

THE GEOLOGICAL SOCIETY OF GLASGOW

Registered Scottish Charity No. SC007013

President: Dr. Jim Morrison

www.geologyglasgow.org.uk

April 2018

160/4



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Quaternary glaciomarine diamicton with flint erratics from Kilchiaran Bay on Islay. Where did they come from? Come to Members' Night on 10th May, where one of the short talks will be by members of the Glasgow University Remote Islands Expedition.

In this newsletter:

- Lecture for April
- Members' night
- Excursions - Reminder
- Geodiversity Forum AGM Report

Lecture meetings

All lectures are held in the *Gregory Building, University of Glasgow, Lilybank Gardens, Glasgow G12 8QQ* (unless otherwise noted). Meetings start at 7.30 pm. For more information contact the Meetings Secretary, David Webster: meetings@gsocg.org

Thursday 12th April 2018

Dr. Anthony Spencer, Statoil (retired)

The T. Neville George Medal Lecture: Establishing the glacial record of the Port Askaig Formation (Cryogenian) in Argyll

The Port Askaig Formation (PAF) in the Garvellach Islands and Islay is ~1100 m thick and includes 47 diamictite beds, interbedded with siltstones, dolostones and sandstones. The succession in the PAF records a total of 76 climatically-related stratigraphic episodes: 28 glacial, 25 periglacial and 23 non-glacial episodes. The PAF occurs in a Dalradian succession that is many kilometres thick, as newly revealed by sea-floor mapping around the Garvellachs. Compared with other Cryogenian glacial successions around the World, the PAF is exceptional in its combination of formation thickness, the number



The 'Disrupted Beds' in the Port Askaig Formation on Beannan Dubh, Islay. A possible Banded Iron Formation? or a Cap Carbonate? Discuss.

of climatically-related stratigraphic episodes, and the considerable thickness of its host supergroup. These indicators of relative stratigraphic completeness suggest that the base of the PAF in the Garvellachs is a succession without a major break, supporting it as a candidate section for the base of the Cryogenian System (GSSP).

Study of the 'PAF' has a long history which started with MacCulloch (1819). It was the first Neoproterozoic glacial deposit to be identified (Thomson 1871) and the wonderful outcrops in the Garvellachs were first 'discovered' by Pitcher and Shackleton (1961), leading to my Memoir in 1971. Now a large team is working to prepare a new Memoir for 2021.

Tony has been a practising professional geologist since completing his PhD at Liverpool University in 1966 on the Port Askaig Tillite Formation in the Garvellachs and Islay. Whilst employed at the Geological Society of London

researching Mesozoic-Cenozoic orogenic belts, he was the author of the 1971 GSL Memoir number 6 – an exhaustive treatise on the Port Askaig Tillite, which today remains the key reference for the stratigraphy of that area; and he also published another definitive paper on the stromatolitic carbonates of the overlying Bonahaven Formation.

A long and distinguished career in the oil industry then followed, first with BP and latterly with Statoil in Norway, where he published and edited a large number of key papers, books and memoirs on the petroleum geology of the Arctic regions, the NW European continental margin and the North Sea. Throughout his career in the oil industry he maintained his interest in the Precambrian glacial story and published a paper on NE Greenland.

He retired from Statoil in 2012 after a career in petroleum exploration spanning 41 years and rather than just relaxing and enjoying retired life in Norway; he has turned back to his first love, the Port Askaig Formation. He spends a lot of his retirement in a remote and primitive bothy on the Garvellachs and is in the process of authoring several key papers on the area including a proposal for a 'Golden Spike' on the Garvellachs to mark the worldwide base of the Cryogenian Period of the late Precambrian – which if accepted would be only the second such 'spike' in Scotland (after Dob's Linn)

Further reading: SPENCER, A.M. (1971): Late Precambrian Glaciation in Scotland. Geological Society, London, Memoir 6, pp. 5-102.

Thursday, 10th May 2018

Members' Night

PLEASE NOTE THE CHANGE OF LOCATION FOR MEMBERS NIGHT - IT IS NOW IN THE ALEXANDER STONE BUILDING IN UNIVERSITY GARDENS (Next to the Queen Margaret Union).

