



EDINBURGH GEOLOGICAL SOCIETY

Promoting public interest in geology and the advancement of geological knowledge

Spring Newsletter 2018

Welcome to the first edition of the newsletter for 2018. During the last few years, my role at the British Geological Survey (BGS) as Director of Marine Geoscience has kept me very busy, particularly with the move to the Lyell Centre at Heriot Watt. BGS is now established in the new accommodation and there is growing collaboration between the two organisations. I will be retiring from BGS at the end of March and look forward to making an enthusiastic contribution during my two years as the new President of the Edinburgh Geological Society.



The success of the Society depends on an active membership and an enthusiastic and dynamic Council. I am lucky to take over with the Society in excellent shape. Our past Presidents, Stuart Monro and Christine Thompson have led a Council where every member is making valuable contributions. We are now well into our five-year strategy, and the decision to have Angus Miller lead on developing the website, raising the profile of the Society with our members, the public and local and national government bodies has paid dividends. I look forward to getting to know more of our tremendous membership during the coming months.

Robert W Gatliff, EGS President, president@edinburghgeolsoc.org



A Summer of Geology!

We all know that Scotland's geology is incredible, and this is now being matched by a fantastic array of opportunities to explore it. The Society's expanded Excursion Programme (see inside pages) includes 15 different excursions across south central Scotland. Scotland's Geoparks are also bursting with activities this summer, including residential courses, walks and events.

There are also plenty of resources to help you explore independently, including the Society's range of 13 books and excursion guides. Last year the Scottish Geodiversity Forum published the list of the 51 Best Places to see Scotland's Geology with introductory descriptions written by experts and links to further information. So far, nobody has claimed to have visited all 51 places, so there's a challenge for you this summer. www.scottishgeology.com/best-places/

EGS events for the general public

Deep Time Walk 5, 6, 7 April A unique Science Festival event in Holyrood Park with the team behind the award-winning Deep Time Walk mobile app. Bring your friends and family along on this 4.6 km walk, 1 metre for every million years of Earth history, guided and entertained in a live performance by two characters – a scientist and a fool – in philosophical conversation about life, evolution and our place in the world. www.sciencefestival.co.uk/event-details/deep-time-walk

Earth Day at Dynamic Earth Sunday 22 April EGS will have a stall at this event, which will include drop-in activities for all ages.

East Lothian Countryside Ranger Service are running geological events at Barns Ness this summer, Fossils for beginners (adults only) on Saturday 3 March and Rock School (for families) on Wednesday 18 July. www.eastlothian.gov.uk/rangerevents

DATES FOR YOUR DIARY

5, 6, 7 April
Deep Time Walks at the Edinburgh International Science Festival

Sunday 22 April
Earth Day at Dynamic Earth

Wednesday 25 April, 7pm
Excursion: Ellen's Glen

Wednesday 9 May, 7pm
Excursion: Bonaly

Wednesday 23 May, 7pm
Excursion: Currie-Balerno

Sunday 27 May, 10am
Introductory Excursion: Arthur's Seat

Saturday 2 June, 9am
Excursion: Ardross-St Monans

Wednesday 6 June, 7pm
Excursion: Dalkeith Buildings

Saturday 16 June, 9am
Excursion: Coldingham

Sunday 17 June, 10.15am in Berwick
Excursion: Berwick

Wednesday 20 June, 7pm
Excursion: Calton Hill

Wednesday 27 June, 7pm
Excursion: Aberlady shore

Saturday 30 June, 9am
Excursion: Perth area

Saturday 14 July, 9am
Excursion: Duns

Saturday 28 July, 9am
Excursion: Eddleston Water

Saturday 18 August, 9am
Excursion: Dunbar to Belhaven

Saturday 1 September, 9am
Excursion: Tantallon

Saturday 8 September, 10am
Introductory Excursion: Siccar Point

14-17 September
Weekend Excursion: Lochaber Geopark

Excursion Programme 2018

At the core of our Excursions Programme are full-day excursions on Saturdays and shorter evening excursions on Wednesdays. The Excursions Programme is organised by Excursions Secretary Ian Kearsley, and each excursion is led by a geologist with expert knowledge of the locality. Visit the EGS website at www.edinburghgeolsoc.org/excursions/ for full details of each excursion, including route maps. Please read and take note of the Code of Conduct & Safety Guidelines.

