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Welcome to the March edition of the Newsletter. To help Rhian out I have taken over its production and, having the benefits of retirement, have got the time to add to the usual content as you will see in the following pages. In future editions I would very much like to include local geological stories of interest, new discoveries, new publications, events and field meeting reports as well as the usual information about our programme etc. However, I don't want to write it all myself so I am hoping that you will help by sending me items of interest or pointing me towards stories that you might think will be of interest. All contributions can be sent to: newsletter@swga.org.uk. In future my aim is to get Newsletters out by the end of March, June, September and December. The deadline for submissions for the next issue is 5th June. I look forward to receiving your contributions!

Stephen



Message from the President

We've now come to the end of our winter lecture series. I hope you have enjoyed the varied talks that your committee has put on as we came out of lockdown and began face-to-face meetings once more. It's been great to see so many of you at the meetings, and I'd like to thank all of our speakers for some really interesting talks on a variety of subjects. Our new Swansea venue seems to have been a success, and although we would like to think that we might get back into the University for our next session, at least we have an alternative if the University rooms prove to be too expensive.

We now move into our summer series of fieldtrips, and again your committee has managed to arrange an interesting series of trips, one every month from April to October inclusive. We begin with a walk across the southern rim of the coalfield from Cefn Onn and Craig Lysfaen, Cardiff, led by Stephen Howe - details are given later in this Newsletter, along with the programme for the rest of the summer.

Please remember that we are still without a Programme Secretary, and we can't guarantee to be able to organise a full series of events if this important committee post continues to remain vacant.

Please think seriously about this and let us know if you would like to be involved on the committee.
Your South Wales GA needs you!

John Nudds, President



Committee Changes

Following our AGM earlier this month there are a number of changes to the Committee. At the AGM Janet Hiscott and Caroline Davies stood down from their respective roles as Secretary and Membership Secretary. Janet joined the committee in 2010 and took on the role of Secretary in 2015 while Caroline joined the committee in 2015 and became Membership Secretary in 2016. We are extremely grateful for all of the hard work that they put into the roles over the years, which lately has involved the arduous task of updating our Constitution and setting up the membership renewal process ready for internet banking. Luckily, we had two volunteers to fill their posts; Elen Statham as Secretary and Cindy Howells as Membership Secretary, and we are very grateful to them for taking on these roles. We also welcome Kath Ficken to the committee as an ordinary member for the next three years.

Marnix Roels also stood down as our Publicity Officer after ten years in post, having originally been co-opted on to the committee to deal with publicity in 2013. We thank him for bringing our publicity output into the 21st century, via facebook, twitter etc during his term of office. If there is anybody out there who would be interested in taking on this role (perhaps one of our younger members who is probably more technically astute than some of us oldies?!) please let us know.

As you will see from the President's Message we still haven't found a volunteer to take on the role of Programme Secretary. Nick Pollock is doing sterling work as our Meetings Coordinator ensuring that once the programme is completed that each meeting take place smoothly. However, we do still need someone to take on the programming role so please consider if you could help out, if only for a short while.



SWGA Summer Programme 2023

In lieu of not having a Programme Secretary the committee has been working hard to put a summer field meeting programme together. At the time of writing there are still a few details to be confirmed for the later trips but the programme so far is as follows:

Saturday 22nd April: Cefn Onn, Craig Lysfaen and the coalfield rim: Leader: Stephen Howe

Meet at 10.30am in the car park at Cefn Onn Country Park, Cherry Orchard Road, Lisvane, Cardiff (ST 179 837/CF14 0EP). There are toilets at the car park. Bring a packed lunch.

This meeting will be a circular geological stroll across the southern rim of the South Wales Coalfield. We will look at the rock succession that ranges from the Lower Devonian up to the top of the Carboniferous Pembrokeshire Limestone Group and the impact that these have on the local landscape along with the modifying effects of the Pleistocene and more recent events.

The walk is on quiet back roads, gravel tracks and various footpaths, some of which can be muddy and slippery when wet. The total walking distance is about 6 kms (4-4.5miles). The outward route includes a gentle climb mainly through woodland followed by a steep section up a tarmac road to the top of the outer ridge. We will take this at a gentle pace and have numerous stops. Once at the top the walk is

over an undulating area, often in the open with extensive views at times. There are a few short ascents and descents before the main descent back to the car park mostly through woodland. There are no facilities on the walk itself.

