



**The newsletter of Malvern USA geology group  
August 2017**

**The Leader**

In order to allow our editor a short summer break, the newsletter this month is relatively brief. Never the less, I hope that you enjoy it.

As I write, a group of our members have just visited Bromsgrove on a trip to study the geology of the area. I haven't had any feedback yet, but despite what was a rather wet day, I'm sure they enjoyed themselves. The final trip of the summer is on 30<sup>th</sup> August to the Hergest Ridge, near Kington, which will be led by Richard Edwards. The calling notice for this trip is attached – as usual, numbers will be limited for practical purposes, so if you are interested then get your name down soon.

May I record thanks to Peter Bridges for his organisation of the trip to the BGS Open Day on 1<sup>st</sup> July. A bus load of us travelled there on a lovely day and I think everyone thoroughly enjoyed the varied exhibits, lectures and demonstrations provided there. There were a number of guided visits and I was particularly impressed with the rock core store which holds samples of all the rock cores ever taken in the UK. As you might imagine, it is absolutely enormous filling a couple of very large warehouses! What was really impressive, however, were the efforts made by BGS to interest the children in the subject in an interesting and understandable way. The Open Day occurs every 2 years and I'm sure that we will look to repeat the visit in 2019.

Our Outside Activities Team are still working on the overseas trip for next year. Unfortunately, plans to go to Spain near Barcelona have fallen through, so we are now hoping to arrange a trip to Tenerife next Spring instead. It is still early days in our planning but a brief outline of our plans so far is attached. We hope to have fuller details in time for the September newsletter.

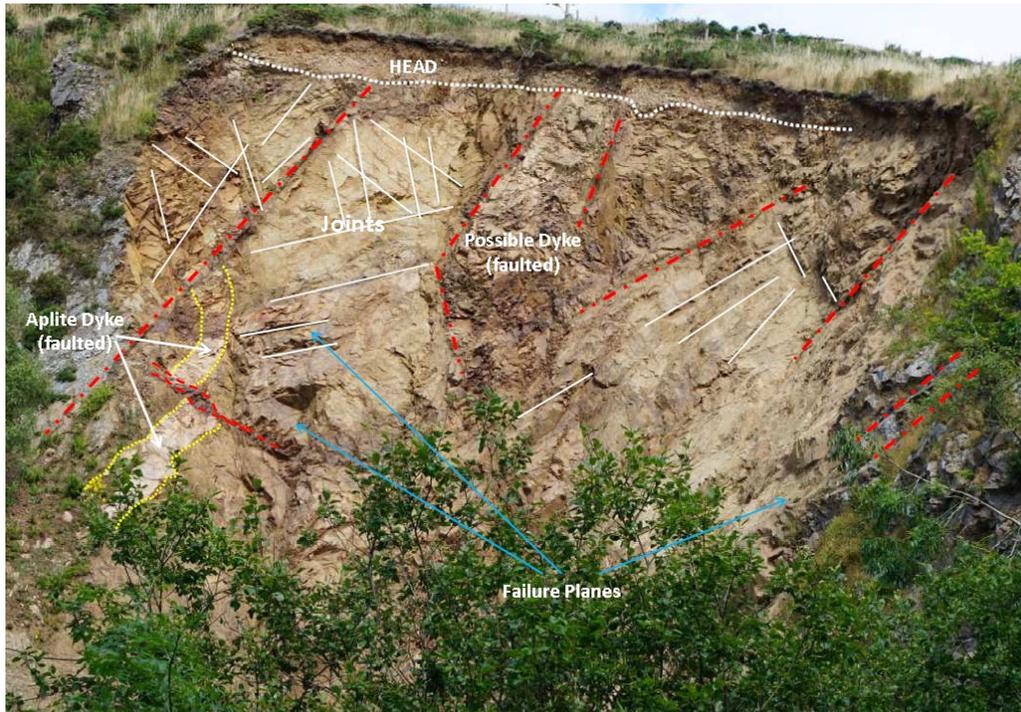
Remember this years' Group's Fair takes place in the theatre on Monday 4<sup>th</sup> September. We will be there with the geology group stand, so if you know anyone who might be interested in joining the group, get them to come along and sign up. If any current members are there, please stop by and say 'hello'!