Short presentations by members of the Society. Members' Night is an opportunity for Society members to give short presentations or displays about their own interests and adventures in geology.

The programme is:

- Allan Jack on Jabal Sayid Copper Mine
- David Degan Rock Comparison on Earth, Moon and Mars (including rock display)
- Neil Clark [display - tbc]
- Margaret Greene on the Shaping the Landscape Exhibition at New Lanark.
- Glasgow University Student expedition to Islay.

It will also be the occasion for a presentation to Chris Burton in recognition of his long service (over 40 years) as the Society's Librarian.

Summary of Residential Field Excursions 2018

Full details and booking forms were included in the February newsletter. If you missed this then see the website. Further information and booking forms are available from the Residential Excursion Secretary, Maggie Donnelly, email restrips@gsocg.org

Raasay

April 27 – April 30 2018

Leader: Dr Brian Bell

Please note that this excursion is fully booked. Please contact Maggie Donnelly to go on the waiting list.

The Geology of Aberdeenshire – mountains, glens and coast

Fri September 14th to Mon September 17th 2018

Leader: Dr Con Gillen

Devonian lavas and sedimentary rocks; Highland Border Complex (with superb pillow lavas); Highland Boundary Fault; ORS/Dalradian unconformity; Dalradian structure and metamorphism; Caledonian and post-Caledonian granites, gabbros, migmatites, dykes and breccia pipes.

Advance Notice: Islay: April 26-29th 2019.

We are in the early stages of planning a trip to Islay next year. Staying in the Port Charlotte Youth Hostel and/or B&Bs. Please email Maggie if you are potentially interested so we can get an idea of the accommodation and transport requirements.

Summary of Day Excursions 2018

Full details were included in the last newsletter and are on the society's website, however for more information and a booking form please contact Roy Bryce, email daytrips@gsocg.org

Saturday 2nd June: Muirshiel Country Park

Leader: Dr Iain Allison

Leaving Gregory Building at 09:00

Saturday 9th June: Glen Lednock

Leader Dr Simon Cuthbert

Leaving Gregory Building at 09:00

Saturday 30th June: Perth & Environs

Leader Dr Con Gillen

Leaving Gregory Building at 09:00

Joint Excursion with the Edinburgh Geological Society.

Saturday 18th August: Spireslack Quarry

Leader: Dr Graham Leslie

Leaving Gregory Building at 09:00

Wednesday 22nd August: Scottish Universities Environmental Research Centre (SUERC) East Kilbride

Leader: Derek Fabel

Saturday 8th September: Bathgate Hills

Leader: Dr Con Gillen

Leaving Gregory Building at 09:00

News and Topical Articles

Shaping the Landscape Exhibition, The Schoolroom, New Lanark

Clyde and Avon Valley Landscape Partnership (CAVLP) have launched an exhibition at New Lanark which connects the landscape of the area with the life of the people, animals and plants, past and present.

The landscape of the Clyde and Avon Valleys is the result of hundreds of millions of years of rock formation, erosion and deposition. The soils, plant cover and river systems are much younger, forming after the vast ice sheet of the last glaciation retreated from this part of Scotland.

Display boards and interactive models tell the story of the formation of the landscape of the Clyde and Avon valley and demonstrates how the landscape has been tamed for use in agriculture, mining and especially, in the case of New Lanark, for power for the weaving industry. The boards also display the influence that the landscape has had on the wild life and how it has inspired art and literature.

The exhibit was introduced at an opening event in February by Ewan Bachell, Development officer of CAVLP and launched by Dr Diarmid Campbell, BGS, Chief Geologist, Scotland.



In his speech Diarmid praised the exhibition for bringing together all the components of the vision for Scotland's geodiversity as laid out in the Scottish Geodiversity Charter. "The shared vision of the signatories to the Charter is that Scotland's geodiversity is recognised as an integral and vital part of our environment, economy, heritage and future



sustainable development “ Along with the vision is a commitment to promote and enhance geodiversity as an integral part of our natural heritage, recognising, amongst other factors, its contribution to historical and cultural development, economic development, supporting biodiversity and reconnecting people with nature.

This exhibition is not only fulfils all these aspirations and more but is an example of how Scotland’s geodiversity as a whole can and should be promoted.

