

North Eastern Geological Society

Newsletter February 2020

FIELD TRIP / LECTURE REPORTS

(As members will be aware our lecturer for 17th January did not appear. Gordon Liddle writes “Julie, our speaker, is devastated and distraught at letting us down, especially when she knows that many of our members travel a long way for the meetings. She had agreed a February date, Gillian asked her to change her speaking date to January, to accommodate the availability of another speaker. Updating her diary for 2020 she transferred the original date. She has the talk fully prepared and has offered to find another date. Unfortunately our programme is full so a new date in the 20/21 programme is being suggested. We are asking the membership if they would be available for an additional meeting, there is a reserve speaker but he is only available in January.

I feel the situation is frustrating but very understandable. I intend to update the membership in our next meeting.”)

Lecture November 24th, 2019

Dr. Chris Saville, Durham University Earth Science Department: “How is Teaching Geosciences Special?”

Dr. Saville began by referring to the multidisciplinary approach of Geoscience providing a broad view of geology which

includes the related disciplines of physics, chemistry, biology, engineering etc. Indeed it draws from almost all aspects of science which provide insights into the understanding of the Earth and its three dimensional nature. It challenges those interested in earth science to understand the great time periods that the earth has experienced. As the understanding of the discipline has evolved so new tools for the analysis of data have become available to explain theories making it a dynamic discipline, and one which has many practical applications, including water supply, coal and mineral extraction and oil and gas proving. Field visits can be brought into the lecture theatre using modern photography techniques such as drones.

Having described the nature of the beast, the focus of the talk moved to how the teaching of Earth Science (and specifically Geology) can be made available to a greater audience of both adults and the younger generation. Data suggests that there is a fall in the number of schools teaching the subject and entering their students for examination and a fall in recruitment of students to university courses. Recent debate on this matter can be found in “Down to Earth” (see below) which reinforces the concern that more must be done to sustain and develop this area of study and research. Dr. Saville opened up the debate to members and there were many in the audience who had tales

to tell which reinforced the concerns regarding the challenging future for funding, priorities and relevance. Members with teaching experience were particularly concerned about the future. It was good to hear the issues so strongly debated. If one can summarise the views expressed it was that a demand for geoscientists undoubtedly exists, young people must be alerted and enthused regarding the opportunities that await them.

Coinciding with Dr Saville's talk was the distribution of November's Down to Earth [109] which contained the second part of Chris Darmon's review of the current state of geology education in the UK, together with reader feedback on the issues raised in the previous edition [D to E 108]. Why not send your views to add to the debate in time for our next newsletter?

Members Evening December 12th, 2019

The Comrie Igneous Complex

Chris Taylor

The Comrie Igneous Complex (408 +/- 5 Ma) lies just north of the Highland Boundary Fault in Strathearn, near the small town of Comrie in Perthshire. It is a relatively small intrusive complex, isolated and generally not well known. The complex comes under the heading 'Newer Granites' though this term is used less now. It is not truly a granite, as the greater volume of the igneous rock is diorite. The igneous rocks intrude the succession of the Dalradian Supergroup which forms a high proportion of the Grampian Terrane. The sediments of the supergroup (about 25km thick) were deposited from the Ediacaran through the Cambrian and into the early Ordovician Periods during the plate movements involved in the closure of the Iapetus Ocean. The igneous rocks intrude the

upper part of the of the metasediments of the Dalradian Supergroup.

The Grampian Terrane itself is a large folded and refolded nappe structure known as the Tay Nappe. The southern side of this great nappe is bent downward and is intruded by a number of igneous bodies. On the 'downbend' of the nappe we find the Comrie Complex intruding two formations of the Southern Highland Group.

The igneous rocks consist mostly of a dolerite intruded by a microgranite. These are surrounded by an aureole of thermally altered rocks. The diorite is an intermediate igneous rock with island arc affinities intruded by a microgranite. Modern analogues with this pattern are seen in the Kamchatka peninsula. The igneous rocks intrude two formations: the Aberfoyle Slates: formerly turbidite mudrocks and the Ben Ledi Grits of associated sandstones and grits. Close to the intrusion, these are seen folded and in the case of the slates, highly cleaved and thermally metamorphosed. intrusion.

In the field there is a progression in thermal metamorphism across the aureole, best seen in the Aberfoyle Slates. They become spotted (initially biotite then cordierite), increasingly fissile closer to the pluton, then finally, they become a hornfels with no sign of the former cleavage in the slates. The Ben Ledi grits are less affected overall by thermal metamorphism but they show increasing induration towards the pluton and are seen as a low grade quartzite.

South of the Comrie Complex lies the Highland Boundary Fault zone and the Midland Valley Terrane where Devonian rocks are crumpled into tight folds. The following schematic has been drawn to show these rock relationships.