Finally, some real geology to finish off! Some of you may be aware that there was a major landslip recently in the eastern wall of the West of England quarry in West Malvern - see the photograph below. I am very grateful to Peter Bridges who has visited the quarry and put together the following report.



The landslide has exposed a typically complex section of previously-hidden Malvernian rocks - described briefly below. The new exposure runs approximately north-south some 30 metres to the west of the path from the Gold Mine to the Worcester Beacon. Unfortunately, the quarry is closed to the public for safety reasons and the quarry face cannot be examined directly. Comments on the geology and structure in the face are based on photographs and examination with binoculars.



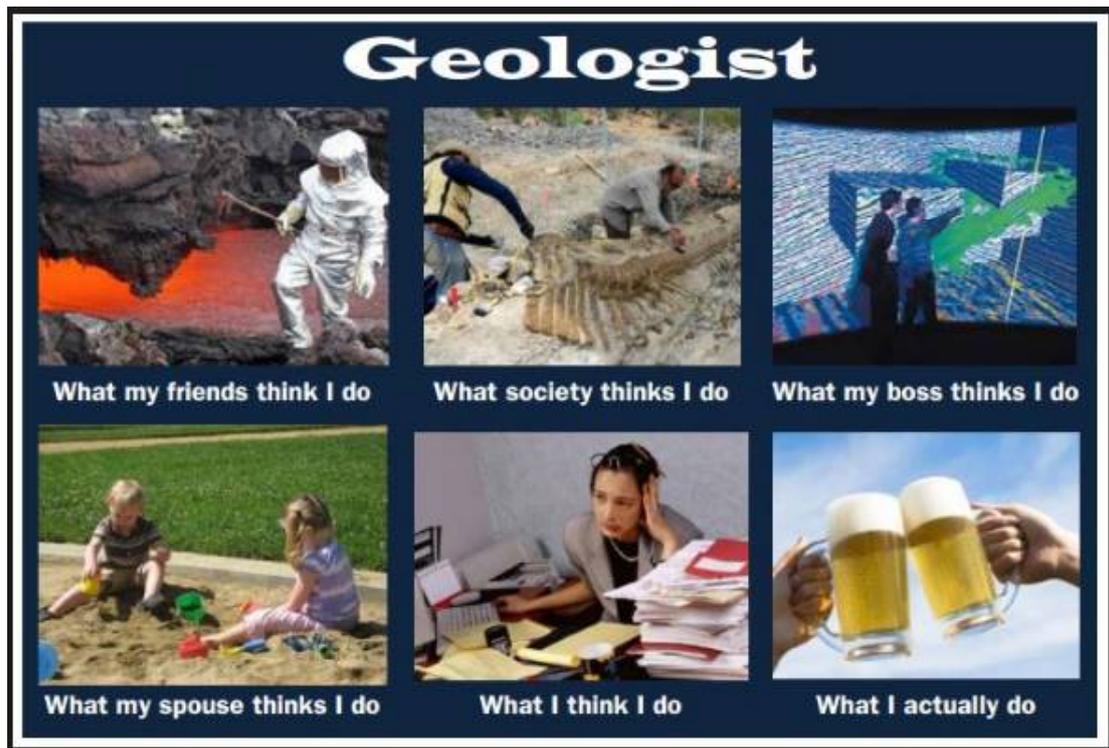


Annotations on the photograph above show the main geological features.

