**THE HIGHLAND GEOLOGICAL SOCIETY**

**Scottish Charity No. SC004427**

 **January 2020**

**Dear Members,**

Happy New Year to you all, and to welcome in the year please see our new newsletter which gives details of forthcoming events in 2020. We also have two book reviews prepared by Alan and David for your enjoyment.

Can I also gently remind you that subscriptions for 2020 are now due?  The majority of members have now paid (thank you!), and if you haven’t the details are in Alan’s recent email.  If you have any questions about this please contact him directly.

As regards membership cards, we will as in recent years only issue them on request.  They are only needed if you choose to use the HGS library.  Alan will take a set to the next meeting on 19th February.  If you need one before then, or you don’t plan to attend and would like one posted to you, please let Alan know.

**AGM and remaining lectures of the winter season**

19th Feb - AGM followed by *New research into the Elgin Reptiles,* Dave Longstaff, HGS

18th March - *Ross of Mull granite,* Dr Adam Zaniewski, University College, Cork

**Excursions 2020**

25/26th April Fossil Finder weekend Elgin Museum

2nd/3rd May Stack of Glencoul/Glencoul Thrust Donald Fisher/Peter Harrison

27th May-4th June Shetland HGS self-led trip.

July (date tbc) Laggan Hill Alan Thompson/Don Stewart

16th Aug Findhorn Dave Longstaff

12th Sept Portsoy/Boyne Limestone Quarry Prof Gordon Walkden

**19th February – AGM followed by *New research into the Elgin Reptiles,* Dave Longstaff, HGS**

Dr Davide Foffa (National Museum of Scotland) and postgraduate student Emily Keeble (Bristol University) have been working on recently made CT scans of some of the Elgin reptile fossils. Dave will talk about the Elgin Reptiles and describe the new findings.

**18th March - *Ross of Mull granite,* Dr** **Adam Zaniewski, University College, Cork**

**Macro to micro-scale insights into granite petrogenesis; a case study from the Caledonian Ross of Mull granite (ROMG), Argyllshire, Northwest Scotland**

The Ross of Mull Granite (ROMG) occupies the largest past of the Neoproterozoic inlier on the Ross of Mull peninsula. Re-mapping of the entire intrusion (Zaniewski *et al.* 2006) revealed complex zonation due to mafic-felsic magma interaction before intrusion along the probable intersection of the Sound of Iona and Great Glen Faults. Isotopic (Pb-Pb) analysis of feldspars showed that crystal chemistry also records changes due to magma mixing, allowing petrogenesis of the ROMG to be better understood at both the macro- (outcrop) and micro- (crystal) scales. Adam will discuss the importance of magma hybridisation during ROMG evolution and the timing of these events.

**25th Saturday, 26th Sunday April. Fossil Finders weekend at Elgin Museum.**

Not strictly an HGS event, but the Elgin Museum Geology Group is running a Fossil Finders weekend in April. The group has invited prominent palaeontologists from Glasgow and Edinburgh up to Elgin for the weekend. On the Saturday the *Elginerpeton* exhibition will be officially opened (as part of Scotland’s “Year of Coasts and Waters” programme). Visitors will be able to ask the experts to identify fossils they may have or just generally to discuss all matters relating to prehistoric life.

On the Sunday the group will be hosting two coach trips from Elgin to Clashach Quarry to look at Permian reptile footprint tracks.

<https://elginmuseum.org.uk/year-of-coast-and-waters-2020/>

**2nd May Saturday (Donald Fisher) and 3rd May Sunday (Peter Harrison). Stack of Glencoul and Glencoul Thrust.**

**BOOKING ESSENTIAL**

On the Saturday the Reay Forest Estate have kindly agreed to provide boat transport to Loch Beag at the head of Loch Glencoul whence we shall walk up the track in Glen Coul to examine the exposure of the Moine Thrust at the base of the Stack of Glencoul and various other localities thereabouts. The excursion will be led by Donald Fisher, a retired geologist and a director of Scourie Community Development Company. The day will begin with a short talk about plans to house the collection of rocks, minerals and fossils assembled by the late D R Shelley formerly on display at Golspie.

On the Sunday Pete Harrison of the North West Highlands Geopark will lead an excursion from near the car park at the north end of Loch na Gainmhich on the A894, starting in the foreland rocks in the Lewisian and working our way up through the succession via the uncomformity into the Diabaig, then the Cambrian, up into the imbricate zone immediately below the Glencoul Thrust and culminating in finding an exposure of the thrust itself above the south shore of Loch Glencoul (NC 259302).

Detailed plans for both days are still to be worked out, but in the meantime if you would like to come on either or both excursions please contact Stephen Young (sstyoung84@gmail.com)

**27th May/4th June, Shetland, self-led**

**BOOKING ESSENTIAL**

We have arranged budget accommodation by booking exclusive use of the Bridge End Centre hostel on the mainland of Shetland for four nights, 28th to 31st May inclusive, and then the whole of the Shackleton Lodge hostel on Unst for three nights, 1st to 3rd June inclusive. For those travelling to and from Shetland by sea this will mean travelling out overnight on the ferry from Aberdeen to Lerwick on 27th May and returning to Aberdeen from Lerwick overnight on 4th June.

