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|  | **THE HIGHLAND GEOLOGICAL SOCIETY**Scottish Charity No. SC004427 |

**March 2022**

Dear Members,

As spring approaches and the Covid situation slowly improves we can, at last, look forward to a full field trip programme and we hope after two years of frustration our trips will benefit from renewed enthusiasm as we all get to grips with real rocks and not their Zoom and PowerPoint equivalents!

Good news, we’ve two new committee members to help organise HGS activities: Kathryn Logan and Karen Deans. Kathryn was elected to the committee at our recent AGM, having previously agreed to help us in this way, and Karen volunteered to join the committee in response to Alan Thompson’s recent circular. She has been co-opted as a member of the committee and will serve as such until the next AGM when she will be able to stand for election along with all the other committee members. Welcome Kathryn and Karen.

As you’ll know we’ve enjoyed a full winter programme of Zoom talks and thank you to Dr Steven Andrews, Dr Heather Handley, Dr Rachel Wignall, Alison Tymon, Andy Moffat (two talks) and Eilidh Milne for their efforts in delivering talks for the enjoyment of HGS and Aberdeen Geological Society members over the last few months. Thanks too to the AGS for having allowed our members to listen to their talks. The theme of collaboration with the AGS continues this year with a shared field trip to the Moray Coast in early August (details below).

We have one remaining talk of the winter season, to be held on Zoom commencing 1930:

**Wed 16th March**, Dr Tim Lawson; Glaciation and paleoenvironmental reconstruction in Assynt and Coigach

The talk will discuss the main evidence for glaciation across the Assynt/Coigach area – erosional landforms, distribution of erratics, etc – to establish the patterns of ice flow of the last Scottish ice sheet and a subsequent, short-lived glacial advance. The chronology of ice build-up and decay will be examined in the light of uranium-series dates on calcite speleothems from the Assynt caves and radiocarbon dates on various organic material which together conflict with the currently accepted chronology. The patchwork of evidence for the developing Holocene/Postglacial environment will be touched upon if time permits.

Dr Tim Lawson has spent the best part of 40 years working on an understanding of the evolution of the landscape of the Assynt and Coigach area that straddles the Sutherland/Wester Ross boundary. He has published widely on aspects of the glaciation of this area and the evolution of the caves in the Assynt Cambro-Ordovician dolostone, and the deposits they contain.

**Field trips 2022**

A brief resumé of our 2022 field trips is as follows:

Sat 14th May: Ullapool Thrust - Alan Thompson, HGS and Pete Harrison, NW Highlands Geopark (Combined HGS and NW Highlands Geopark event)

Wed 1st - Fri 10th June: Shetland HGS self-led excursion.

Sat 2nd July: Stack of Glencoul - Donald Fisher

Sat 6th Aug: Hopeman - Dave Longstaff, HGS (Combined HGS and Aberdeen Geological Society event)

Sun 7th Aug: Buckpool - Don Stewart, AGS (Combined HGS and Aberdeen Geological Society event)

Sat 27th - Mon 29th Aug: Fife coast. Dr Katie Strang, Scottish Geology Trust.

**Saturday 14th May 2022.  Exploration of the Ullapool Thrust - A joint field trip led by Alan Thompson (HGS) and Pete Harrison (NW Highlands Geopark).**

The Ullapool thrust is a minor thrust below the Moine thrust.  It and the associated rocks have been mapped in detail and are well exposed in an area about 3km NNE of Ullapool centre.  It is an opportunity to explore a small culmination in the Moine Thrust Zone, where there has been some imbrication and arching up of the overlying Moine rocks. The Assynt window is a culmination on a much larger scale. In this field trip we explore this most interesting area and attempt to identify all of the rocks and structures in this part of the Moine Thrust Zone.

We will meet in Ullapool and then drive (by minibus, small charge) to the study area.  It’s a full day outing, and from the parking place the main circuit around Craig nam Broc is about 6km.  There are few paths, and the terrain is rough, but walking is not difficult.  There is some (optional) scrambling.  Binoculars should be taken.

The trip is based on Excursion 5 from: Goodenough, Kathryn M. and Krabbendam, Maarten (Editors), ‘A geological excursion guide to the North-west Highlands of Scotland’, Edinburgh Geological Society, 2011, also available online.  The area was covered in the virtual field trip delivered by Alan to HGS in September 2021, link to recording available on request.

Numbers will be limited.  Please contact Alan (alanrossthompson@hotmail.com) to book a place.

**Wednesday 1st June - Friday 10th June 2022. Shetland, HGS self-led field trip.**

Brief details as follows:

Wed 1st June. Overnight ferry Aberdeen to Lerwick

Thurs 2nd - Thurs 9th June. Stay 7 nights at Voxter House Outdoor Centre, 1.5 miles north of Brae.