- Directly below a thin soil layer there is a layer of head – locally-derived angular fragments of Malvern Complex rocks mixed with sand and clay, all eroded from outcrops upslope and moved downslope through a process called solifluction.
- The traces of a series of faults and shears are picked out in red dashes on the quarry face. The true orientation of the faults cannot be determined without closer examination but one set dips steeply down to the left; the other has shallower dips to the right. These divide the quarry face into two domains – typically lighter coloured areas with well-developed joints and darker coloured, more rubbly areas. These are probably two different rock types but it is not possible to be precise without closer examination.
- Joints developed around these faults are either sub-parallel to the faults or at right-angles to them.
- One of the right-dipping faults is a reverse fault, cutting through and offsetting a narrow, light-coloured (aplite?) dyke on the left of the photo. Further upslope the same dyke appears to be cut off by one of the main left-dipping faults. The plane of the reverse fault shows up as a darker band. This could be a thin more basic dyke intruded along the fault plane or, more likely, the rock is stained with wad – a mixture of iron and manganese oxides.
- Slope failure has taken place along at least two sets of intersecting joint and/or fault planes (examples are identified by the blue arrows) which dip towards each other and break out into the near-vertical quarry face. Wedges of rock between and above the intersecting planes are supported only by friction on the planes and further rock-falls can be expected, particularly after periods of prolonged heavy rain.

- The process described is seen in miniature at the head of the lower blue arrow on the left where a coherent wedge-shaped block has fallen out. Over most of the quarry face the joints and faults are more closely spaced. As rocks roll down the slope after failure they break up into a mass of fist-sized fragments with only occasional larger boulders – see the talus slope developed below the quarry face in the first photograph.

### The summer break



The members of the Steering Committee wish you a pleasant summer break and look forward to meeting you all again in October.

### PS Catastrophism in action

So they've closed the road eh. Oh, not again, well I'll get my phone out just in case.....aaaaahhhhhh!

<https://www.facebook.com/travelkabaap/videos/vb.137198362513/10154553761742514/?type=2&theater>

### The calendar

August	30	Area field trip: Hergest ridge
September	4	Group's Fair; 10.00 – 12.00am
October	11	Monthly Talk: Metal Mines of Spain

November	8	Monthly Talk: Glaciology
December	13	Monthly Talk: Malvern Hills Geology
January	10	Effects of Meteorites, Asteroids and Comets
February	14	Speleothems
March	14	Turbidite Flows
April	11	The Devonian System

## Who's who

### The steering commit

James Berry	01684 560334	<a href="mailto:zostera66@hotmail.com">zostera66@hotmail.com</a>
Geoffrey Carver	01684 560749	<a href="mailto:geoffrey.carver@btinternet.com">geoffrey.carver@btinternet.com</a>
Hilary Edgeley	01386 462725	<a href="mailto:hilary.edgeley@btopenworld.com">hilary.edgeley@btopenworld.com</a>
Robert Eveleigh	01531 632947	<a href="mailto:eveleigh.r@gmail.com">eveleigh.r@gmail.com</a>
Mary Geffen	01684 561890	<a href="mailto:mary@geffen.plus.com">mary@geffen.plus.com</a>
Jackie Gribble	01684 565696	<a href="mailto:gardeners1@btinternet.com">gardeners1@btinternet.com</a>
Dick Harris	01886 880699	<a href="mailto:richardlangleyharris@gmail.com">richardlangleyharris@gmail.com</a>
Roger Hunt	01684 565926	<a href="mailto:rmrhunt@sky.com">rmrhunt@sky.com</a>
Richard Newton	01684 565626	<a href="mailto:richard@renewton.plus.com">richard@renewton.plus.com</a>
Maggie Smith	01684 567278	<a href="mailto:maggietoshsmith@gmail.com">maggietoshsmith@gmail.com</a>

### Sub group contacts

#### Fossils

Christopher Wright 01905 20920 [cnw48@hotmail.com](mailto:cnw48@hotmail.com)

#### Landscape Appreciation

Raphael\_Bate 01684 573882 [randhbate@gmail.com](mailto:randhbate@gmail.com)

#### Maps

Mary Geffen 01684 561890 [mary@geffen.plus.com](mailto:mary@geffen.plus.com)

#### Plate Tectonics

Dick Harris 01886 880699 [richardlangleyharris@gmail.com](mailto:richardlangleyharris@gmail.com)

#### Newsletter

Geoff Carver 01684 560749 [geoffrey.carver@btinternet.com](mailto:geoffrey.carver@btinternet.com)

#### Library

Elizabeth Staley 01684 574392 [js@cmail.co.uk](mailto:js@cmail.co.uk)

#### Group photographic resource

Phyl King [photoresources17@gmail.com](mailto:photoresources17@gmail.com)

**Group website**

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