THE GEOLOGICAL SOCIETY OF GLASGOW

Registered Scottish Charity No. SC007013

President: Dr Brian Bell BSc (Hons) PhD

www.geologyglasgow.org.uk

February/March 2015 **157/3**

Folded Colonsay Group metagreywackes near Smaull, Islay. Probable Grampian Group turbidites (see topical article on the Geology of Islay). Photo ©D Webster

In this newsletter:

- New book on the Geology of Islay
- Lecture Meeting Summaries - March and April
- AGM report

TOPICAL ARTICLE

NEW BOOK - A Guide to the Geology of Islay

An introduction to Islay's geological past with 12 illustrative excursions.

By David Webster, Roger Anderton and Alasdair Skelton

This new guide describes 12 varied excursions on Islay that tell the fascinating story of Islay's geological past from 2 billion year old gneiss to the Ice Age. The geology of each excursion is described at an introductory level with geological maps and photographs and for novices the book also contains an introduction to geology section and a glossary of terms.

For those with a geological background there is a section describing Islay's geological framework in more detail with some key references for further reading.

The excursions range from leisurely rambles to more demanding longer walks, most of which are readily adaptable with shorter easier options.

Why is the Geology of Islay so interesting?

- The Islay area is the best place in the British Isles to see the 1,800 Ma metamorphic rocks (the Rhinns Complex). This small outcrop may be part of a more extensive mass which underlies much of central Scotland.
- Relatively undeformed deltaic and submarine fan deposits of the Colonsay Group (now believed to be part of the Dalradian Grampian Group) in contact with Rhinnean basement.
- A classic passive margin sequence (the Appin and Argyll Groups of the Dalradian) Now inverted but with relatively low-grade metamorphism resulting in the excellent preservation of the original depositional features.
- The best evidence in the British Isles of Precambrian life in the form of microbial stromatolites.
- The world-famous Port Askaig Tillite which is probably representative of a global glaciation at 635 Ma (equivalent of the Marinoan), with an overlying possible (but atypical) cap-carbonate sequence (the Bonahaven Dolomite).
- Good examples of the re-activation and reversal of syn-depositional extensional faults.
- A good place to study mineralisation and fluid-flow: at least three distinct episodes can be observed ranging from metamorphic fluid flow resulting in carbonation of metabasite sill margins during the Caledonian Orogeny, late Carboniferous sulphide mineralisation and Permo-Triassic brecciation and dolomitisation.
- A variety of Cenozoic-age igneous intrusions related to the opening of the North Atlantic.
- A wide variety of Ice Age erosional and depositional features, including spectacular raised platforms, eskers, fluviatile outwash deposits and cryoturbation.

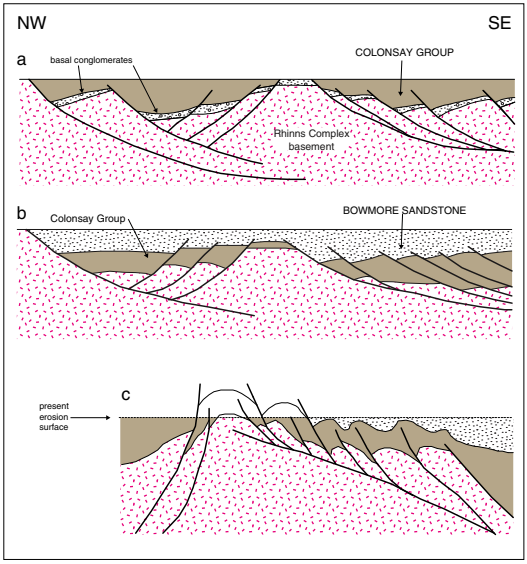
About the Authors

Dr Roger Anderton has worked extensively on the sedimentology and tectonics of the Dalradian following his Ph.D. on the Dalradian of Islay, Jura and mid-Argyll. He now lives near Lochgilphead following a career at the British Geological Survey, Strathclyde University and in the oil industry.

Dr Alasdair Skelton did his Ph.D. on the metamorphism of the Dalradian basaltic sills and has continued his studies on fluid flow in Islay and Argyll whilst pursuing an academic and teaching career at the University of Stockholm.

David Webster graduated with a geology degree and worked in the oil industry and then in local government in Scotland before retiring and building a house on Islay. He is now working on a Masters Thesis at Stockholm University on the structural and stratigraphic evolution of Islay.

Roger and David are both members of the Geological Society of Glasgow



LEFT: A n example figure taken from the 'Geology of Islay' book showing a model for the development of the postulated Rhinns Horst and the deposition of the Dalradian Grampian Group sequences around and over it.