Thurs 9th June. Overnight ferry to Aberdeen, arriving on the morning of Fri 10th June

We plan to spend the first few days on the mainland and the final two or three days on Unst/Fetlar, weather permitting.

**Saturday 2nd July 2022.  Exploration of the MoineThrust at the Stack of Glencoul - Donald Fisher.**

The principal purpose of this excursion is to examine the exposure of the Moine Thrust at the base of the Stack of Glencoul where Moine mylonitic rocks are seen immediately above highly deformed quartz arenites of the Cambrian Pipe Rock Member.

The Reay Forest Estate has kindly agreed to provide boat transport from Kylesku to the head of Loch Glencoul and back. From the head of the loch there is a walk of about 2 km up the estate track (which in places is steep) followed by a short ascent over rough ground to the base of the Stack. The exact timing of the event and the location of the landing place will depend on the state of the tide. It is anticipated that the start time will be at about 9.30 am at Kylesku.

The number of participants will be limited, and priority will be given to those with confirmed places for the excursion to the Stack of Glencoul originally planned for 2020, provided that they confirm to Stephen Young (sstyoung84@gmail.com) not later than 18th March 2022 that they still wish to attend. Thereafter the event will be opened to members generally, all on a first come, first served basis, and a waiting list will be set up if need be.

Further details will follow in due course. It was originally envisaged in 2020 that this excursion would be combined with an excursion the following day to the exposure of the Glencoul Thrust above the south shore of Loch Glencoul. This will not now take place.

Donald Fisher is a Chartered Geologist (now retired) with two degrees from Glasgow University, where he studied the geology of the NorthWest Highlands in some detail. He was later appointed as the Geologist for the Highland Region of Scotland, prior to establishing his own geological consultancy and working throughout the UK. For several years, he was employed by Scottish Natural Heritage as their geo-guide at Knockan Crag. He has also led numerous geo-walks to various locations across the Highlands, for both geologists and the lay public alike.

**Saturday 6th August 2022. Hopeman - Dave Longstaff (HGS).**

Meet at Hopeman beach huts. At Hopeman harbour turn right along Beach Terrace travel for about 400m to NJ 1501 6985 1000, park at furthest carpark if possible.

Low tide is at 1244 local time.

Purpose of excursion: to examine features of the late Permian Hopeman Sandstone Formation.

Starting at the beach huts we can see relicts of aeolian barchan and proposed star dunes before examining a stretch of coastline exhibiting small faults, a range of soft sediment deformation features, fluvial and lacustrine sandstones, abandoned millstones and quarries, trace fossils and other sedimentary features. Expected time 2-3 hours.

If the weather is set fair we can have lunch in Cove Bay NJ 1594 7011 and also examine a well- studied fault zone, and post-glacial caves while in the cove.

After lunch we can visit Clashach Quarry to examine fossilised reptile footprints and glacial features before descending to the coast via a short path to visit an old sandstone quarry (1781) the old Clashach port, Jock Muldoon’s Cave and see some beautifully displayed sandstone cross- bedding. Expected time 2-3 hours.

Total distance to walk around 2-3 miles on footpaths (Moray Coastal Way) and coastal rock exposures.

**Sunday 7th August 2022. Buckpool - Don Stewart (AGS).**

Meet at open space parking or free on-street parking at NJ 4145 6545 on the A990 west of the old Buckpool harbour, now infilled and a park.

Purpose of the excursion is to examine the eastern margin of the Moray Old Red Sandstone, which is well exposed on the beach here, unconformably onlapping sub-vertical Dalradian metasediments, mapped in detail by Sinclair Ross in the 1980s.

There is a conspicuous window in the sandstone cover, revealing the underlying metasediments.

At this unconformity, there is a sequence of calcareous rocks, the Buckie Limestones. These are spectacular breccias in a pink matrix, in places exhibiting a stromatalitic structure.

There is much to discuss here starting with an unconformity which matches Hutton’s Unconformity in significance. The various limestone beds and a further higher unconformity may be examined, as indeed can the underlying Dalradian which is, in itself, enigmatic. Expected time 2-3 hours.

Lunch suggestion is to travel back west to Spey Bay, where there is a nice café at the Whale and Dolphin Centre, or plenty of outdoor picnic tables or spots. Also, plenty of free parking.

The afternoon can be spent on the shingle banks, where we can examine many of the effects noted by Sinclair Ross in his Pebble Beach’s paper. We can discuss pebble transports e.g., longshore drift, river and glacial transport. There are various enigmatic pebbles to stimulate discussion!

**Saturday 27th – Monday 29th August 2022.  A long weekend on the Fife Coast with Dr Katie Strang, Scottish Geology Trust**

Katie is a palaeontologist with a particular interest in the lower Carboniferous deposits around Fife.  As she says: “There's lots of good sites to look at, sedimentary material and the palaeontology, but also some incredible industrial heritage and lovely volcanics!”

