



Newsletter December 2024

Sixty Sixth session

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Welcome to the Christmas Newsletter. In this edition you will find the details of the remaining winter lecture series along with field meeting reports, updates from the Fforest Fawr Geopark, National Museum and SEWRIGS as well as much, much more! My thanks to all those who have provided items for the Newsletter (without too much coercion!) along with a request for you all to consider writing something for future editions.

As you will see from the Committee list above, nobody has yet come forward to volunteer to take on the Programme Secretary's role or that of Publicity Officer. Our failure to find a Programme Secretary is now impacting strongly on our ability to produce our annual programme of meetings so, if you want to see our usual wide-ranging monthly programme in the future, we would urge you to really think whether you could help us out and take on the role, even if only for a short period. You will receive assistance with ideas and contacts for speakers and field meeting venues and leaders from the Committee. All you need is a computer and email access! It would be a great Christmas present to the committee if someone was to come forward, so please think whether you might be able to help.

The next Newsletter will hopefully be out before the end of March and I am happy to receive items at any time up to 16th March for inclusion in that edition. If you have any comments on the Newsletter, or any ideas for future topics, please let me know. In the meantime, I hope that you find something of interest and the Committee wishes you all a very Merry Christmas and New Year.

Stephen Howe

Message from the President

I missed much of the late summer activity, due to being off the grid in Northeast Greenland, but I understand that the end of season field trips went well, including a 'sell out' for the Big Pit tour. It was good to be back in Greenland after a gap of 18 years, and to revisit some old haunts and fly in familiar aircraft. The weather was challenging, and the going was tough. But unpacking the fossils in the lab this week, after their trip back via Iceland, Sweden and the Netherlands, was good evidence of how successful a field season it was - more of that perhaps soon.

A huge thanks to the committee and others for organising the field season this summer, and lecture season this winter. Plans are emerging for next summer, but ideas for field trips are always welcome.

In the meantime, since the last newsletter, we have enjoyed two fascinating lectures, the first taking us underground in the Gower. It reminded me how exciting and informative underground geology and environments are, how much I enjoy reading about them, but how little I enjoy being underground myself. I once supervised a student project about red mud sediment in the non-public part of Dan yr Ogof, but the student could never entice me beyond the trap door at the entrance. So many thanks to Andy Freem for the tour.

Chris Duffin gave us a guide to the Mineralogy of Art. Not so long ago my father visited Cardiff to give a lecture at Techniquet about the chemistry of art, on behalf of the Royal Society of Chemistry. I could not help comparing the two. My father's was more about the analytical side, and how modern equipment can be used to inform us about pigments, techniques and histories of individual canvases. Chris gave us a good guide to all the minerals used in pigments amongst other things. Both of these talks really help me understand the intense rich colours which still speak to us over the centuries in the old masters. I spent too much of Lockdown watching the great Roger Dean painting album covers in his studio in Sussex live on the internet. He opened vast drawers of tubes of paint in every shade readily available in stores. Painters of the past had to be much more hands on in their creation of colours. The most fascinating part of Chris's talk for me was when he opened the door slightly to reveal the supply chain – how these amazing minerals and pigments found their way from far flung corners of the world into the artists' studios across Europe. I'd like to know more.....

Much food for thought then from the first two lectures. I'm sure the upcoming events will be equally stimulating.

Chris Berry, President



Winter Programme 2024-25

Once again, our indoor meetings alternate between our usual venue in Cardiff University and the Trallwn Community Hub, Bethel Rd, Llansamlet, Swansea SA7 9QP. All of the talks will be hybrid events with Zoom available for those who are unable to attend.

Saturday 14th December (Swansea)

Pembrokeshire, some geological highlights: Sid Howells

This illustrated talk will cover the geology and scenery of Pembrokeshire. Due to the enormity of the topic (c.650million years of Earth history, albeit with some significant gaps in terms of stratigraphic record), Sid will only have time to provide a summary of the key points. These will be illustrated with his own photos (including aerial & kayak views) of geological features at some of the more spectacular locations, mostly situated on the coastline of the Pembrokeshire Coast National Park.

2025

Saturday January 11th (Cardiff)

Holiday Geology

There are still a few vacant slots for this meeting so if you went somewhere interesting this summer and would like to tell us about the geology, or just show your holiday photos, please think about offering a short talk at this meeting.

We had a very eclectic mix of subjects last year, including a number from new volunteers, and it would be good to continue the trend this year. As usual we are looking for talks of about 15-20 minutes length (to include time for questions and turnaround) on a subject of your choice, preferably with a geological link, and prepared as a Powerpoint presentation. We will provide help with the technical side if required.

If you would like to offer a talk please get back to me at john.nudds@manchester.ac.uk along with an appropriate title. The programme is almost full, so to avoid disappointment, don't delay!

A buffet lunch will be provided at this meeting as usual. So that we ensure there is enough food could all those who intend coming **please book a place** with Nick, our Meetings Coordinator at programme@swga.org.uk

John Nudds

Saturday February 15th (Swansea)

Unearthing the letters of William Smith: Full transcriptions reveal so much more – Philippa Towler & Kevin Privett

Born out of the pandemic when GLAM volunteers couldn't come into the Museum, the Oxford University Museum of Natural History Library & Archive online transcription saw volunteers work from home to transcribe and check the scanned letters of geologist William Smith and entomologist James Charles Dale. Two volunteers in particular, Philippa Towler and Kevin Privett, became interested in the Smith letters and took the role to new heights with what they uncovered. By transcribing over 750 letters to and from William Smith a searchable database of basic metrics and keywords was created which may be used and built upon for further research. Analysis of the keywords highlighted the importance of finding coal to both William and his clients at the start of the nineteenth century. Mapping of the locational data from the letters revealed spatial trends in Smith's career. Some details, such as working on Christmas Day, show his dedication to his work, and the lack of religious references reveals his secular approach. Reinterpretation of some of Williams notebook entries showed his approach to understanding the geology of the Bath area, his family history or having a portrait painted.

