

———— THE —————
GEOLOGICAL SOCIETY
— OF —
GLASGOW

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President: Dr Brian Bell BSc(Hons) PhD

www.geologyglasgow.org.uk

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157/1



Dr Laura Evenstar, GSG Lecture series speaker for April 2015, at the copper deposits of Cerro Colorado in the Atacama Desert of Chile.

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Welcome to the Geological Society of Glasgow's Session 157 for 2014-15. We extend a warm welcome to members old and new for the new session and we hope you enjoy this year's programme of events.

Lecture meetings:

All lectures are held in the *Gregory Building, University of Glasgow, Lilybank Gardens, Glasgow G12 8QQ*. Meetings commence at 7.30 pm.

Introduction to GSG Lecture Programme 2014-15

Our session opens with **Peter Treloar's** talk on minerals which had to be cancelled last session when the south of England was inundated by huge floods and transport was extensively disrupted. Let's hope no such mishap recurs!

Graham Leslie of BGS Edinburgh is someone we associate with Highland geology, but he is going to tell us about a new interest in the tectonic history of Anglesey. I knew little of this area until my son acquired a cottage on the nearby Lleyn peninsula which, along with Anglesey contains rocks of the Monian supergroup, is a peri-Gondwanan terrane.

Our pre-Christmas treat comes from **Jim MacDonald** who is taking us to another 'new' part of the world, this time in Africa. Much of the 800,000 km² of Namibia is covered by the Namib and Kalahari Deserts and Jim will guide us through this amazing country, explaining its complex and varied geology.

"Fracking" has become a hot topic both in economics and politics. We are fortunate in having an expert on our doorstep – **Zoë Shipton** - who will enlighten us on the mysteries and opportunities of this new technology. This will be a splendid opening for 2015.

John Winchester is another name well known in Highland geology but one of his abiding interests has been the Palaeozoic growth of Europe. He will tell us about the accretion of 'bits' from Baltica, Avalonia, Laurentia and the Armorican Terrane from Cambrian to Carboniferous times.

Ian Willamson is known to us particularly from his work on Mull with Brian Bell. For his talk in February, he has chosen a provocative title *Are the Early Palaeogene Lava Fields of NW Scotland monotonous piles of old, cold and very boring basalt?* I am sure that they will turn out to be anything but boring! This talk is a further contribution to our occasional 'North Atlantic Opening' series.

Another exotic location is the subject of our last speaker of the session, **Laura Evenstar**, namely the Atacama Desert of Chile where she studies cosmogenic exposure ages at the copper deposits of Cerro Colorado. Laura appears on site in our cover photograph, with appropriate headgear!

Jim Morrison, Meetings Secretary

Thursday 9th October***Dr Peter Treloar (Kingston University)*****Minerals – from Mines to Mountains**

Minerals are more than just the building blocks of rocks. Analysis of their chemistry, their textures and of the solid and fluid inclusions contained within them will document the evolution of the rocks that host them. Modern analytical techniques now make possible the rapid collection of precise data that enable us to drill down into petrological and structural histories. In this talk I will use two case studies. In the first, mineralogy of metamorphic rocks from the High Himalaya of North Pakistan have allowed us to deduce precise geochronologically-constrained Pressure-Temperature-Strain-Time paths for orogeny which leads to a discussion of rapid rates of regional metamorphism. In the second, mineral chemistries and textures together with fluid inclusion and stable isotope analysis of gold deposits from West Africa enable us to challenge the metamorphic fluid paradigm for orogenic gold deposits.

