



THE HIGHLAND GEOLOGICAL SOCIETY

Scottish Charity No. SC004427

APRIL 2017

Dear Members,

Many thanks to everyone who supported Professor Iain Stewart's talk on 12 April; as anticipated we had a very enjoyable evening, with ~ 140 people attending the meeting. Iain highlighted aspects of Scotland's geological importance (e.g. the preservation of the earliest fossil ecosystem at Rhynie, dated at 407 Ma and the part that Scottish scientists such as Hutton, Geikie, Young and Croll have played in the development of geology and the wider concept of Earth system science. Iain finished the evening by drawing attention to the UN's Goals for Sustainable Development and the challenges and opportunities that these present to current (and future) geoscientists. The society is grateful to Iain for taking the time out of his busy schedule to join us and also to the family of Peter Webster whose kind donation gave us the confidence to plan such a large event. This season's lectures have now come to an end and will resume on 11 October (see below).

PLEASE SUPPORT OUR GEOPARKS!

As discussed at the AGM, we are trying to be more proactive in support of our local Geoparks. Jim Blair from Lochaber has agreed to run a day trip for us on 18 June (Arisaig) and Pete Harrison from the NW Highlands will run a weekend excursion for us 30 Sep – 1 Oct as part of their Geofestival. Please join us if you can (see details in the Summer Programme). The society has also donated £100 to the NW Highlands Geopark towards the running of the festival, delivery of which forms part of a European project funding application.

The latest newsletters from the Geoparks can be downloaded at:

Lochaber: <http://us8.campaign-archive1.com/?u=43a1f15a013539257b3fe906f&id=a1e981c1c4>

NW Highlands: <http://us8.campaign-archive1.com/?u=e014176b00be7e0f5efefa81d&id=21b2051a1b&e=22b8c68ac2>

In addition the NW Highlands Geopark is organising a *crowdfunding appeal* in order to raise £70,000 to keep the park open – see <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-39600900>.

There is more information at: <http://www.nwhgeopark.com/support-your-geopark/> or *to donate* go to: <http://www.crowdfunder.co.uk/love-the-geopark>

SUMMER PROGRAMME 2017

ISLAY 6 – 13 MAY – self led

Islay has been chosen on the basis that a very good field guide to the geology of the island has just been published, full of detailed descriptions and excellent colour photographs (see below). Outcrops of interest include the Rhinns Complex (an ancient island arc dated ~1800 Ma) and the Dalradian Port Askaig Tillites (evidence of a global glacial event). The Dalradian rocks on the island are not as intensely metamorphosed as elsewhere in Scotland, allowing many original sedimentary features to be determined, and excellent examples of stromatolites can also be found. Large dykes on the northern shore, dated ~ 55 Ma, are linked

to the opening of the North Atlantic and the island's Quaternary deposits show a variety of geomorphological features.

The group will be based in the Port Charlotte area, where there are various accommodation options available, including a youth hostel and a campsite for both tents and campervans on the edge of the village. This location means that most exposures can be reached within a 30 minute drive and that shared transport can be arranged.

Planning for the Islay trip is proceeding apace. Depending upon the exact circumstances it may be possible for one or two more people to join the group at this late stage. Anyone who wishes to do so should contact Ann Reynolds (annandpeterfarr@hotmail.com) to discuss arrangements for the week.

KNOYDART MICA MINE – Saturday 17 JUNE – Andy Moffat, HGS

8.45 am Meet at Western Isles Cruises, The Pier Office, Mallaig PH41 4DD

Following his talk in January, Andy has very kindly agreed to take the group to visit the mica mine on the Knoydart peninsular. We will travel by boat from Mallaig, climb up to the mine along the stalkers' track and return to Mallaig late afternoon. The cost of the boat will be £30-£40 depending on the number of participants. *To secure your place, please send Alison a cheque (payable to the Highland Geological Society) for £30 at time of booking* (electronic transfer also available – details on request).

If you would like to join the group for dinner at the Fishmarket Restaurant in Mallaig, please let Alison know as soon as possible.

RHUE PENINSULAR, ARISAIG – Sunday 18 JUNE – Jim Blair, Lochaber Geopark

9.30 am Meet at the Land, Sea and Island Centre, Arisaig, PH39 4NJ. There is only limited parking here so please park elsewhere on 'the street' and walk to the centre.

This will be a full day over rough ground, both coastal and cross-country, although nothing too steep; part of the excursion is on a raised beach/wave-cut rock platform. We will examine psammites and semi-pelites of the Moine Supergroup (Morar Group), looking for preserved sedimentary structures, and evidence (or not) of a thrust to the west of Rhue House. There are extensive dykes in the area, testing what is a dyke or cone sheet! Most are NNW-SSE Palaeogene basalt dykes but some are older Permo-Carboniferous camptonite-monchiquite dykes of the E-W Morar swarm. On the way back to Fort William, we will try to find time to stop at Am Muidhe, in the Glenfinnan Group Moine, a candidate for one of the 'Best 50 Geosites in Scotland' (in the top 100), due to interesting pegmatites and folding (see <http://lochabergeopark.org.uk/explore-lochaber/group-geotours/road-to-the-isles-itinerary/>).

A useful guide is *An Excursion Guide to the Moine Geology of the Northern Highlands of Scotland* edited by Rob Strachan, Ian Alsop, Clark Friend and Suzanne Miller. 2010. ISBN: 978-1-905267-33-0

SKYE – Saturday 2 – Monday 4 SEPTEMBER – Jim Ritchie, Speedwell Energy Ltd.