Sunday May 14th: *An exploration of the eastern Clydach; -ologies galore!* Leaders: Alan Bowring and Dilys Harlow

Meet at 10.00am at the car parking near Clydach ironworks (SO 2302 1340) for a shuttle up the gorge to parking at SO 1980 1235 then walk back down the gorge, aiming to reclaim 'top' cars by 4pm.

The Clydach gorge pierces the north-eastern rim of the South Wales Coalfield and so reveals a more or less complete section down from the Lower Coal Measures, through the entire lower Carboniferous succession and beyond to the Brownstones - a geological feast. Some of Britain's most extensive cave networks connect here too; the speleological aspect is second-to-none. Add to this, more industrial archaeological interest than any comparable area of Wales (debate!), an ecological significance - *built upon its geodiversity* - which encompasses SSSIs, NNRs and SACs and you've a recipe for an entertaining and thought-provoking few hours of introduction to this place. We'll car shuttle so as to enable a 5km linear walk which threads together the best of it. Other than an optional there-and-back, the walking is pretty much all level or downhill on minor roads, old railway and tramroads - the steepest being an old tramroad incline. We'll include an extra 'there-and-back' walk of 1km in the midst of the initial shuttle. Overall, slightly rough in places but any exposure to drops is avoidable. Sturdy footwear and appropriate clothing are required as usual. Bring a packed lunch and drinks.

Saturday June 17th: *Gower*: Leader: Peter Kokelaar

Meet at 10.30am at Greenways Caravan Park, near Oxwich Green, Gower (SS 49545 86287). Please car share where possible to reduce the number of cars using the caravan site car park. Once the parking area at the caravan park is full vehicles will have to use the main Oxwich Bay car park. Bring a packed lunch.

The trip will examine Triassic vein mineralisation, Pleistocene marine platforms and *Patella* super-storm deposits on the west side of Oxwich Point. It will involve a walk of about 3.7kms in total, out and back on the same route, with two minor scrambles onto the beach from the cliff top path. There is no hammering on this trip but excellent photo opportunities. We should return to the car park by 4.00-4.30pm.

Sunday July 16th: *Ogmore-by-Sea*: John Nudds and Cindy Howells

Meet at 10.00am at the Rivermouth Car Park (SS 862 754), Ogmore-by-Sea. Parking charges apply. Bring a packed lunch. Toilets available in the car park only.

We will start by examining the Carboniferous Limestone and Triassic wadi deposits adjacent to the car park, before walking south-east along the coastline. Ogmore-by-Sea has excellent exposures of three different units within the Carboniferous Limestone Formation and we'll be examining and discussing these. The limestones are cut by late Triassic wadi deposits, and are also unconformably overlain by early Jurassic marginal facies - the Sutton Stone and Southerndown Beds. This walk will be an excellent starting point for those who are less familiar with the overall geology of south Wales, as we will be covering the basics as well as discussing the detailed stratigraphy. We will also be looking for fossils in the rock-ledges as supporting evidence for the Carboniferous stratigraphy and depositional environments.

The walk may involve some scrambling up and down rock ledges, although it should be possible for some participants to stick to an easier route along the grassy cliff top if needed. We will be finished at Ogmre car park by mid-late afternoon, depending on how many questions are asked!

Saturday August 19th: Family Geology Day, Penarth: Leaders: John Nudds and Cindy Howells. 1.00pm – 4.00pm

We will have our gazebo and materials on the beach, just south of the RNLI slipway at Penarth, and will be setting up from about 12.15pm. Anybody interested in helping out, if only for a short time, please contact Cindy.

Saturday September 23rd: Martley, Teme Valley, Worcestershire: Leader: John Nicklin

October: tbc. Big Pit, Blaenafon. Leader: Christopher Lee.

Details of excursions later in the year will be published as and when agreed.