(a) Deposition of Colonsay and (b) Bowmore Groups on its flanks.

Inversion during the Caledonian Orogeny (c) has reversed the bounding faults creating complex shear zones between the sedimentary sequences and the Rhinns Complex (see photo below).

©D Webster

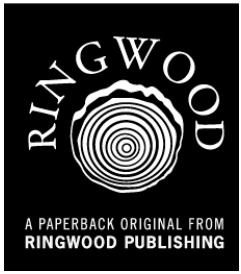
RIGHT: An example of the faulted contact between the Colonsay Group and the Rhinns Complex near Kilchiaran Bay on the western side of the Rhinns. The shear-zone is about 3m wide and comprised of very sheared phyllonites which have been eroded into a gully. On the right are the 1,800 Ma gneisses of the Rhinns Complex and on the left are bedded quartzites of the lower part of the Colonsay Group which are probably about 750 Ma. The person in the photograph is straddling an age gap of about 1 billion years and the shear zone is thought to have both extensional and compressional histories.

How to buy your copy of the Guide to the Geology of Islay

The book will be for sale at meetings of the Society. It will retail at £14.99; with a discount for members of the society.

Alternatively it can be purchased from the Publisher's website where other good Scottish works of fiction and non-fiction can be found.

Ringwood Publishing
7 Kirklee Quadrant,
Glasgow, G12 0TS
mail@ringwoodpublishing.com
www.ringwoodpublishing.com



Lecture meetings

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

Thursday 12th March 2015

Dr Ian Williamson *(formerly British Geological Survey)*

Are the Early Palaeogene lava fields of NW Scotland monotonous piles of old, cold and very boring basalt?

For many of us, the Palaeogene lava fields of the Inner Hebrides probably conjure up bleak landscapes comprising endless tracts of rank grassland and blanket-peat bogs beset by mist, ticks and midges. The rocks too are often considered unexciting, dull and little more than monotonous piles of old, cold and very boring basalt, and, as such, pretty-well intractable and unworthy of detailed field-based research.

Hopefully, as a result of this lecture you'll see them in a very different, more dynamic light.

Taking specific case studies from Skye, Mull and Canna, this lecture aims firstly to summarise our current knowledge of the early Palaeocene lava fields and then to detail how recent field-based research has significantly increased our understanding of the physical volcanology, stratigraphy and facies architecture of these rocks. Age relationships, geochemistry, secondary mineralisation and sedimentary rocks (including some palaeontology and palaeoecology) associated with these sequences are also covered.

Finally, in lighter "non-scientific" vein, my talk will demonstrate the legacy of this

volcanism in determining present-day landscape character in the Inner Hebrides and how peoples' perceptions of these "lava field landscapes", including for example the iconic features of Fingal's Cave (Staffa, Mull) and the Old Man of Storr (Trotternish, Skye), have inspired generations and played influential roles in both art & cultural circles and in the (Geo)tourism industry.

Thursday 19th March 2015. (Joint meeting with Astronomy Society of Glasgow)

Dr Simon Cuthbert (University of the West of Scotland)

Mascons, Maria, Mega-Impacts & Moon rocks: Geology and the Face of the Moon

The next meeting of the Astronomy Society of Glasgow will be a joint meeting with GSG. Location - Room 6.41 Royal College, Strathclyde University.
Full details at www.theasg.org.uk.

Thursday, 9th April 2015

Dr Laura Evenstar, (*University of Bristol)*

Atacama Desert: the chicken or the egg scenario?

It has long been believed that the uplift of the Andes created a rainshadow effect forming the Atacama Desert, the driest desert in the world. New evidence suggests that the Atacama Desert is actually substantially older than this and may have played a huge role in creating such a large Andean mountain chain. This talk will explore why and when the desert formed as well as looking at some of the stranger things you find in the desert, like giant boulders and ancient Inca walkways.