Each day we have a centre from which we will walk and explore.  To start with we are based in the west of Fife, near the Forth crossings.

**Saturday 27th August.  Charlestown**

The first section will look at the industrial heritage and geology to the north and east of the village, and the second part will explore the southern (lower) part of the village including the historic limekilns. The seam of limestone that was vital to Charlestown’s success is known as the Blackhall Limestone (previously the Charlestown Main Limestone), and the mineralogy and geology of this deposit was of ultimate importance to its success as a building material. The Blackhall Limestone is situated stratigraphically in the middle of the Lower Limestone Formation, and at present day is exposed in a series of disused quarries and ‘stacks’ between Charlestown and Limekilns.

**Sunday 28th August.  Burntisland**

The first part of the excursion will look at the coastal geology west of Burntisland where sediments of the Pittenweem formation are exposed. We will also look at the associated volcanics and tuffs (Dinantian to early Westphalian sills of the Lothians and Fife) which outcrop, and sometimes yield nice agates! Access to the beach is over the sea defence which comprises a wall and large boulders and can be tricky underfoot. In Fife the lateral equivalents of the West Lothian Oil-Shale Formation are the Pittenweem, Sand Craig and Pathhead Formations which date from Asbian to Brigantian. The coastal section of the Pittenweem formation here is dominated by sandstones, lacustrine mudstone and siltstone and non-marine and marine limestones, coal, ironstone and algal-rich oil-shale beds.

The second part will focus on the Sandy Craig Formation, looking at old quarries to the north of the town. The route will go alongside Kilmundy and Grange quarry to look at the historic sandstone and limestone workings. There will also be an opportunity to walk over the Binn to look at the old Binnend village, part of the historic Oil-Shale Works. The Sandy Craig Formation contains the Burdiehouse limestone, which is the best known and most widespread of the limestones contained in the West Lothian Oil-Shale (it is also a useful stratigraphic marker). This rock has been heavily exploited for use in agriculture and industry due to its high carbonate content. The Burdiehouse contains a diverse fossil fauna including ostracods, fish, chondrichthyans, coprolites and plant material.

The route may be subject to change depending on landowner consent and ongoing works to repair local sea defences and railway line.

**Monday 29th August.  St Monans**

**T**his trip will focus on Carboniferous fluvial and deltaic sediments (Strathclyde Group), including the Pathhead and the Lower Limestone Formation sediments which are exposed in the St Monans Syncline. Sedimentary structures are well displayed along the coastal section, along with structural features.

**Future evening lectures for winter 2022/23.**

Preliminary details of talks are:

**5th October 2022** – Dr Jenny Bennett: Dr Eileen Hendriks

**16th November 2022** – Cindy Howells: Dinosaurs and Deserts in South Wales

**15th March 2023** – Professor Rob Strachan: North Sutherland Coast.

December 2022 and January and February 2023, tba.

**Miscellaneous, Geological Societies, Geological online resources:**

**NatureScot: Site condition monitoring of SSSIs**

Although very early in the proceedings, there may be a prospect of helping Rachel Wignall, NatureScot geologist, with monitoring geological SSSIs. No formal arrangements have been made but it is hoped that volunteers with geological knowledge could help to produce a simple report, possibly with photographs, on the condition of SSSIs. More details should emerge as the year progresses. <https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/site-condition-monitoring>

**Sinclair Ross archive**

The number of volunteers cataloguing Sinclair Ross’s archive has expanded in the last few months and we welcome Jim Ferguson, Andy Moffat and David Rae to our merry group and we are making great progress in our interesting task.

**Scottish Geology Festival**

The 2022 Scottish Geology Festival will be held from 1st Sept - 9th Oct 2022. Of course, it’s still very early for events to be listed but the website will give details as they emerge:

<https://www.scottishgeologytrust.org/festival/>

**The NW Highlands Geopark** latest news:

<https://mailchi.mp/84a2b4b6b12c/quinag-evolution-of-a-mountain-7995298?e=6845ae7839>

**Angus Miller Geowalks** website hosting details of talks and excursions: <https://www.geowalks.co.uk>

**Sedsonline** is an excellent source of lectures on all aspects of sedimentology: <https://sedsonline.com/>

**The Geologist’s Association** has put together an exhaustive list of resources:

<https://geologistsassociation.org.uk/sofageology/>

**Geological Society of London** lectures and library – see Library and Information Services and Events at [The Geological Society (geolsoc.org.uk)](https://www.geolsoc.org.uk/library)

**Aberdeen Geological Society**

<http://www.aberdeengeolsoc.org.uk/>

**Edinburgh Geological Society**

<https://www.edinburghgeolsoc.org/>

**Geological Society of Glasgow**

https://geologyglasgow.org.uk/

**Open University Geology Society**

<https://ougs.org/>

**Palaeocast Palaeontology Podcasts**:-

<https://www.palaeocast.com/category/mesozoic/>

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