The exhibition is free to local residents (ML8, ML9 and ML11 postcodes), so please bring along some ID with your address (e.g. driver’s license) or a utility bill with a local address and postcode.

Visitors from further afield may view the exhibition as part of the New Lanark World Heritage Site upon purchasing of a regular Day Admission ticket

For more information see <https://www.clydeandavonvalley.org/natural-history-geology/item/shaping-the-landscape-exhibition> or contact Margaret Greene by email at margaretgreene@btinternet.com

Scottish Geodiversity Forum

The Scottish Geodiversity Forum held its AGM recently, which was a very positive and useful meeting. We agreed at the AGM to establish Working Groups to take forward our immediate priorities, as outlined in the diagram below:



Working Group 1 - Engagement

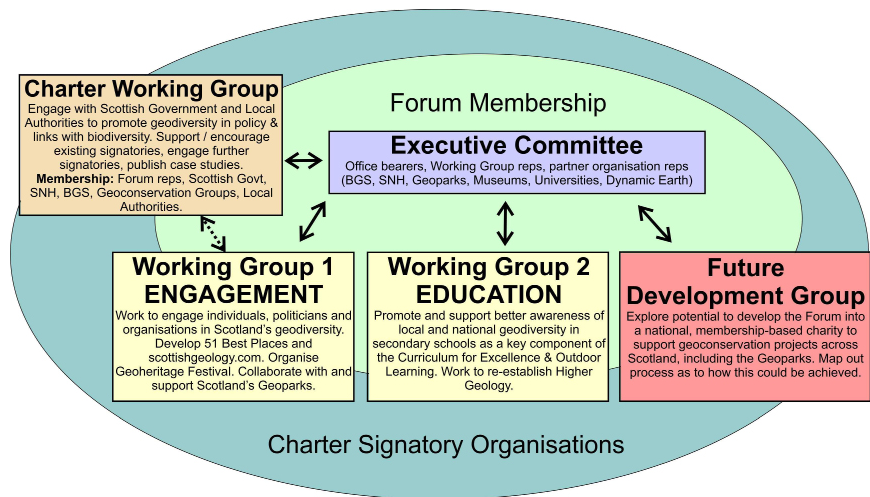
The overall mission of this working group is to engage individuals, politicians and organisations in Scotland’s geodiversity. Some examples of projects under the Engagement remit include:

- Developing 51 Best Places and scottishgeology.com.
- Organising the Geoheritage Festival.
- Collaborating with and supporting Scotland’s Geoparks.

Please contact Lara Reid engagement@scottishgeodiversityforum.org for more information about Working Group 1.

Working Group 2 - Education

The main focus of this working group is to promote and support better awareness of local and national geodiversity in secondary schools as a key component of the Curriculum for Excellence & Outdoor Learning. There is also a grass-roots push to re-establish Higher Geology.



Please contact Jen Brooke education@scottishgeodiversityforum.org to for more information about Working Group 2.

The two working groups will decide on their own structure, strategy, communication, meetings, etc. and will report to the Forum Executive and to the Forum membership through the existing email group. The existing Charter Working Group will continue (to be chaired by Colin MacFadyen and Simon Cuthbert) as will the Future Development Group.

The Scottish Geodiversity Forum is going through an exciting period of change and is positioning itself to surpass the results that it already achieves at a national level.

For more information about the work of the Forum go to scottishgeodiversityforum.org

Geobus

GeoBus is a free educational outreach project for schools developed and run by the School of Earth & Environmental Sciences at the University of St Andrews since 2012. In 2016, its sister project GeoBus UCL was launched in London. In 2016, GeoBus also passed the milestone of 50,000 pupils taught.

The aims of the project are to:

1. Support Earth Science teaching in secondary schools by providing resources that are not readily available to educators



2. Inspire young learners by including new research outcomes in the teaching packages, which at times will be presented by researchers

3. Provide a bridge between industry, HEIs, Research Councils, and schools to highlight career opportunities in geology specifically, and Earth sciences and STEM areas generally

GeoBus is funded by sponsorship from RCUK, industry and professional societies. For more information or if you know of any organisation that would like to sponsor GeoBus, please contact Dr Claire Cousins (Academic Coordinator): crc9@st-andrews.ac.uk or Dr Jen Brooke (Education Coordinator): geobus@st-andrews.ac.uk.