You must book in advance for all excursions, as numbers are limited for safety reasons. Bookings are taken by Alison Tymon, email excursions@edinburghgeolsoc.org or phone 01289 305842 / 07831 637634. Bookings can also be made using the enclosed form or online at www.edinburghgeolsoc.org/excursions/booking. Please give your address and phone number, and a contact in case of an emergency (name, relationship and phone number). This information will only be used in connection with 2018 excursion bookings. Please notify Alison if you have booked an excursion and are not able to attend, to avoid disappointing others who may be on a waiting list.

Residential Excursions

12-19 May

Long Excursion to Cornwall

Professor Emeritus Peter Scott of the Camborne School of Mines, University of Exeter, and Dr Mike Styles of the British Geological Survey have kindly agreed to lead this trip, which is fully subscribed with a waiting list. To be added to the list, contact Anne Burgess, longexcursion@edinburghgeolsoc.org.

14-17 September

Weekend Excursion: Lochaber Geopark

Leader: Jim Blair

Lochaber Geopark has a stunning range of geology, and the weekend excursion will explore some of it in two half-day and two full-day excursions. On Friday afternoon we will visit the Ballachulish slate quarries and granite. Saturday will be spent at Strontian with an afternoon of Devonian sediments, Great Glen Fault intrusions, raised beach and the Ardgour dyke swarm. On Sunday we will visit Moine metamorphic rocks at Lochaline, and a range of sedimentary rocks from Permian to Jurassic. Monday morning will include Cuil Bay, Bailey's 'Tiger rock', and the Kentallen shore. Transport will be by private car, participants will arrange their own accommodation in the Strontian area. For further information and booking, contact Alison Tymon, details above.

Day Excursions

Saturday 2 June, 9am

Ardross-St Monans

Leader: Rosalind Newlands

The superb coastal exposures at St Monans demonstrate variety of Fife's Carboniferous geology, and include the Ardross Fault which is well known for the number of volcanic necks along its length. We shall look at a section of the fault between St. Monans and Elie, and at the relationships between the necks, the fault, associated folding, and the host Carboniferous sedimentary rocks in the Pathhead Formation of the Strathclyde Group.

Saturday 16 June, 9am

Coldingham

Leader: Emrys Phillips, BGS

This excursion will look at the Silurian rocks at Milldown Point and their relation to the adjacent Lower Devonian volcanic rocks: porphyrite and agglomerate. The Silurian rocks which crop out around Coldingham differ in character from those seen nearby and the main object of this excursion is to examine these rocks on the shore. We will view the volcanic vent at St. Abbs Haven and then consider the nature of the Coldingham Beds and

Linkim Beds at Milldown Point, their similarities or otherwise, and their relation to the volcanics. We will also visit Callercove Point to view the volcanic vent downfaulted against the Linkim Beds.

Sunday 17 June, 10.15am in Berwick

Berwick

Leader: Alison Tymon

We will examine good coastal exposures of cyclothem, deposited in river deltas, swamps and shallow sea close to the equator. The strata include coal, fireclay, limestone and sandstone, some containing fossils. We will also examine structural evidence for the Berwick Monocline and associated faults, formed during the Variscan Orogeny. Note: this excursion is repeated from 2017, as part of a weekend visit by Yorkshire Geological Society; EGS members are welcome to attend, but transport from Edinburgh is not provided.

Saturday 30 June, 9am

Perth area

Leader: Con Gillen

This joint excursion with the Geological Society of Glasgow will examine Devonian volcanic and sedimentary rocks (including the source of the Stone of Destiny?); and look at a variety of building stones in Perth City. We will visit Kinnoull Hill quarry, the Quarrymill Woodland Park, the River Tay at Scone and Perth city centre.

Saturday 14 July, 9am

Duns

Leaders: David Stephenson and Alison Tymon

The Whiteadder Water around Preston Bridge traverses the junction between the largely fluvial Upper Old Red Sandstone and the lagoonal Ballagan Formation. At the junction, which in this area is now thought to be very close to the Devonian - Carboniferous boundary, basaltic pyroclastic rocks and a lava constitute the most northerly outcrop of the Kelso Lavas. A large sill-like intrusion of very fresh basalt, probably associated with the Kelso Lavas, is exposed spectacularly in Borthwick Quarry.