The overall plan is to visit as many as possible of the principal localities of geological interest on the mainland of Shetland and on Fetlar and Unst. As in previous years we shall be going on a self-led basis. Since the long-awaited excursion guide to the geology of Shetland has still not been published, and it is uncertain when it will be published, we have decided just to go ahead with this excursion and to rely on the many sources of guidance to be found published in print and online.

Detailed plans and costs are still to be worked out, but in the meantime if you would like to come please contact Anne Cockroft (hgssec@gmail.com).

**July, date to be confirmed, Dulnain Bridge and Laggan**, **Don Stewart and Alan Thompson, HGS**

**August 16th, Sunday. Findhorn/Covesea - Dave Longstaff, HGS**

This field trip is heavily dependent on the Findhorn river levels on the date advertised. If water levels are high then many exposures will be hidden and access to exposures will be very difficult. In this event a coastal trip to Covesea and Hopeman will be substituted. If the river levels are low then the Findhorn valley in the area of Randolph’s Leap and Sluie exhibit beautiful exposures of Grampian Group Moine metasediments. By Sluie gorge we can see the fault zone where the Moine meets Old Red Sandstone and, downstream, the gorge displays stunning cross-sections of the Old Red rocks.

At Covesea cliffs we can see superb deformation features in Permian sandstones which can be compared to similar features near Hopeman. A trip to the Burghead fault zone can also be included.

**12th September, Saturday. Portsoy and Boyne Limestone Quarry - Prof Gordon Walkden**

Following his talk to us last October, Gordon has agreed to lead an excursion to examine the Dalradian metamorphic and igneous rocks at Portsoy (including the Portsoy marble – a serpentine once used by Louis XIV) and also to visit the nearby large Breedon quarry in the Boyne Limestone. A detailed outline of the plans for the day will follow.

**HGS, OTHER ITEMS OF INTEREST**

**Dr Tom Challands research video.**

Dr Tom Challands, University of Edinburgh, a specialist in fossil fish has been invited to give the Society a talk and this will take place on 13th January 2021. In the meantime his Youtube video, recently published, gives a flavour of his recent research projects.

<https://www.youtube.com/channel/UCVedLnMZg6RiZ8W6RY5QNFg>

**St Andrews, Port Askaig Tillite conference.**

HGS members who visited the tillite exposure on Islay may be interested to know that there is a two day conference at St Andrews University on the topic.

<https://onlineshop.st-andrews.ac.uk/conferences-and-events/events/earth-environmental-sciences/cryogenian-glaciation-the-extraordinary-port-askaig-record-and-its-comparators>

**Charles Lyell Notebooks**

Last year HGS donated a sum of money to the “Save Charles Lyell Notebooks” project and, in December, it was announced, that, indeed, the notebooks will be kept in Scotland and scanned for use by the general public.

<https://www.ed.ac.uk/giving/save-lyell-notebooks>

**Research paper on rock fall impact into wet sediments at Clachtoll**

<http://etheses.dur.ac.uk/13350/1/Killingback_MScR_thesis.pdf>

**The Scottish Geology Trust**

The trust will be launched in 2020 with a website promoting the organisation:-

<http://www.scottishgeologytrust.org/>

**Scottish Geoparks.**

The NW Highlands and Lochaber Geoparks are both offering geotours in their respective regions. Details can be found from the following links: -

**NW Highlands Geopark Geotours**

<https://mailchi.mp/e91e700f5ab8/geoutours-2840933?e=22b8c68ac2>

The NWH Geopark is also running a tour based on the 19th Century Highland Controversy – see <https://www.nwhgeopark.com/geotours-2020-the-highlands-controversy/> The tour will run from Sat 27th June to Thurs 2nd July inclusive. It is understood that there is now a waiting list for this tour, but experience has shown that vacancies can occur following late cancellations.

**Lochaber Geopark Geotours**

<https://lochabergeopark.org.uk/geotours/>

Other Scottish geological societies’ field trips can be accessed with these following links: -

**Edinburgh Geological Society field trips**

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

**Glasgow Geological Society field trips**

<https://geologyglasgow.org.uk/events/category/excursions/>

**Open University geology field trips**

<https://ougs.org/scotland/events/>>

**Book reviews**

The Dunedin Academic Press have sent us review copies of three of their recent publications, viz:

The Western Highlands of Scotland by Con Gillen, ISBN 9781780460796

Hutton’s Arse (2nd Edn) by Malcolm Rider and Peter Harrison, ISBN 9781780460406

Scotland’s Mountain Landscapes by Colin K Ballantyne, ISBN 9781780460932

Reviews by Alan Thompson and David Jarman of the first two of these books follow. It is hoped to include a review of Colin Ballantyne’s book in the next newsletter.