Thursday 13th November***Dr Graham Leslie (British Geological Survey, Edinburgh)*****Accretion and tectonic amalgamation in Anglesey**

Edward Greenly viewed the older schists and quartzites of Anglesey with ‘great trepidation’ but perhaps with great foresight. Some 100 years on, it is now apparent that Late Neoproterozoic accretion at the outboard margin of East Avalonia is recorded on Anglesey in ~650 Ma metamorphism of the Coedana Complex, the ~615 Ma supra-subduction zone Coedana Granite and ~560 Ma exhumation of the Penmynydd Zone blueschists. Thrusting complexity upon complexity, however, Anglesey’s present architecture is largely a product of repeated cycles of accretionary tectonics against peri-Gondwana that commenced in the Early Ordovician when intense deformation assembled the Late Neoproterozoic rocks with the Middle Cambrian to earliest Ordovician(?) Monian Supergroup. This cycle is very similar to the Penobscottian accretion in the northern Appalachians. The Monian rocks were at surface before sub-aerial eruption of the early Arenig(?) 300m thick Church Bay Tuff Formation. The tuffs are overlain unconformably by a Middle Ordovician to early Silurian marine foreland basin succession now arranged, with its basement, in a SE-vergent thrust stack. All of the foregoing orogenesis pre-dates Acadian deformation recorded in Devonian strata on Anglesey.

Thursday 11th December**Annual General Meeting and lecture:*****Dr Jim MacDonald (University of Glasgow)*****A journey through Geological time in Namibia**

A full summary of Jim’s lecture will appear in the next Newsletter.

Over the coming weeks we shall be seeking new members for election at the AGM. The success of the Society relies on the continuing support of our members and the time and commitment of those who volunteer to serve on Council. This session the posts of **Honorary Secretary, Membership Secretary, Day Excursion Secretary** and three **Ordinary Members** will come up for re-election. We would welcome expressions of interest from members who may wish to take up these posts (note that some existing officers may wish to renew their term of office). Nominations will need to be finalised by early December.

January meeting:

Please note that the date will be **15th January and not 8th**, as it would be normally (see the calendar on your Membership that was enclosed with this Newsletter).

News and topical articles:

Following the Cruise of the Betsey:

This expedition, a floating conference celebrating the 1845 and 1846 voyages of Hugh Miller through the Small Isles in the Free Church Yacht Betsey, took place from 6th-12th September along with land-based events involving local schools on the Isle of Eigg, Edinburgh and Cromarty (see <http://cruiseofthebetsey.wordpress.com>, a Storymap at <http://esriukeducation.maps.arcgis.com/apps/MapJournal/?appid=5cd2a332b9434ab6a301a0bba0b17dba> and contemporary maps at http://geo.nls.uk/mapdata2/ad_chart/betsey.html).

The participants included a diverse mix of geologists, geographers, ecologists, environmental educators, writers, broadcasters, musicians, artists, film-makers and traditional storytellers in addition to the crew of the host craft "Leader" – a traditional 100 foot ketch operated by Trinity Sailing of Brixham. The voyage and land events were very successful, attracting considerable local interest and were publicised on a dedicated Facebook page (<https://www.facebook.com/cruiseofthebetsey2014>) and Twitter feed (<https://twitter.com/BetseyCruise14/media>). Recordings of activities and interviews were made along the route and it is intended that some of these will appear in the national media in due course. Other outcomes of the project will be used in the near future for teaching aspects of Scottish landscape and culture in schools.

The Society sponsored berths for two young Earth Scientists on the voyage, Rosie Bradshaw and Derry Wilkinson, who benefitted greatly from this unique experience. Other supporters and sponsors for the project included the **Royal Scottish Geographical Society** (RSGS), the **Edinburgh Geological Society**, the **Aberdeen Geological Society**, the **Friends of Hugh Miller**, **Lochaber Geopark**, the **Scottish Geodiversity Forum**, **The Isle of Eigg Heritage Trust**, **Storyline Scotland**, the **National Library of Scotland** and **Scotia**

Exploration & Mining Ltd. The project was co-ordinated and organised by Dr Joyce Gilbert of the RSGS. Dr Simon Cuthbert of GSG was on board as resident geologist; he would like to express his sincere thanks to the Society Council for its generous financial support for one of the young Earth Scientists, and to Society members who made very generous individual donations in support of a second young Earth Scientist. These two beneficiaries will make a presentation about their experiences at Members' Night in the spring of 2015.