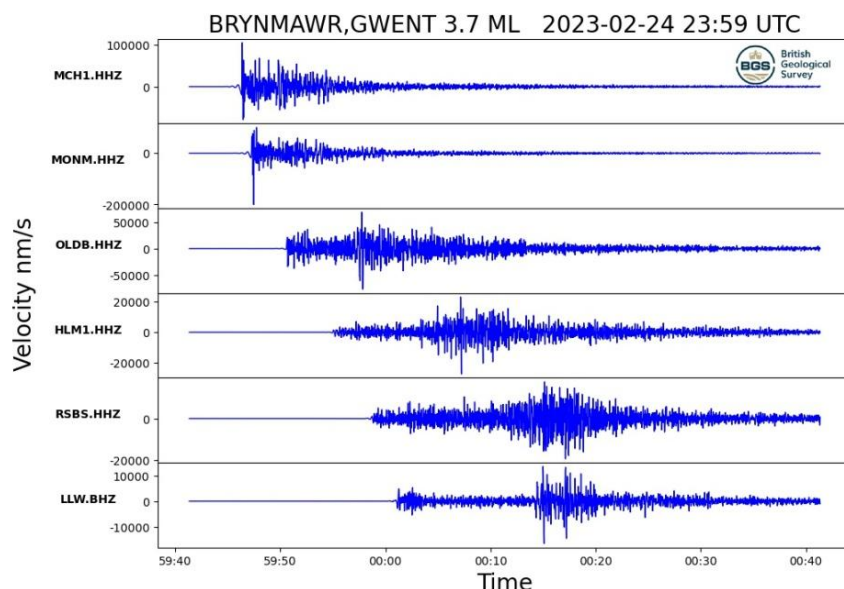
Safety Policy

Although full Risk Assessments are undertaken prior to each field meeting members are reminded that they attend field excursions at their own risk. They are expected to take reasonable precautions to ensure the safety of themselves and other participants and to behave in a responsible manner at all times. The Group has a Safety Policy and Safety Fieldwork Code that all participants should have read prior to attending a meeting. Copies can be found on the Group's web site and a resume can be found on the reverse of the Summer Field Meeting card.



Did the Earth move for you?

At close to midnight on Saturday February 25th many residents across southeast Wales were stirred by an earthquake. Were you one of these? The British Geological Survey (BGS) confirmed the location as being some 5km beneath Mynydd Llangynidr, about 200m north-west of Chartists Cave in the eastern



half of the Brecon Beacons National Park. The earthquake was registered at Local Magnitude (ML) 3.7 and at 5 on the 'intensity' scale and was the largest in the region since the ML4.6 event that occurred south of Cwmllynfell in February 2018. The trace from the seismograph at Brynmawr is reproduced courtesy of BGS. Debate has since been ongoing as to which structure was the source of this latest earthquake with the Neath Disturbance currently being one of the favoured sources. BGS seismologists said that "If we

assume a circular rupture, which is reasonable approximation for small earthquakes, then the diameter of the rupture will be less than 1 km with and an average slip of less than 1 cm". Best of luck in finding the surface expression of this event! © British Geological Survey

