Geology Matters

The newsletter of Malvern U3A geology group
March 2017

The leader

Although I personally missed the February talk by Prof Ian Fairchild on the Anthropocene, I understand it was an excellent talk reinforced by the performances of a number of our thespian members in his unusual introduction! Many thanks to Ian and I hope that we will hear from him again in the future. Talking of the future, I am pleased to say that we almost have a full programme of speakers until the end of this year with a number of potential talks already on the books for 2018. Thanks to Dick Harris for his persuasive efforts on our behalf. It never ceases to amaze me as to the quality of speakers who are willing to come and talk to us.

A look at the Calendar section at the end of this newsletter also shows a full programme already in place for the summer season. It culminates with the field trip to Brittany lead by Paul Olver. We have known the dates for some while (19th – 29th September) but are now getting more detail from Paul about the trip. We hope to have a professional flyer ready for issue shortly but the essential facts so far are that the tour will use the same coach throughout, following the itinerary below.

19	Brittany ferries – Portsmouth to St Malo	Overnight
20	Comfort Balmoral Hotel, Dinard	1 night's half board
21 - 22	BW Hotel Le Duguesclin, St Brieuc	1 night half board, 1 night B&B
23 - 24	BW Plus Hotel Centre, Vannes	1 night half board, 1 night B&B
25 - 26	Ibis Hotel, Quimper	1 night half board, 1 night B&B
27	Hotel Ibis, Roscoff	1 night B&B (no hotel restaurant)
28	Brittany Ferries - Roscoff - Plymouth	Overnight
29	Arrive Malvern	

The study content of the trip is outlined in Paul's preliminary flyer attached to the distribution email.

The provisional price is £930-00 per tour participant with a single room supplement of £244-00 per person. This is based on a minimum of 30 paying passengers and the aim is to open it up to local societies if we don't take up all the places. We will be calling for attendees soon, so please consider carefully whether you would like to go on this trip.

I am delighted to say that my crisis plea for ‘Rock of the Month’ presenters was most successful – we now have names taking us through until December. Thank you to those volunteers.

Amongst the attachments to this newsletter, is a report from Margaret Roadway on her attendance at the National U3A Science Seminar which you may find interesting – see also this link for more details (U3A Science Network).

A new initiative

Many of you have smart phones, and what useful things they are. Many of you will also have cameras and tablets and between these three digital devices you will take quite a lot of pictures. Many will be of family occasions, but others will show some of the great scenery you have visited. Over recent times we as a group have visited Wales more than once, and more exotically, the Azores archipelago. With yet more fascinating visits in prospect, what we would like

to do is to tap into this treasure house of images and establish a **Group Photographic Resource** which contains images of geologically related subjects that will be available to be shared and used by all members. It will be particularly useful for the Group and Malvern U3A newsletters, and also for our newcomers programme.

It will work quite simply – all you need to do is email a copy of any interesting images to us, together with a brief description of where it is and what it is. It doesn’t have to be limited to Group organised visits – literally “anywhere and anytime”. We will store the images on the Group Website. Phyl King has kindly agreed to administer the Resource for us and her contact details are:

photoresources17@gmail.com

And we had better tell you about the image above, it is the limestone island of Mrkan Bobara off the southern coast of Croatia and Cretaceous/Jurassic in age.

Further helpful technical details can be found on the Group Website.

And now a little more about Adriatic geology

Geologists had previously believed that the Dalmatian Islands and the Dinaric Mountains had stopped growing some 20 to 30 million years ago.

From a region northwest of Dubrovnik, a newly discovered fault runs northwest for at least 200 km under the sea floor. The Croatian coast and the 1,185 Dalmatian Islands are a popular tourist destination. Dubrovnik, known as "the Pearl of the Adriatic," is a UNESCO - designated World Heritage site.

At the fault, the leading edge of the Eurasian plate is scraping and sliding its way over a former piece of the African plate called the South Adria micro plate. It's a collision zone, with two continents colliding and building mountains and islands. Research has found the cause to be that Italy's boot heel is moving toward the Croatian coast at the rate of about 4 mm per year. Not fast in tectonic terms.

The region along the undersea fault has no evidence of large-magnitude earthquakes occurring in the last 2,000 years. However, if the fault is the type that could move abruptly and cause earthquakes, tsunamis might result.

This is an unusually oriented satellite image of the region showing the mountains and islands. The tectonic motion is from bottom right to top left.

Now whose fault is this?

Like many faults, the one related in the previous article is hidden from view, although its presence may well be inferred from indirect or geophysical evidence. From time to time, faults can be seen on the surface – think of the East Malvern Fault, for example, with fragments showing up near the quarries in North Malvern. Perhaps more rarely there are some quite remarkable “full in your face” faults and here are a few examples for your delectation.

On November 14th last year, the area around Kaikoura in New Zealand's south island was seriously affected by a magnitude 7.8 earthquake. The effects were widespread and dramatic. Landslides blocked highways; the main north-south railway line was disrupted, but fortunately there were very few casualties. One of the more dramatic outcomes surprised the farmer who owns this land. He now has indisputable evidence that a fault exists there.

You might have heard the term 'Graben' – we have one locally, the Worcester basin, where the rocks have subsided relative to those on either side. We can't show you an unequivocal image of that, but how about this smaller example from Pakistan?

Road cuttings are often excellent places to study local geology, including this reverse fault.