Left - Sail Training Vessel *Leader* anchored off Galmisdale, Isle of Eigg. Right – Young Earth Scientist Derry Wilkinson at The Recess, Sgurr of Eigg.

Photo's - SJ Cuthbert

Julian Jocelyn & Dorothea Blake:

We are sad to announce the deaths of two long-standing members of the Society during the summer. Dorothea (Dot) Blake died on 1st July after short illness. Dorothea was Treasurer of the Society for many years, having been recruited by her younger sister, Rosemary McCusker, who was also well known to many of us as Excursions Secretary. Julian (Jos) Jocelyn died during the last week in June. Jos was an Honorary Member of the Society and worked for many years as a technician at the Scottish Universities Environmental Research Centre (SUERC) and its predecessors. Jos will be well remembered by members for his regular presentations at Members' Nights, especially about his fascinating research on agates.

Correction to article TEN TIPS FOR TICK ATTACKS in Newsletter 156/4:

The article states that the tick should be removed using tweezers or fingernails and that a twisting action should be applied as the tick is pulled off. Two authoritative sources (<http://www.lymediseaseaction.org.uk/about-ticks/tick-removal/> and <http://www.nhs.uk/conditions/lyme-disease/pages/introduction.aspx>) advise that if tweezers are used (preferably the fine-pointed type) the tick should be pulled off without twisting, and that using fingernails should not be used in order to avoid infection via broken skin under the nail. However, Lyme Disease Action recommends use of a tick

removal tool such as a “tick twister”, in which case a twisting action is necessary if stated in the manufacturer’s instructions. Tick twisters may be obtained from your local vet’s surgery.

Notices:

Draft Minute of the Special General Meeting of Session 156 of the Geological Society of Glasgow held on 10th April 2014:

Post of Independent Examiner:

Professor Chris Morris has agreed to stand as the Independent Examiner for one year (Session 156).

Proposer Margaret Donnelly

Seconder Michael Pell

This was approved by a majority of the members present.

(This minute will be presented for approval by the members of the Society at the Lecture Meeting on 9th October 2014).

Articles for the Newsletter:

We would like to include one short, topical article in each Newsletter. If you have news of a recent event or discovery, opinions on geological matters, or wish to let people know about aspects of geology in the Glasgow area or the wider world, then please send your article to the Hon. Secretary, Simon Cuthbert. Articles should be no longer than 300 words. Pictures may be included; colour images are welcome but should reproduce well in monochrome; all images must comply with copyright and information from other sources should be acknowledged. Articles will also appear for a limited period on the Society website. We will, as usual, be pleased to receive notices of upcoming events, and these will appear separately to the topical articles in this Notices section.

Scottish Journal of Geology:

This is a reminder that Geology Society of Glasgow members who are eligible to receive the paper version of the Scottish Journal of Geology now have free online access to the full content of the journal, including back issues, via the Lyell Collection. This involves a one-off, free subscription activation where you select a user name and password. The steps to setting up access to the Lyell Collection are as follows:

- 1) Go to the subscription activation page www.lyellcollection.org/cgi/activate/ibasic and enter your subscriber ID number. This is your four-digit GSG member number prefixed with the letters GSG; for example, if your GSG membership number is 1004 then your subscriber ID is GSG1004. You can find your GSG member number from the address label of a recent SJG or billet mailing, or you can contact the Membership Secretary at gsgmemsec@ntlworld.com.
- 2) Select a username and password that you will use to login and view the journal. Once you've completed the subscription activation, you will be able to access the SJG site at sjg.lyellcollection.org or using the link from the main Lyell Collection webpage www.lyellcollection.org.

If you have any problems with access to the Lyell Collection, please contact the Hon. Secretary, Simon Cuthbert.

Membership subscriptions:

As agreed at the AGM last December, the annual membership fees have been increased. This is due to the increases in costs being incurred by the Society for lecture room hire, postage and website fees. Annual subscriptions for Session 157 are due from **1 October, 2014** at the following rates:-

- *Ordinary Membership*: **£25**
- *Associate Membership* (available to those over 60, or spouses of Ordinary Members, or members of the Edinburgh Geological Society: **£12.50**
- *Junior Membership* (available to those under 25, or full time undergraduates): **£6.25**

Note that the Scottish Journal of Geology is only sent to Ordinary Members and to those Junior members who pay an annual supplement of £6.25.