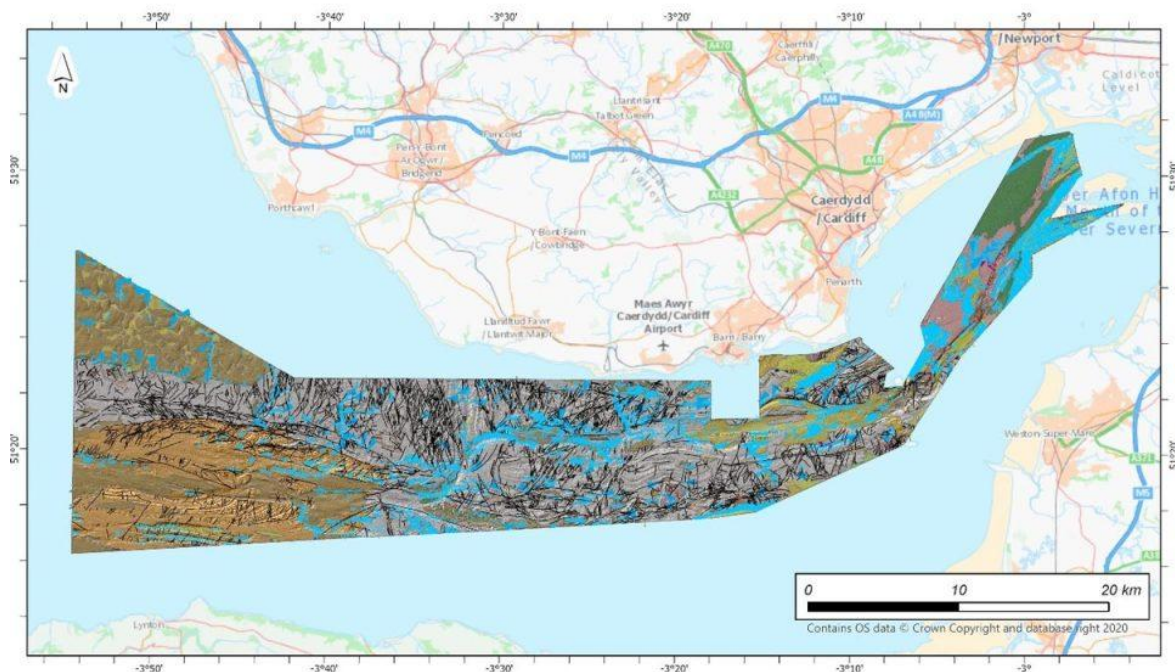
News from BGS

New offshore maps of the UK seabed released

In April 2022 BGS announced the release of the first of a new series of high resolution maps of the UK seabed. These combine bedrock, sediment, bedrock structure and seabed geomorphology on one map designed to be viewed at 1:10 000 scale or online as downloadable shapefiles. The maps include bathymetry data, backscatter imagery, grab samples and other existing datasets such as seismic, marine conservation zones, sediment texture sheets and existing 1:250 000-scale geological maps.

The first map to be published features a central section of the Bristol Channel, from Swansea Bay to Newport. Although superficial deposits cover some of the seabed in this region much of the area is free of sediment cover, which has allowed detailed mapping and interpretation of bedrock units and features. The youngest bedrock unit found is the Middle Jurassic aged Inferior Oolite, something that we don't find on-shore in Wales. Mapping has also identified a number of fault systems that affect the area that have been influenced by the Severn Estuary fault zone, a dextral, strike-slip fault zone that is thought to have been active during the early Carboniferous.

BGS Seabed Geology 10k: Bristol Channel



© British Geological Survey

The second map to be released (in October 2022) was for Anglesey. The seabed deposits around Anglesey include bedrock, glacial deposits and more recent marine sediments, including remarkably well-preserved suites of drumlins formed as the last ice sheet flowed towards the south-west.

These are a fascinating additions to the available BGS resources and more information can be found at <https://www.bgs.ac.uk/news/bgs-releases-first-in-a-series-of-new-offshore-maps-of-the-uk-seabed/>.



SEWRIGS (South-East Wales RIGS) news

Since the end of the Covid lockdown the group has been concentrating on completing clearance work on three main sites: the Ruperra Limestone outcrop in Coed Craig Ruperra, near Draethen;

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Twitter: @swgeologists

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Quarella Quarry at Wildmill, Bridgend and three sites around Usk; Cefn Ila, Cilwrgi and Llandegfedd. Each site has its own unique conditions to be tackled but clearing invasive vegetation and slumped debris is common to most. As each site is cleared they can be examined and new geological data collected. Ellen Statham writes and reflects on the work that has been undertaken at Quarella Quarry in Bridgend below.

Quarella Quarry RIGS site, Bridgend

There are times, as it has just started to rain and the muddy ditch you find yourself working in starts filling up with water, when you wonder whether Geoconservation is worth it. UNESCO thinks it is as does Geocoservation UK who have a 14 objective action plan covering research, education, planning policy, managing data, and sustaining resources, as well as site management. Covering all of these areas is a tall order for SEWRIGS, which is a small group of people with 248 sites to cover. Fortunately, the group has been hard at it, hacking away at the brambles and scraping the moss off our sandwiches.

It was while completing work at Quarella Quarry in Bridgend that I reflected that we had done more than just clear an exposure. This old quarry was worked for the Upper Triassic age Quarella Sandstone, once the main building stone for the surrounding area. The sandstone is equivalent in age to the Westbury Formation that on the coast occurs as a sequence of black shales, sandstones and bone beds. Interestingly the name Quarella comes from *chwarelau*, the Welsh for 'quarries', but the site is now a community park. Since quarrying finished nature has taken over the quarry faces, with vegetation obliterating much of the rock exposures. There was a small exposure of the sandstone in the north-east corner but with no upper or lower boundaries visible at first, nor any discernible bedding due to its massive nature, it was difficult to tell where best to start to create a good section. However, in the south-east wall of the quarry the vegetation was thinner and a low cliff of green/yellow shales was exposed that invited further exploration.

The sandstones are interpreted as forming on a migrating shoreline during the late Triassic, as the sea gradually transgressed from the south. There are two sandstone horizons separated by 2m of dark shales. It is only the upper unit that was worked at Quarella. According to the old BGS map a fault is marked crossing the quarry but its position is now also obscured.