Now that's really good fun

Your children and grandchildren may well have attended a nursery at some time; there they will probably have had the pleasure of playing with a sandbox. Well now there is one for more mature people. Watch and learn….

https://www.youtube.com/watch?v=uTPOE2XceEA

Colima

A few month's ago we described the volcano Colima as the most active in Mexico. Well on the 19th January it lived up to its reputation.

https://www.youtube.com/watch?v=fl6dcpDekE8

Rock of the month

Wikipedia is a fantastic resource and one that your editor refers to quite frequently. This is what it has to say about Banded Ironstones:

Banded iron formations (also known as **banded ironstone formations** or **BIF**s) are distinctive units of sedimentary rock that are almost always of Precambrian age.

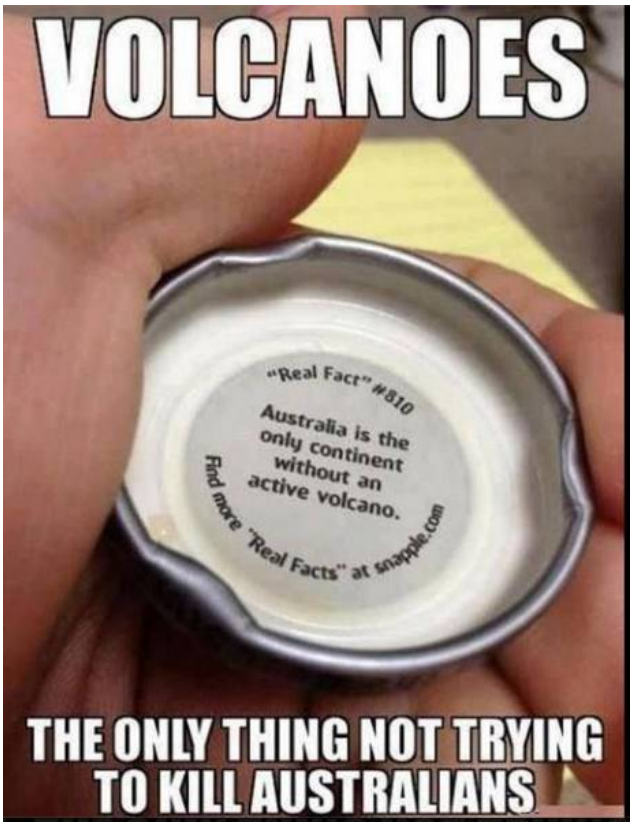
A typical BIF consists of repeated, thin layers (a few millimetres to a few centimetres in thickness) of silver to black iron oxides, either magnetite (Fe_3O_4) or hematite (Fe_2O_3), alternating with bands of iron-poor shales and cherts, often red in colour, of similar thickness, and containing micro bands (sub-millimetre) of iron oxides.[1]

Some of the oldest known rock formations, formed over 3,700 million years ago, include banded iron layers.[2] Banded layers rich in iron were mostly deposited between 2,400 and 1,900 mya.

Now take a look and see.

And a final thought about Australia

There are very large deposits of Banded Ironstones in Western Australia, but huge though it is, Australia is the only continent without an active volcano. One of those useless facts you can drop into a conversation when there is an inconvenient lull….



Stop press

You may recently have seen news stories about Zealandia - the eighth continent. If you want to read the academic article that led to all those stories then please follow this link:

https://www.geosociety.org/gsatoday/archive/27/3/article/GSATG321A.1.htm

The calendar

March	8	Monthly Talk: Geology and Tectonics in the Andes
	15	Rock Workshop No 1
	22	Rock Workshop No 2
April	5	Local field trip: Southern Malvern Hills
	12	Idar-Oberstein: A Gem (Stone) of a Town
May	5	South Wales field trip (until 9th)
	10	Members' Meeting
	24	Area field trip: Lickey Hills
June	14	Local field trip: Hollybush/Raggedstone Hill
July	1	Visit: BGS Open Day
	26	Local field trip: Bromsgrove building stones (Evening)
August	30	Area field trip: Hergest ridge
September	19	Brittany field trip (until 29th)
October	11	Metal Mines of Spain
November	8	TBD
December	13	The Geology of the Malverns

Who's who?

The steering committee

James Berry	01684 560334	zostera66@hotmail.com
Geoffrey Carver	01684 560749	geoffrey.carver@btinternet.com
Hilary Edgeley	01386 462725	hilary.edgeley@btopenworld.com
Robert Eveleigh	01531 632947	eveleigh.r@gmail.com
Mary Geffen	01684 561890	mary@geffen.plus.com
Dick Harris	01886 880699	richardlangleyharris@gmail.com
Roger Hunt	01684 565926	rmrhunt@sky.com
Richard Newton	01684 565626	richard@renewton.plus.com
Maggie Smith	01684 567278	maggietoshsmith@gmail.com

Sub group contacts

Fossils
Christopher Wright 01905 20920 cnw48@hotmail.com

Landscape Appreciation
Raphael Bate 01684 573882 randhbate@gmail.com

Maps
Mary Geffen 01684 561890 mary@geffen.plus.com

Plate Tectonics
Dick Harris 01886 880699 richardlangleyharris@gmail.com

Newsletter
Geoff Carver 01684 560749 geoffrey.carver@btinternet.com

Library
Elizabeth Staley 01684 574392 js@cmail.co.uk

Group photographic resource
Phyl King photoresources17@gmail.com

Group website

Malvern U3A Geology

http://geology.malvernu3a.org.uk/