14th May 2015

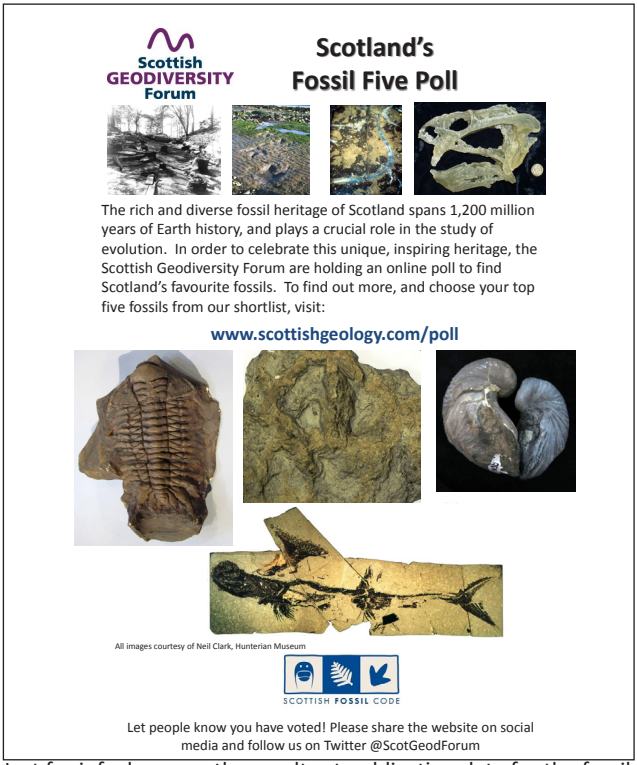
Advance Notice of Members' Night

Short presentations by members of the Society. Member's Night is an opportunity for Society members to give short presentations or displays about their own interests and adventures in geology. If you are interested in presenting then please contact the Hon Secretary, Simon Cuthbert.

SUMMER EXCURSIONS

A separate newsletter with all the booking forms will be distributed soon once details are finalised.

X FOSSIL 5 Poll ..... Still time to vote! X



What are Scotland's Favourite Fossils?

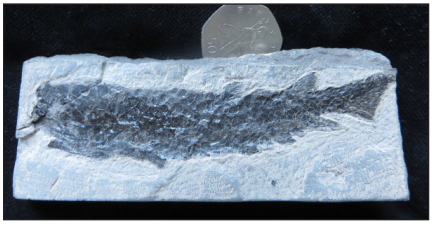
This public poll is being organised by the Scottish Geodiversity Forum whose panel has selected a range of fossil types found in Scotland – not every possible fossil, but the ones we judged to be the most interesting or important. There's quite a range here, spanning the ages from recent back to the Precambrian. So, over to you … before you vote, you can read more about the candidate fossil types in the Scotland's Fossils section on the Scottish Geology website.

www.scottishgeology.com/geo/scotlands-fossils

The poll will run until Spring 2015.

Just for info, here are the results at publication date for the fossil five poll. 275 people have voted, casting a total of 913 votes.

Devonian Fish	107	12%
Trilobites	84	9%
Jurassic dinosaurs	83	9%
Fossil trees	81	9%
Early tetrapods	75	8%
Bearsden sharks	63	7%
Stromatolites	62	7%
Jurassic ammonites	56	6%
Early land plants	55	6%
Triassic reptiles	48	5%
Conodonts	46	5%
The Irish Elk	41	4%
Eurypterids	38	4%
Graptolites	35	4%
Jurassic oysters	20	2%
Carboniferous shrimps	19	2%



AGM Report: Council Members for Session 157

The AGM was held on Thursday 18th Dec 2014. Thanks were expressed to all Council Officers for their work during the recent session, and particularly to those who had come to the end of their term of office. Following the election / re-election of Council Officers, Council now comprises.

President	**Dr Brian Bell**
Vice President	**Miss Margaret Donnelly**
Vice President	**Dr Ben Browne**
Vice President	**Mr Michael Pell**
Hon. Secretary	**Dr Simon Cuthbert**
Treasurer	**Dr Ben Browne**
Membership Sec.	**Dr Robin Painter**
Minutes Secretary	**Mrs Margaret Greene**
Meetings Secretary	**Dr Jim Morrison**
Publications Secretary	**Mrs Mina Cummings**
Librarian	**Dr Chris Burton**
Asst. Librarian & Hon. Archivist	**Mrs Margaret Anderson**
Proceedings Editor	**Ms Mina Cummings**
Excursion Sec. (day / evening)	**Mr Roy Bryce**
Excursion Sec. (residential)	**Ms Katerina Braun**
Webmaster	**Dr Bill Gray**
Website Consultant	**Dr Neil Clark**
Website Coordinator	**Ms Emma Fairley**
Junior Representative	**Vacant**
Journal Editors	**Dr Colin Braithwaite & Dr Brian Bell**
Ordinary members	**Dr Walter Semple, Dr David Brown, Mr David Webster, Mr Bob Diamond plus 2 vacancies**
Independent examiner	**Mr Ian Anderson**
Geoconservation Subgroup Chairs:	
Strathclyde	**Mrs Margaret Greene**
Argyll & Islands	**Mr Alistair Fleming**

There are still vacancies for 2 Ordinary members of Council and a Junior Representative. Volunteers are invited and encouraged to fill these posts, in order that the Society may function as fully as possible. A special thank you to Roy Bryce for volunteering for the Day Excursion Secretary role.