The Scottish Journal of Geology

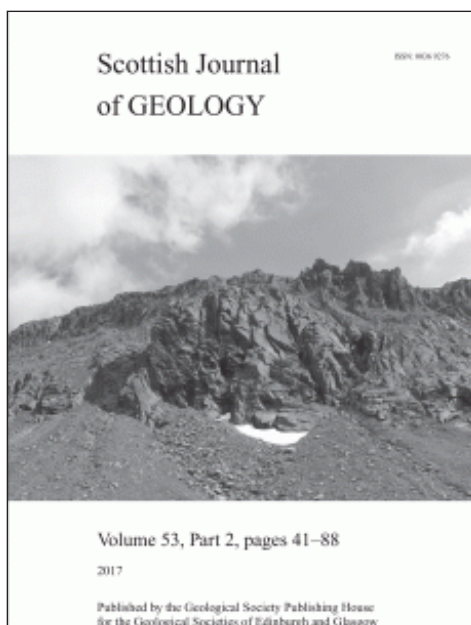
The Scottish Journal of Geology is the joint property of the Geological Societies of Edinburgh and Glasgow that, since 1965, has replaced the Transactions of the two Societies, begun in Glasgow in 1860 and in Edinburgh in 1863. The complete archive of 158 years is online at: www.lyellcollection.org

The Journal acts as a focus for papers on all aspects of the geology of Scotland and contiguous areas, including the surrounding seas, but also encourages appropriate review articles, short communications and discussions of earlier papers, together with discussions of broader aspects of the earth sciences that cannot be considered solely in terms of geology. We welcome enquiries regarding thematic sets and the results of relevant meetings and conferences. Instructions to

aid the preparation of text and illustrations can be found at: www.geolsoc.org.uk/sig-authorinfo

The varied geology of Scotland has provided the stimulus for the generation of many important geological ideas and few areas match its diversity. It continues to provide a natural laboratory for the study of earth science and the Journal welcomes submissions on all aspects of this work. Accepted articles are published rapidly online and are available worldwide through a variety of institutional, corporate and government libraries in the Lyell Collection of the Geological Society of London and GeoScienceWorld in the USA.

Papers may be submitted anytime, anywhere and progress tracked at: www.editorialmanager.com/sig



Fossil Grove Update

Friends of Victoria Park have been instrumental in persuading the City Council's Land and Environmental Services Dept (LES) to employ landscape contractors to clear the quarry area of overgrown vegetation and are in the process of getting funding for a fernery. The pond has been cleared, relined and restocked. Much new rock exposure is now evident and an updated geological map is planned. The possibility of using the area for undergraduate mapping is being explored. The pond work included jetting and clearing the rainwater drains at the western end of the fossil house - which now drain into the pond.



LES have agreed to do further CCTV surveys of the eastern rainwater drains and gullies and replace the wall uplighters. The latter will probably involve the use of a scaffolding tower system. The gutters were cleared twice over the winter - in November and February - by LES, who will also re-engage the drainage contractors to ensure the gutters and downpipes at the eastern end are fully operational.

The environmental monitor is now working properly. The problem with battery life has been sorted and the software has been migrated to a new laptop. Humidity is close to saturation. The frequent cold spells this winter were marked by inside temperatures falling to about 2 degrees; at these times the frost thermostat activated the heating system which raised temperature to about 3 degrees before switching off - thus providing the essential protection from potentially damaging freezing episodes. It may be some time before the new and planned drainage improvements result in any humidity reduction. Historic Environment Scotland (HES) are recommending purchase of further monitors which the Trustees will consider at their next meeting in April.

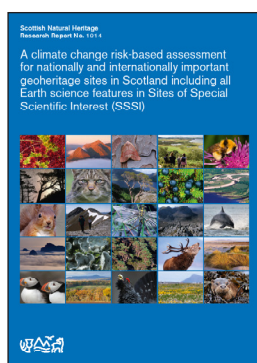
HES have sampled the salt deposits, most are relatively harmless gypsum but the tramlines of drips under the roof beams contain hexahydrate which is damaging to the rocks when it changes from hexahydrate to epsomite as humidity changes. The drip lines are the result of condensation caused by the high humidity. The roof is probably the source of the magnesium and a further sampling programme is planned.