Saturday 28 July, 9am

Eddleston Water and Talla catchments of the River Tweed

Leader: Clive Auton, BGS

This excursion will explore the role of glaciers, glacial meltwaters and post-glacial slope processes in creating and modifying parts of typical catchments of tributaries of the River Tweed. The Eddleston Water is a major southward flowing tributary and we will visit a typical lowland strath within the middle reaches of the valley examining some of the evidence for and against the former presence of an ice-dammed lake in the valley floor. The Talla Water valley represents the headwaters of

a typical minor upland tributary. The excursion will also visit hummocky moraines, evidence that suggests renewed glaciation during the Loch Lomond Stadial about 11,000 years ago.

Saturday 18 August, 9am

Dunbar to Belhaven

Leader: Fiona McGibbon

This excursion will examine the coastal rock sequences from the East Beach Dunbar to Belhaven Bay. We will encounter Devonian and Lower Carboniferous sedimentary rocks, and a range of extrusive and intrusive igneous rocks. We will see evidence for arid conditions and early land plants as well as lagoonal deposits of warmer times. The igneous rocks offer an array of field relations and textures from dykes to major vent structures. Several major faults are crossed, with a textbook example of a fault scarp.

Saturday 1 September, 9am

Tantallon

Leader: Tom Challands and David Millward, BGS

The impressive cliffs, islands and rocky headlands around North Berwick and Tantallon Castle are composed of lower Carboniferous volcanic rocks; but there are also subordinate sedimentary rocks that are fascinating in their own right. The jawbone of a tetrapod was found in the Ballagan Formation rocks at Gin Head north of Tantallon and nearby in Oxroad Bay similar rocks have yielded a diverse plant assemblage.



Left: Kinnoull Hill, Perth. Photo: Con Gillen.

Right: Excursion group at Berwick. Photo: Alison Tymon

Wednesday Evening Excursions

Wednesday 25 April, 7pm

Ellen's Glen

Leader: Al McGowan, Lothian & Borders GeoConservation

This Local Geodiversity Site gives us the opportunity to look at some local Carboniferous geology (Lower Limestone Formation and W. Lothian Oil Shale Formation), and some aspects of the fluvial geomorphology of the Burdiehouse Burn. We will also consider the misfit nature of the present channel in relation to the valley, the local industrial archaeology and the historical built environment.

Wednesday 9 May, 7pm

Bonaly

Leader: Andrew McMillan, Lothian & Borders GeoConservation

The excursion aims to examine some of the Lower Devonian basalts and trachytes of the Pentland Hills Volcanic Formation and rare exposures of rocks of the Kinnesswood and Ballagan formations (Carboniferous). The geological foundations for the local reservoirs of Torduff and Clubbiedean will be discussed.

Wednesday 23 May, 7pm

Currie-Balerno

Leader: Ken Shaw

This excursion along minor roads and the Water of Leith walkway, will examine exposures of Lower Carboniferous Ballagan Formation exposed in stream sections and former railway cuttings. The walk will also view glacial and post-glacial landforms and investigate other aspects of the natural and man-made heritage of the area.

Wednesday 6 June, 7pm

Dalkeith Buildings

Leader: Andrew McMillan, Lothian & Borders GeoConservation

The historic Royal Burgh of Dalkeith has a large number of interesting stone buildings, dating back to the 15th century. This walking excursion along the paths and streets of Dalkeith will look at the use and source of building materials in the town. We can compare the weathering characteristics of the various rock types and see examples of techniques used to repair and conserve buildings. We shall see examples of locally quarried Upper Carboniferous sandstones as well as stone brought into the town from other parts of Scotland and further afield – a rich geodiversity on our doorsteps!

Wednesday 20 June, 7pm

Calton Hill

Leader: Richard Smith, Lothian & Borders GeoConservation

Calton Hill is formed of basaltic lava and ash layers. The excursion will explore the geological features on Calton Hill and the geology of the local building stones and monuments. We will walk up to the top of the hill from Waterloo Place and back down to Regent Road.

Wednesday 27 June, 7pm

Aberlady shore

Leaders: David McAdam and Fiona McGibbon

The excursion will examine Lower Carboniferous cyclical sediments from Middle Longcraig Limestone to Lower Skateraw Limestone along the foreshore from Aberlady Point to Craigielaw Point. We will interpret the environment for each bed from its lithology and fossils.

Introductory Excursions

Aimed at new EGS members but open to all.