It is difficult to work on a site and not be curious about its past and present history. Dave Wellings mapped the quarry using GPS while Lynda Garfield researched its history through old maps, finding that the sandstone quarry had been superseded by a brickworks. Did they quarry both the sandstone and the shales we wondered? We took photographs, analysed the lime content of



samples and sporadically mulled over the evidence over our picnic lunches, in between the various 'state of the nation and geology in particular' diatribes. A local man, curious about our efforts, told us the history of Quarella House, the quarry manager's on-site residence that is built of dressed Quarella Stone. He also remembered the quarry being much deeper before being back filled with waste and grassed over.

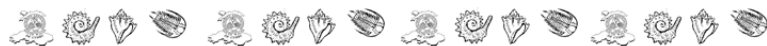
Over time we cleared more of the exposed shales in the face at the south end of the quarry and at the very bottom (a wet ditch) found the

channeled top of the topmost sandstone bed. Interestingly the shales, which are part of the Cotham Member of the Lilstock Formation, are interbedded with occasional harder bands of fine sandstones. We have also found localized silification of sediments possibly formed by evaporation, indicating the possible return of terrestrial conditions during the Cotham Member time period.

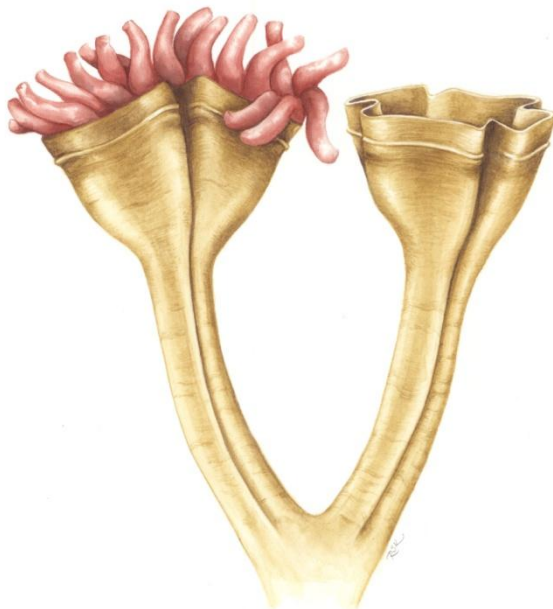
The shales have turned out to be very interesting. Prof Paul Wright and Peter Hodges have examined and sampled the exposure, and suggested that we extend the section upwards to see if we could find the White Lias, the upper Triassic sequence being very condensed here. Some stalwart digging and more than a few curses led to the uncovering of a thin band of dense, white limestone containing our first notable fossil, *Modiolus*, evidence of the marine sediments of the White Lias, which mark the start of the Jurassic marine transgression. The samples were sent for XRD determination while extending the section higher found more fossils. The section was logged by Peter Hodges.

Was it worth it? The section has allowed us to record the fine detail of the succession in this area that allows new interpretation on the conditions prevalent in this area as the supercontinent of Pangea began to break up. It also provides a site for education and research and conserves it for the future. The site description will be written up for publication both for the geology community and the public and, hopefully, it will inspire and motivate more people to become involved in geoconservation, even on an ad hoc basis.

OK, it's muddy at times (well, most times!), there is a lot of digging but also clearing vegetation and debris, brushing down cleared faces and all with a friendly group of volunteers, many from the SWGA. Why not join us?



New Ediacaran fossil find from Charnwood Forest



Many of you will be aware from the media stories last year of the find of the earliest known animal to have a skeleton in the Ediacaran rocks of Charnwood Forest, Leicestershire. The site is famous for the *Charnia masoni* fossils that were discovered in the 1950s at a time when fossils were not expected to be found in such old Precambrian rocks. This new find was made in 2007 when the British Geological Society cleaned the rock surface where the original *C. masoni* fossils had been found and took a mould of the rock's surface.

The new fossil, named *Auroralumina attenboroughii*, is thought to be one of the first cnidarians, a group of animals that includes corals and jellyfish, and is about 560 million years old. The fossil shows that the animal had a skeleton and densely packed tentacles, that would have been used to capture

small food items from the water in which it lived, and pushes the evidence for predation back about 20 million years.

Part of the group of scientists investigating the find is our Editor, Rhian Kendall, who has produced this stunning reconstruction of what *Auroralumina* would have looked like. The description of this fossil has now been published.