Jim Ritchie will lead this weekend excursion to Skye which will allow us to explore the UK's Atlantic Margin Petroleum System. Depositional environments, palaeogeography, reservoir and source rock development within the Jurassic sedimentary succession will be examined and the impact of Palaeogene volcanics on reservoir properties and source rock maturation will be observed. Intra-basalt reservoirs, which are hydrocarbon-bearing in the offshore Rosebank discovery, will also be studied. This promises to be an interesting weekend, focussing on aspects of the stratigraphy that we have not addressed on previous trips to the island. Detailed itinerary to follow but **hardhats will be required**.

We will be based at the Sligachan Bunkhouse – *a deposit of £30 per person is now required* to secure the accommodation, either payment by cheque (as for Knoydart) or by electronic transfer.

Saturday 2 September – meet 1 pm at the Aros Centre, Portree, IV51 9EU

Sunday 3 September – meet at 9.15 am at the Sligachan Hotel, IV47 8SW

Monday 4 September – meet at 8.30 am at the Sligachan Hotel (half-day excursion to Elgol)

We will eat in the hotel bar on Saturday and Sunday evening – please let me know if you wish to join the group for dinner.

NW HIGHLANDS 30 SEP – 1 OCT – Pete Harrison, NW Highlands Geopark

As discussed above, Pete has kindly offered this trip as part of the Geopark's 2017 Geofestival.

We will examine the Cambro-Ordovician succession in Assynt and its involvement in the Moine Thrust Zone. This will involve looking at the normal sequence at Loch Assynt and then considering how it has been structurally modified in Assynt on the Saturday and further south at Strath Canaird on the Sunday.

A useful guide is *A geological guide to the North-West Highlands of Scotland* edited by Kathryn M. Goodenough and Maarten Krabbendam. 2011. ISBN 978-1-905267-53-8

Please let Alison know if you would like to attend, either for the weekend or for either day as this will greatly assist planning. We may be able to use the centre's minibus, which would make site access easier.

Saturday 30 September - meet 9.30 am at the Macphail Centre, Ullapool

We will rationalise cars and then head north stopping briefly at Knockan Crag and then on to Loch Assynt. Most of the day will be spent at Loch Assynt to view the succession and establish the relationships with the underlying Torridonian and in the thrust zone. There may be an opportunity to visit the NWHG Rock Stop centre on Loch Glencoul.

Sunday 1 October- meet at 9.30 at the Macphail Centre, Ullapool

The day will be spent on a lesser known part of the Moine Thrust Zone up above Strath Canaird looking at a part of the Moine Thrust Zone. The site is accessible by a limited number of vehicles and has a good all round view. There will be an opportunity for those that wish (everyone!) to work out the relationships for themselves and to draw their own map. A base map will be provided.

WINTER PROGRAMME 2017 – 2018

11 October – *Scottish and Agate Creek Agate*, John Mackenzie, Earl of Cromartie

Scottish agate is some of the most beautiful in the world and John's talk will give some insight into their variety, whilst the well-known Agate Creek area of Northern Queensland has agates of a colour brilliance possibly unrivalled. The talk will include photos of agates from both regions as well as from various other localities.

8 November – *Drilling the Nankai Trough Accretionary Complex*, Dr Stephen Bowden, University of Aberdeen

The Nankai Trough Accretionary Complex is the most recent of a number of such complexes that have developed to the south-west of the Japanese island arc. In 2016, Stephen joined an international team of scientists on a leg of the Integrated Ocean Drilling Programme to further investigate the history of the complex and explore it for microbial life. Like many drill targets it was chosen on the back of good preparative work and was considered well-characterised; mud, more mud and mud. But what really happened was far more surprising. Come share the surprise..... A documentary about the project can be seen at: <https://www.youtube.com/watch?v=7-WgYZVYYWQ>

13 December – *Clay*, Professor Peter Scott, Peter W. Scott Ltd. and Camborne School of Mines, University of Exeter

Clay was one of the first of the Earth's mineral resources to be exploited by mankind. It has been extracted throughout history and remains an important raw material in the 21st Century. Clay has properties that are unique and not found in other rocks and minerals. The talk will describe the diverse types of clay that are found in the UK and elsewhere, their mineralogy, geological setting and origin. It will also explain why clay is unique and how the properties of the microscopic sized clay minerals control the wide range of uses of clay.

10 January – *Hydrogeology - water under the ground*, Dr John Heathcote, HGS

30% of the fresh water on the planet is groundwater, and 69.8% is ice. Most of the drinking water supply in southern England is from groundwater. Groundwater often features in civil engineering too - usually as a nuisance. Thus there's a whole branch of science that studies groundwater - it involves chemistry and maths as well as geology. The talk will cover the broad scope of hydrogeology, without too much chemistry and maths!

14 February – AGM followed by fieldtrip review and members evening – more details to follow!

Information for March and April 2018 will also be forthcoming.

OTHER DATES OF INTEREST:

8 May – *Geology of the Great Glen*, Professor Alasdair Skelton, Stockholm University.
7.00 pm Glen Urquhart Public Hall, Blairbeg, Drumnadrochit, IV63 6UG

9 – 10 September – Conference organised by the Friends of Hugh Miller *The Old Red: Hugh Miller's Geological Legacy*, Cromarty, Black Isle with possible field trip 11 – 13 September.

More information and application form for the conference at:

<http://www.thefriendsofhughmiller.org.uk/index.asp?pageid=661915>

CONTACT INFORMATION:

Chairman: Stephen Young 01349 864141

Secretary: Dr Alison Wright 01309 671949

Treasurer: Alan Thompson 01463 238992

sstyoun84@gmail.com

a.j.wright00@aberdeen.ac.uk

alanrossthompson@hotmail.com