**The Western Highlands of Scotland**

The author has clearly spent a lifetime exploring and appreciating the geology of the Western Highlands, and he has a lot to share with the reader. The diverse geology of the chosen area is explained in a concise introduction and he then embarks on eight road journeys in which he covers 96 sites of geological interest (some with several sub-sites). That is certainly ambitious, and at first glance the book looks a rather like a tourist guide, but it is much more than that. His style is fast-paced, factual and commendably clear, without unnecessary detail, and aimed squarely at readers with knowledge of geology. Where appropriate he makes useful references to other geological guides and papers which offer more details of specific areas or excursions.

As an amateur geologist I know some parts of the area well, other less so. Of the sites I know, his choices are first class, many are not ‘just’ geological sites, but wonderful landscapes and idyllic places to visit. For his first locality (3.1a Ben Loyal) he notes ‘the views from Lochan Hakel are outstanding’. Absolutely correct, and I am inspired to visit the others! On the more well-known localities for example the parallel roads of Glen Roy (locality 7.7) he includes some history of the geological debate about the area, and even a mention of the Darwin’s Rest café (Lochaber Geopark).

The book includes an attractively presented map in each chapter (although I found the colour keys on the maps hard to follow), and grid references and practical notes on finding and accessing the locations. The area chosen excludes the Scottish Islands, but includes an area south east of the Great Glen in chapters 9 and 10, and is sufficiently large that a good OS map and gps will be needed. He includes some excellent photos, which I particularly appreciate as an amateur geologist not always able to identify a rock from its name.

The book has much of interest for any geologist visiting the area, whether a visitor to Scotland or a ‘local’ such as myself. It encourages me to explore more of the geology, and I would certainly see, enjoy, and learn more about it by taking this book with me.

Alan Thompson, January 2020

**Hutton’s Arse**

When this first came out in 2005, it was fresh and original and the most exciting work on Highland geology and landscape on the bookshop shelves. The opening chapter, revealing the dramatic canyon scenery of the Torridonian Unconformity around Scourie, was especially thrilling – and given an immediacy by the author’s own field mapping. It was then hardly known. At the other extreme of the timescale, a chapter on Highland glaciation took a very different perspective from tedious elaborations of ice limits and moraines, for example highlighting the still-largely ignored role of end-glacial meltwater outbreaks dissecting our mountainsides and glens with countless ravines and gorges (not least, carving the ravine and waterfall beside our house, in hard Black Isle sandstone, probably within a few days or even hours - a phenomenon it only took me three decades to ‘see’...).

Since then, several books have come on the Scottish geology-and-landscape market, thorough and well-illustrated, yet firmly in the ‘worthy but dull’ category, lacking Malcolm Rider’s story-telling verve and manifest love of subject. Hutton’s Arse has remained the book I have most often recommended to newcomers.

Reading it anew though in this Second Edition is a bit of a let-down.  The core material is virtually unchanged, with the occasional extra paragraph and picture marking some especially remarkable fresh discovery in the NW Highlands – notably the meteorite impact theory, also the glacial megagrooves. While it is no bad thing to keep a decent and idiosyncratic book in print, geoscience has moved on a long way in the new century. The useful ‘Further Reading’ after each chapter could have been more thoroughly updated to reflect this.

Some of the material has become rather redundant, where topics such as the Moine Thrust Controversy have entered the mainstream. Of more concern, some of the science is now superseded – thus in the ice age chapter, Fig. 5.11 still shows a glacial trimline with nunatak peaks like Ben More Assynt poking above the maximal icesheet. The relevant authors have now reinterpreted this trimline as an ‘englacial thermal boundary’ above which cold-based, inerosive ice covered all the mountains – no nunataks in the Highlands any more, sadly1.

Most regrettably, what might in 2005 have passed muster as a refreshingly contemporary perspective on climate change, with a sidelong critical eye on some of the simplistic solutions then current, now reads more like denial. It is true that the planet heated up 12000 years ago with terrifying rapidity. But given that virtually all serious geoscientists now agree that the similarly rapid heating today is predominantly man-made, indubitably catastrophic, and capable of managed limiting, the new publisher would have done authors and readers a service in gently suggesting that these extraneous remarks be excised. It doesn’t help that the original author is an oil exploration consultant (so by all means find it, but ‘leave it in the ground’ until it’s really needed!).

Malcolm Rider has shown us how attractively geoscience can be written – making the global local and the local global, with wit and verve and passion. But this is no longer the first book I would recommend, and we await the next good communicator to take the stories on. Oh, and the Arse bit – itself perhaps a trifle dated – is just Hutton complaining of being saddle-sore with all that fossicking about.

David Jarman, December 2019

1 See Colin Ballantyne’s valuable new book, also to be reviewed, at pages 60/61 and 159.

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