Sunday 27 May, 10am

Arthur's Seat

Leaders: Angus Miller and EGS Council Members

The Arthur's Seat volcano dominates the centre of Edinburgh and is a superb example of a small, partly-eroded basalt volcanic cone. It gives the opportunity of exploring different parts of the volcanic system including intrusions, lava flows and vent material. We will also visit Salisbury Crags to appreciate the contrast between surface volcanic activity and underground magma intrusion and the important site discovered by James Hutton.

Saturday 8 September, 10am

Siccar Point

Leaders: Angus Miller and EGS Council Members

The promontory of Siccar Point is on a rocky and wild coastline just a few miles south of Dunbar, and is described as the most important geological site in the world. The site demonstrates an unconformity between two sets of sedimentary strata and was used by James Hutton to support his world-shaking ideas of geological time and natural processes. We will visit Old Red Sandstone exposures at Pease Bay before walking out to Siccar Point over a grassy field.

Promoting Public Interest in Geology

Society members will be aware of our recent focus on promoting local geology and the Society, spear-headed by our Promotion Secretary Angus Miller supported by Christine Thompson, Barbara Clarke, Andrew Rushworth and other members of the Society's Council. EGS has hosted and promoted several public events, including a well-received public lecture on Scotland's recent fossil finds, an Earthcache Weekend, events for the Science Festival and expanded Excursion Programmes for 2017 and 2018.



President Stuart Monro leads a group to Siccar Point during the Earth Cache weekend, October 2017.

The focus for the next year will be on taking forward new projects, while continuing to develop the website and organise further events for the general public, including another public lecture. We intend to add a new section about James Hutton and important sites associated with him to the website. Several EGS members have expressed disappointment about the removal of the Geological Trail at Barns Ness near Dunbar. We are now working with East Lothian Council to install a new board near the Lime Kiln. We have also made contact with other organisations such as Historic Environment Scotland in Holyrood Park and Edinburgh World Heritage to offer support for developing new interpretation.

Publications and other resources

EGS Publications

www.edinburghgeolsoc.org/publications/geological-excursion-guides/. Most excursions guides are also available as free downloads from earthwise.bgs.ac.uk

Lothian and Borders GeoConservation have published 25 leaflets on local geology, all available as free downloads from www.edinburghgeolsoc.org/publications/geoconservation-leaflets/

Council News

At the AGM in February, the Society formally thanked Richard Smith and Christine Thompson for their significant contributions, and Christine was elected as a Distinguished Fellow in recognition of her various roles on Council since the last Millennium and her leadership in developing and taking forward the five-year strategy. Thanks also to Barbara Clarke and Andrew Rushworth for important contributions in key positions (although both remain on Council).

We were delighted to welcome new Council members Ian Kearsley (Excursions Secretary) and Bruce Mair (Membership Secretary). With the appointment of Christine Thompson as Archivist, all key positions are now filled, for the first time in many years.

Membership Subscriptions

Subscriptions for 2017-18 were due last October! If you have overlooked making your payment please remedy this now by sending a cheque (payable to Edinburgh Geological Society) to the Membership Secretary, or pay by bank transfer to Edinburgh Geological Society, Sort Code: 80-02-73, Account No. 00285438. Give your full name as Reference.

Contact Bruce Mair by email or phone if you are unsure about any details of your membership. Please keep your postal and email addresses up to date so that all our publications and information reach you.

EGS News email list

Join the EGS News email list to be kept informed of changes to programmes and other news of interest to members. Please contact the Membership Secretary.

Society contacts

President Robert Gatliff
president@edinburghgeolsoc.org

Honorary Secretary Neil Mackenzie
secretary@edinburghgeolsoc.org

Honorary Treasurer Christian Ranken
treasurer@edinburghgeolsoc.org

Membership Secretary Bruce Mair
6 Liberton Drive, Edinburgh EH16 6NN 0131 621 0532
membership@edinburghgeolsoc.org

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

Publications Sales Officer Don Cameron
booksales@edinburghgeolsoc.org

Promotion Secretary Angus Miller 0131 555 5488
promotion@edinburghgeolsoc.org

**Edinburgh Geological Society,
The Lyell Centre, BGS - Second Floor, Research Ave S,
Edinburgh EH14 4AP**

www.edinburghgeolsoc.org

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. Members will also receive the Annual Report and AGM details in January.

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