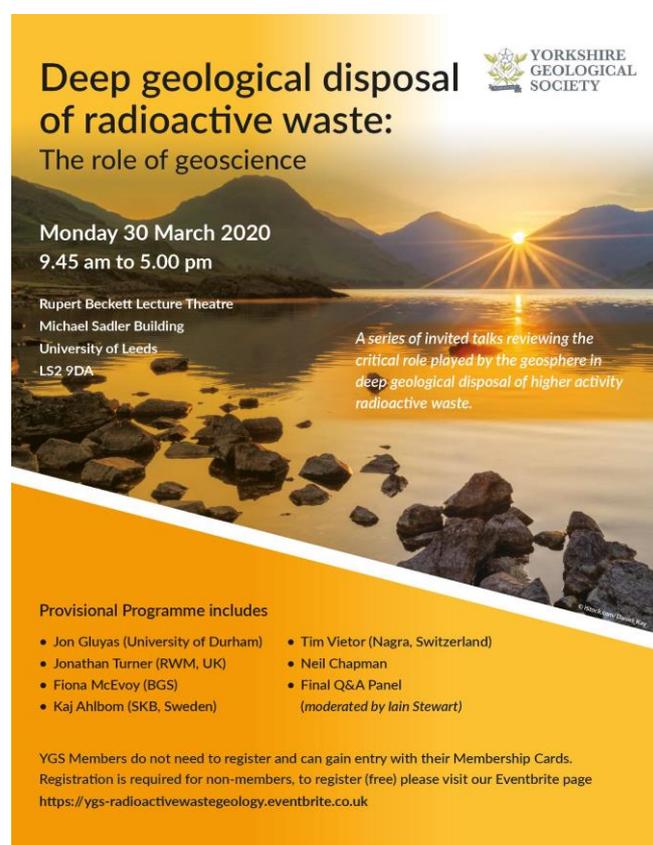
August 23 Whin Sill sites, leader Ian Kille

September 12th Weardale, leader Karl Egeland-Eriksen

ADMINISTRATION

A reminder that Motions for discussion at the AGM, and Nominations for election to Branch Committee positions are requested and due to be with the Secretary by 28th February 2020

Other news of interest:



Deep geological disposal of radioactive waste:
The role of geoscience

YORKSHIRE GEOLOGICAL SOCIETY

Monday 30 March 2020
9.45 am to 5.00 pm

Rupert Beckett Lecture Theatre
Michael Sadler Building
University of Leeds
LS2 9DA

A series of invited talks reviewing the critical role played by the geosphere in deep geological disposal of higher activity radioactive waste.

Provisional Programme includes

- Jon Gluyas (University of Durham)
- Jonathan Turner (RWM, UK)
- Fiona McEvoy (BGS)
- Kaj Ahlbom (SKB, Sweden)
- Tim Vietor (Nagra, Switzerland)
- Neil Chapman
- Final Q&A Panel (moderated by Iain Stewart)

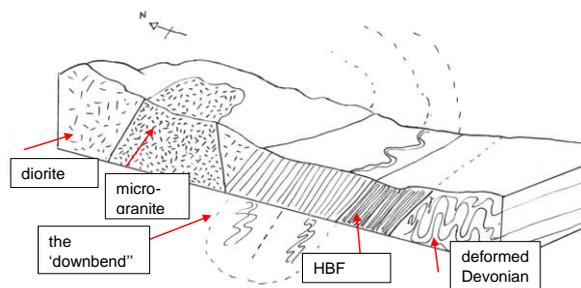
YGS Members do not need to register and can gain entry with their Membership Cards. Registration is required for non-members, to register (free) please visit our Eventbrite page <https://ygs-radioactivewastegeology.eventbrite.co.uk>



Radioactive Waste Management

For further information about Yorkshire Geological Society events see <http://www.yorksgeotoc.org.uk/>

Any items you think worth disseminating in the newsletter? Please email me at mcnultyjohnf@gmail.com



Schematic showing the relative positions of lithologies and structures referred to in the text

As well as the super talk from Chris Taylor, Members Night provided a platform for other members to 'Show and Tell'. Presentations were led by Les Barnes providing specimens and a comparison between two igneous rocks at either end of the scale. Student member Benjamin Edmonds carried in his large specimen of Lepidodendron in a rock found on the beach at Seaburn, which led to some discussion and speculation regarding the journey from its Carboniferous place of origin to this Permian seashore. There was a virtual hammer from Glynn Scott, a lump of gold from Iain Fulton (the original proposer of this evening), Botswana from Karl Egeland-Eriksen and some original field notebooks from Brenda Turnbull. There were also items displayed which were not presented. Everyone enjoyed the evening and it was generally thought worthwhile to use this format again. Thanks to all those members who took part.

UPCOMING LECTURE

February 21st Dr John Nudds, Manchester

University: Archaeopteryx

FIELD TRIPS PLANNED FOR 2020

April 18th Liddesdale, leader Brenda Turnbull

May 16th Millfield Plain, leader Derek Teasdale

June 6th Teesdale, leader Lesley Collins

July 11 Carter Bar, leader Louis Golightley