The AGM was followed by a lecture from Dr Jim MacDonald entitled: **A Journey through Geological time in Namibia**

The evening ended with the customary festive social.

Notices

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. Full details about access can be found in the last Newsletter (available from the GSG website). If you have any problems with access to the Lyell Collection, please contact the Hon. Secretary, Simon Cuthbert sec@gsocg.org

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Subscriptions & Membership

Thank you to all those members who have renewed their subscriptions for the current Session. Also thank you to all those who recalled that rates were being increased from the start of this Session 157.

May we please encourage those few who have so far overlooked paying a subscription, or who have paid a subscription that was not updated to the increased rates, to renew as soon as possible. Thanks.

Rates are as follows:

Ordinary Membership	£25	Includes Scottish Journal of Geology
Associate Membership	£12.50	Eligible to those over 60, or spouses of Ordinary Members, or members of the Edinburgh Geological Society.
Junior Membership	£6.25	Eligible to those under 25, full time undergraduates, or recent (4 years) graduates. Scottish Journal of Geology is available on payment of a £6.25 supplement.

Any queries regarding the above should be addressed to the Membership Secretary, Dr. R. A. Painter, e-mail: gsgmemsec@ntlworld.com

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Newsletter Send-out: By post or by e-mail?

Sometime after many of us joined the Society we began sending out the newsletter by e-mail to those who wished this (from Session 150). We feel sure also since that time many are now on e-mail that were not when they first joined. However unless you have since given us your e-mail address we can only send you the newsletter by post.

The development of the newsletter now incorporates colour pictures and electronic links to other areas of interest. The hard copy version of the newsletter does not offer these advantages. So if you would prefer the option of receiving the e-mail version, please e-mail the membership secretary. The added benefit to the Society is that this option will also save administrative time as well postage and reprographics costs.

New Members

We extend a warm welcome to the following new members:

Miss M S Slowik	Renfrew
Mr G Finch	Irvine
Mr A Burns	Kilbarchan
Dr B P Bergman	Edinburgh
Mr M Staitis	

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 (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

www.gla.ac.uk/courses/openstudies

- *The Geology of Mars*- Dr Simon Cuthbert. An introduction to the geology of this fascinating planet, suitable for those with at least a little experience of geology or astronomy who wish to expand their knowledge of planetary science. We will explore the diverse surface terrains of the Red Planet, look in detail at some of its rocks and try to find out what stories they have to tell. You will see how geology is being explored right now on the surface of Mars and try out some investigations of your own. Finally, we will consider whether Mars has, or ever had, the conditions to support life. **09.30-16.30 Saturday 25 April 2015**
- *Geology in the field* – Dr. Mike Keen, Dr. James MacDonald, Dr. Alistair McGowan and Dr. Iain Allison. Field studies and examining rocks in the field are the basis of all geology. We will examine the geology and geomorphology of a series of areas within easy reach of Glasgow. Following an introductory meeting when plans and venues will be

discussed, there will be five full-day excursions by private car. Walking will generally be easy, and no prior knowledge of geology needed. **First meeting 10.00-13.00 Wednesday 22 April 2015.**

Events from other geological societies

Edinburgh Geological Society www.edinburghgeolsoc.org

11 March. Rob Strachan (University of Portsmouth). New light on the Caledonides of the Shetland Islands. Clough Medallist Lecture.

25 March. Stuart Monro (University of Edinburgh). A geological future in Scotland?

Aberdeen Geological Society www.aberdeengeolsoc.org.uk

19th March. Ben Kneller (University of Aberdeen). Sedimentation in Blue Water.

2nd April. Annual General Meeting, Rock Auction and Member Travelogues

Highland Geological Society www.spanglefish.com/highlandgeologicalsociety

18 March. Paul Monk, HGS. '50 years in amateur geology: collections, fieldtrips and passion'

22 April. Dr Alan Crane, University of Aberdeen. 'Aotearoa: A Plate Margin Journey'.

Westmorland Geological Society www.westmorlandgeolsoc.co.uk

18 March. Dr David Penney (Univ. of Manchester). Spiders in Amber

Articles for the Newsletter:

We would like to include short topical article(s) 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.

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