Discussions are on-going with HES about a realistic building renovation programme and a possible modest extension to provide more exhibition space. Once a preferred strategy has been settled upon (including consultation with the park users) the Trustees will discuss funding models and running costs etc with the Council.

The building will open on 31st March until 21st October on Saturday and Sunday afternoons (12-4). The posters and the fossil displays (the latter kindly loaned by Ann Ainsworth) have now been reinstalled for the season.

Dippy goes on Tour!

Dippy, the Natural History Museum's iconic Diplodocus cast, is going on a natural history adventure across the UK, and will visit Glasgow between 22nd January and 5th May 2019. 'Dippy' has never been on public display outside London but the enormous attraction is on the move from early 2018 onwards - and Glasgow is his only Scottish destination. Lots of events are being planned. Watch this space!



Climate Change Impacts on Geoheritage

SNH has published a report, thought to be a world-first, which found that some 17% of geosites in SSSIs could be at medium risk from climate change, while 10% could be at high risk. Risks to the sites include increased erosion, flooding, rainfall and storm event changes and reduced freezing of the ground. To find out more see the SNH Press Release at www.snhpresscentre.com/news/ and the full Report at www.nature.scot. There is also a paper in the Proceedings of the Geologists' Association (subscription may be required).

North-West Highlands Geopark

Geotours 2018: 9-15 May and 25-31 July

Six-day guided tours. £235 per person including transport, early bird discount of 10% for bookings made by March 31st or May 31st. Fee includes tuition, insurance, transportation and materials. Accommodation is not included.

<http://www.nwhgeopark.com/geotours-2018-2/>

For more information or to book, contact Pete Harrison, telephone 01854 612568, email pete@nwhgeopark.com



Notices

Subscriptions

The annual membership fees of the Society for this session (160) which began 1st October 2017 are as shown below. The annual fee became payable on that date.

We encourage those few who have yet to make their annual subscriptions for the current session (160) to do so.

The membership fees for the Society are as follows:

- **Ordinary Membership** (including Scottish Journal of Geology): **£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 21, or full time undergraduates, or recent (4 years) graduates : **£6.25**. (Junior members who pay a £6.25 supplement will also receive the Scottish Journal of Geology.)

If you require to set up a Bankers Standing Order (which is the Society's preferred arrangement) as your routine method for future payments (payment for the next session's membership falls due on the 1st October), please notify the Membership Secretary, who can provide you with the appropriate form to arrange this with your bank.

Alternatively you can download this form from the membership section of the Society's website and follow the instructions given there.

Address changes: The Society maintains the only mailing list of Society members. If you are changing your postal address or your e-mail address, do not forget to let the Membership Secretary know by post, e-mail or telephone. Otherwise newsletters and SJG mailings will go astray.

Those who customarily pay by cheque can send a cheque payable to the Geological Society of Glasgow at the address below:

The Membership Secretary: Campbell Forrest, email: memsec@gsocg.org

New Members

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

Deborah King

Josh Roberts

Events from other geological societies

Edinburgh Geological Society www.edinburghgeolsoc.org

For summer excursions - see the website

Aberdeen Geological Society www.aberdeengeolsoc.org.uk

19th April Prof Gordon Walkden (Aberdeen). Stories within rocks, a polished perspective..

Highland Geological Society www.spanglefish.com/highlandgeologicalsociety

Wednesday 30th May – Thursday 7th June IODP Nankai Trench post-expedition conference and field trip, Ullapool.

Saturday 16th June Friends of Hugh Miller AGM and Hugh Miller Writing Competition Prize-giving Ceremony, The Scottish Poetry Library, Edinburgh (from 10.30 am)

Westmorland Geological Society www.westmorlandgeolsoc.co.uk

See website for excursion details.

Open University Geological Society www.ougs.org

May 25-27th Field trip to Glencoe

May 26th- June 2nd Field Trip to Skye -

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 Newsletter Coordinator.

David Webster

The Geological Society of Glasgow

e-mail: meetings@gsocg.org

Hon. Secretary: Walter Semple email: sec@gsocg.org

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