Method of Payment - Cheques, made payable to ***Geological Society of Glasgow***, should be sent to the Membership Secretary unless a Bankers Standing Order has been signed. Please indicate the Member for whom payment is being made if not apparent from the cheque e.g. a cheque from 'Anyone' paying for a member 'Someone else'. **Members who currently pay by cheque** - Please note that the membership card enclosed with this newsletter indicates our expectation that you intend to renew your membership subscription for Session 157. If you currently pay by cheque then please e-mail the Membership Secretary at gsgmemsec@ntlworld.com to request a postal address.

If you would like to make future payments by Bankers Standing Order (**this is the preferred method of payment from the Society's point of view**), please advise the Membership Secretary when you send in your cheque for this session. We will send you a Bankers Standing Order form so you can arrange to make future payments via your bank. Alternatively you can download a Bankers Standing Order form from the GSG website and forward the completed form to the Membership Secretary at the above address.

Members who currently pay by standing order - If you have an existing Bankers Standing Order, payment at the new rate should happen automatically on 1st October, provided you have already notified your bank to update your existing Bankers Standing Order. If not, a copy of the Standing Order Amendment Form that you can use to instruct your bank to make the required update is appended to this newsletter (last page). Alternatively, you can download a Bankers Standing Order form from the GSG website and forward the completed form to the Membership Secretary at the above address.

Address changes - The Society maintains the only mailing list of Society members and any changes should be sent by post or e-mail or communicated by telephone to the Membership Secretary. Labels for all mailings, including the Scottish Journal of Geology are produced by the Society from the membership record.

Membership Card - The enclosed card not only gives information on the lecture programme, but can also be used to provide proof of membership when necessary. To validate it you need to add your name and reference number, which is printed on the mailing label used for this newsletter. The number will also be repeated on the label for the next newsletter or can be obtained from the Membership Secretary at any time by phone, e-mail or post. *When joining the University Library*, proof of identity such as a photo driving licence, passport, travel card or matriculation card (e.g. through an Adult Education Class) will also be required, in addition to the presentation of a membership card for Session 157.

New Members - We extend a warm welcome to the following new members:-

Mr D Muir	Shotts
Mr I Relf	Blackwaterfoot
Mr S Young	Dingwall
Ms J Watt	Bearsden
Mr R Bryce	Clarkston
Miss A Ainsworth	Glasgow
Mrs E Davenport	East Linton

Dr R A Painter, Membership Secretary

Bookshop:

The Society's bookshop stocks a large selection of geology-related books, maps and pamphlets. It is open to browse and make purchases after the winter lecture meetings. Selected titles are listed in the Society website (<http://www.geologyglasgow.org.uk/bookshop/bookshop/>). Most of the books in this list can also be purchased from www.Amazon.co.uk through the website's customised Amazon bookshop. If you want to purchase a book that is not on the list, or any other item that Amazon sell, you can help the Society by making your purchase from the Amazon home page using the link from the Bookshop page. The Geological Society of Glasgow is a participant in the Amazon EU Associates Programme, an affiliate advertising programme designed to provide a means for sites to earn advertising fees by advertising and linking to Amazon.co.uk. Each purchase that takes place through the customised Amazon bookshop or the link to the Amazon home page generates a commission of approximately 5% of the sale price (excluding VAT) for the society. Further information is available from GSG Council Member Bill Gray (books@gsocg.org).