If you wish to know more the reference is: Dunn, F. S.; Kenchington, C. G.; Parry, L. A.; Clark, J. W.; Kendall, R. S.; Wilby, P. R. (25 July 2022). "A crown-group cnidarian from the Ediacaran of Charnwood Forest, UK". *Nature Ecology & Evolution*. doi:10.1038/s41559-022-01807-x

Casts of the slab are currently on display in the Lapworth Museum and in the BGS/Biosciences enquiries centre at the Natural History Museum, London.



Cambrian Caving Council website update

Alan Bowring has flagged up that the Cambrian Caving Council (cambriancavingcouncil.org.uk) has been updating its website, amongst which are the additions of new layers on the Cambrian Cave Register map. These include:

- 1m DSM Lidar imagery for the whole of Wales
- Dolines
- Pavements
- Cave surveys

The last three are available via the Geomorphology tab. With the existing layers, which include the BGS bedrock, superficial and 'linear features' layers and the hydrology layer (dye and pollen-test results), the map has become a really useful resource for anyone interested in our karst landscapes. All these are available on a range of different topographic bases. The caves layer links to text and imagery, including some from Alan. Why not give it a look?



Prof. Michael G. Bassett and Dr Ronald L. Austin

Sadly we have lost two long-standing members of the Group in the last few months, Prof Michael G Bassett and Dr Ronald Austin. Below is an appreciation of Ron by Ian Protheroe and Helen Hallesy while a full obituary for Mike will appear in the next Newsletter.

Ronald Leyshon Austin



Ronald Leyshon Austin, B.Sc, PhD of West Cross Swansea, died suddenly on 4th February 2023 at Morriston Hospital. After graduating in Geology at Swansea University in the 1960s Ron took up the position of lecturer in Geology at Southampton University. Having taken early retirement in 1994 he became the first Honorary Life member of the British Micropalaeontological Society (in particular conodonts) in recognition of his outstanding and sustained contribution to that society. He was also now a Senior Fellow of the Geological Society of London and respected author of many academic papers.

His interests included Royal Doulton china, local history, art and

antiques. He was an author, having co-written 'Conodont Paleozoology' with Professor Frank H.T. Rhodes and various papers on Mumbles Marble and Art for the Journal of Local History published by the Royal Institution of South Wales.

Ron's funeral took place on Thursday, 2nd of March 2023. It was well attended by friends, family and colleagues, many of whom gathered at the Bristol Channel Yacht Club, Southend, Mumbles to remember and celebrate his life. He will be sorely missed by his family, friends and colleagues both local, national and international.



Geological Events at a computer near you!

Many geological organisations have moved their events on line which means that there are raft of lectures and workshops to get involved with.

- The Geologists' Association have their **Geology from your Sofa** section on their website which is packed full of information about free lectures to attend or download. The March issue was compiled by the Bath Geological Society on a theme of *Made in Stone* and includes a lecture by Maurice Tucker on Petra: the stories in its stones while the April edition, compiled by the Berkshire Geoconservation Group, features building stones and brick making. These can be found at the following link: <https://geologistsassociation.org.uk/sofageology/>
- **Earth Heritage Magazine** This is now only available as an electronic copy, which can be found at: http://www.earthheritage.org.uk/wp/wp-content/uploads/EH-53_final.pdf
- Hopefully, you are aware that most of our lectures are recorded and uploaded to our website (www.swga.org.uk) for a few months where you can access them at your leisure. If you need help getting up and running with Zoom, we've also put a guide on our website or you are welcome to email Rhian who will try to help you get sorted.
- We also now have a YouTube channel as well as maintaining a Facebook presence (<https://www.facebook.com/groups/179899022064977>) and Twitter account (@swgeologists). With Facebook and Twitter, anyone can join in and the more that do, the better it is!

Contacts for other local geological organisations

- **Russell Society, Wales and West Branch:** Contact: Tom Cotterell. Tel: 01594 845935 before 9 pm
- **Welsh Stone Forum (Fforwm Cerrig Cymru):** Contact Jana.horak@museumwales.as.uk or www.museumwales.ac.uk/en/welshstoneforum
- **Open University Geological Society:** Contact: Andy Mitchell ougs.org/severnside
- **South East Wales RIGS Group :** <http://sewrigs.wordpress.com/>
- **West Wales Geology Society:** www.westwalesgeolsoc.org.uk



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