncovering the evidence for repeated climatic changes in a Cryogenian glacial sequence

The Port Askaig Formation (PAF) in the Garvellach Islands and Islay is ~1100m thick and includes 47 diamictites. Many were deposited by grounded ice; a few were ice-rafted. The PAF records 76 climatically-related episodes. Amongst Cryogenian glacial successions, the PAF is exceptional in its combination of: formation thickness; the number of climatically-related episodes; the thickness of its host Supergroup. PAF studies started with MacCulloch (1819); Thomson (1871) proposed a

glacial origin; Pitcher and Shackleton (1961) measured the strata in the Garvellachs, leading to my 1971 Memoir; a large team is now preparing a new Memoir.

Tony Spencer on the Garvellach Islands.



Wednesday 3 March, 7pm

Michael Brookfield, University of Massachusetts at Boston.

Dating the earliest land biotas – Scotland was the first!

Wednesday 17 March, AGM 7pm, Lecture 7.30pm

Heather Stewart, BGS Edinburgh

Ocean trench geology

Apologies, the details for the final two lectures were not confirmed at the time of print. These will be posted on the EGS website as soon as they are available.

Lothian and Borders GeoConservation Volunteer Group will have online meetings this winter, at 7.00pm on Wednesdays 7 October, 4 November, 2 December, 13 January, 10 February, 10 March. All welcome, contact Angus Miller promotion@edinburghgeolsoc.org for details.

Membership Subscriptions

Our subscription rates are increasing. One reason this has not happened until now is the administrative burden it places on hard-pressed volunteers! You can help by cancelling any standing order to EGS, and setting up a new online direct debit via WebCollect. Senior Fellows may wish to support the Society by reverting to Ordinary membership; the reduced senior rate was originally connected to the costs of producing and distributing the Scottish Journal of Geology, and a 50% reduction is now harder to justify. Ordinary Fellows can now choose if they want to get the Journal through the post, or just have online access. If you have any questions, don't hesitate to get in touch with Angus Miller.

The new subscription rates are:

- **Ordinary Fellow:** £25 per year.
- **Family Fellow:** £12.50 per year. One other adult living at the same address as an Ordinary Fellow.
- **Senior Fellow:** £12.50 per year. An Ordinary Fellow aged over sixty. Senior Fellows do not receive the Scottish Journal of Geology.
- **Junior Associate:** Free (electronic mailing). Available to persons under 23 years of age at the beginning of the session, or undertaking full-time education during the session.
- **Glasgow Associate:** £12.50 per year. Ordinary members of the Glasgow Geological Society.

The Edinburgh Geologist

The new editor would like to point out errors in the names of two of the contributors. I am very grateful to George Strachan and Lord Ian Duncan of Springbank for their tolerance of my mistakes. They are corrected in the online edition.

Robert Gatliff

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The Edinburgh Geological Society is a friendly and informal organisation with a wide range of members of varied backgrounds and interests, united in an interest in rocks and the science of the Earth. This newsletter is published in September and March, with details of our lectures and excursions programme.

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