Courses at the Glasgow University Centre for Open Studies:

<http://www.gla.ac.uk/services/centreforopenstudies/>

- ***Introduction to the composition and structure of the Earth.*** Ben Doody, Gordon Curry, Margaret Donnelly and Simon Cuthbert. Wednesdays 19.30-21.30 from 24th September 2014 (22 meetings).
- ***Introducing Geology.*** Simon Cuthbert. Tuesdays 19.30-21.30 from 30th September 2014 (10 meetings).
- ***Geology around the Mediterranean.*** Mike Keen. Thursdays 14.00-16.00 from 9th October 2014 (18 meetings).
- ***Exploring the Earth's interior.*** Gordon Curry. Saturday 8th November 2014, 10.00-16.00 (1 meeting).
- ***The Geology of Mars.*** Simon Cuthbert. Saturday 7th February 2015, 09.30-16.30 (1 meeting).
- ***Geology in the field.*** Mike Keen, Jim MacDonald, Alistair McGowan and Iain Allison. Wednesdays 10.00-13.00 from 22 April 2015 (Introductory meeting + 5 full day excursions).

Events from other geological societies:**Edinburgh Geological Society**

Lectures are held in the Grant Institute of the University of Edinburgh, West Mains Road. See <http://www.edinburghgeolosc.org> for full details:

15th October: Prof. John Parnell (University of Aberdeen) *Evidence for a deep biosphere in the geological record.*

29th October: Dr Maarten Krabbendam (BGS Edinburgh) *Quaternary evolution of glaciated gneiss terrains: pre-glacial weathering versus glacial erosion (or: how to make a noc and lochan landscape).*

12th November: Dr Simon Cuthbert (University of the West of Scotland) *Eclogites and the fate of subducted continental margins*.

26th November: Prof. Colin Ballantyne (University of St Andrews) *Catastrophic landslides in Scotland and Ireland: timing, causes and implications*.

Aberdeen Geological Society

For this winter's lecture programme see <http://www.aberdeengeolsoc.org.uk/> for up-to-date details.

Highland Geological Society:

Meetings take place at 7.30pm in Room 145/146 at Millburn Academy, Inverness unless otherwise indicated. See <http://www.spanglefish.com/highlandgeologicalsociety/index.asp> for full details:

5 November: Dr Dave McGarvie, (The Open University in Scotland) *Fieldwork in Chile: Land of volcanoes and earthquakes*.

10 December: Peter Reynolds, HGS & Julie Corcoran (Highland Library Services). *The HGS Library Collection*.

Westmorland Geological Society:

Meetings are held in the Abbot Hall Social Centre, Kendal and start at 8 pm (unless otherwise stated).

For full details see <http://www.westmorlandgeolsoc.co.uk>

24th September: Prof. Pete Kokelaar (Univ. of Liverpool) *Extreme avalanche mobility: theories, experiments and for real* (Joint Lecture with Cumberland Geological Society at Queen Elizabeth Grammar School, Penrith). NB Start time 7:30pm.

15th October: Dr Frank Nicholson *Mining & Quarrying*.

19th November: Dr Kent Brooks (WGS) *Canary Islands, Gran Canaria*.

17th December 2014 *Members' Evening and Jacob's Join* (NB Start time 7:30pm).

Dr Simon J Cuthbert, Honorary Secretary, The Geological Society of Glasgow
contact@gsocg.org

GEOLOGICAL SOCIETY OF GLASGOW
STANDING ORDER AMENDMENT FORM

Standing Order for Annual Membership

Subscription Renewals from
(write your name [in block capitals] on dotted line above)

This is an instruction to your bank to amend an existing a standing order to the Geological Society of Glasgow to reflect the increase in subscription fees due from 1st October 2014.

Please pay to **Geological Society of Glasgow, Royal Bank of Scotland** (GSG account details are as per the existing standing order with your bank - your bank will already have the GSG account details for your existing order.)

the amount indicated below:- (please tick **one** of the boxes below)

- () £ 25.00 Ordinary Membership Subscription
- () £ 12.50 Associate Membership Subscription

The first payment is to be made on 1st October 2014 or on receipt of this instruction, whichever is the later, and a like amount on the 1st October in subsequent years until further notice.

To the Manager (your bank)

..... (bank address)

..... (bank sort code)

..... (account number)

..... (account name)

..... (signature)

Please complete and return this form **to your bank** by post or present it personally at the bank counter (please **do not** send it to the Society).