Dr Philippa Towler is a hydrogeologist with a BSc from the University of Bristol and a PhD from the University of Bath. Initially she investigated the impact of landfill contamination on groundwater quality at the Water Research Centre. Subsequently, she built a career in land quality management and decommissioning projects throughout the UK, including Harwell. With her wealth of experience in the consulting industry, public engagement in geosciences and family history research she has found the

transcription of all William Smith's letters reveals a modern scientist experiencing frustrations that are familiar to us.

Dr Kevin Privett is a geologist with a BSc and PhD from the University of Bristol and is currently a Visiting Research Fellow at the University of Portsmouth. He has spent his working life in engineering geology consultancy, mostly in the civil engineering sector, but also in the mining sector plus some university teaching at Masters level. In 2018 he was awarded the prestigious Glossop Medal by the Geological Society of London in honour of his lifetime contribution made in the science of applied geology. His interest in William Smith, the "Father of English Geology" stems from the fact that Smith was also the first true engineering geologist, using geological knowledge to solve practical problems for his clients.

Saturday 8th March (Cardiff)

AGM & Dealing with the legacy of contaminated land across Wales – Jeremy Hucker

Dealing with the legacy of contaminated land is now a major element in any redevelopment of brownfield sites in the UK. In this presentation, Jeremy will discuss how environmental geologists investigate and assess risks posed by soil and water contamination on such sites, and the importance of getting the Conceptual Site Model right. Understanding the ground conditions (both natural and man-made) is crucial in this, hence the importance of a geological input. There will also be a bit of chemistry, but not too much for a Saturday morning.



Subscriptions 2024-2025

Subscriptions for the new session became due on 1st September. The rates are once again the same as last year; Ordinary £10, Optional Concessionary £5 and Family £10 plus £5 for each additional family member. Many of you pay by Standing Order so won't need to worry about this, but if not send a cheque to the Membership Secretary (Cindy Howells) at the Department of Natural Sciences, National Museum of Wales, Cathays Park, Cardiff, CF10 3NP or ask her for our bank details so that you can do it via BACS



Field Meeting reports 2024

Llansteffan, Carmarthenshire: Sunday May 12th

This walk is covered in detail in one of the SWGA leaflets that can be found on our web site. However, for further geological information about this walk please read on.

On the afternoon of the 12th of May, a misty day, with a low and falling tide (which is important for this location), 22 members gathered in the car park at Llansteffan where many partook of their picnic lunches before a very gentle afternoon walk. After Geraint's introduction we set off across the beach heading south and then west. The plan was for a short walk along the foreshore beneath the Castle at Llansteffan, into Scott's Bay to mostly examine the geology of the Old Red Sandstone rocks, which reveal evidence for the environment and climate in this area of south Wales about 400 million years ago. However, the first stop was to look at the much more recent Ice Age deposits, which had been nicely revealed by a minor cliff fall, which had kindly removed some of the vegetation cover.

The hard rock geology started to be visible at the next stop (Locality 2 on the leaflet) and here Geraint gave an overview of the desert and wadi environments that existed during the formation of these Old Red Sandstone rocks. This stop also allowed a detailed inspection of the Chapel Point Limestone Member with a description of the formation of the lime rich palaeosols and calcretes, which were going to be seen throughout the walk. We heard how several palaeosols are stacked one on top of another here, each one of which may have taken thousands of years to form, so this is not a rapid process.



Field party at Locality 3 © Andy Kendall



Geraint and calcrete layer at Locality 2 © Andy Kendall

Moving on we saw further calcretes and also features within the palaeosols, such as conglomerate and breccia beds indicating more or less distant travel of the source material since it was ripped up by flood events, and we started to see the overall structure of the rocks. Geraint then took us out of sequence from the walk leaflet and we headed directly for Locality 7. Here we inspected in some detail the micro-sedimentary structures of the ripple marks, Geraint leading a master class on how to interpret the direction of flow from their structure. We also learned how to determine which beds were formed in a low-flow, meandering environment and which were formed as channel deposits. Some huge channels, about 10m across, were visible in the cliff.



Large channel (left) and Geraint explaining the different horizons (right) both at Locality 7 © Andy Kendall

The sun was breaking through as we came back to localities on the leaflet that we had missed out. We looked at some of the thick sandstones, which are indicative of greater water flow, and saw how these were scoured into the floodplain deposits we had been looking at. We were also able to see some *Beaconites* burrows including (thanks to eagle eyed Nigel), some that had been cut through vertically showing how deep these burrows went into the (at that time) soft sediment. Geraint also explained that since the original leaflet for this site was written in the 1990s the creature that created these burrows has now been identified and we have therefore been able to update from “created by an unknown creature” to “created by a group of animals called *Eoarthroplurids*”.



Arthropleura. used CC licence created by Wikipedia user Qohelet12”

With all this expertise on hand, the day was a perfect opportunity to get the latest information to be able to update one of the final few walks leaflets on the SWGA website. This has now been done, so if you were not able to join us on the day you can find the leaflet on the SWGA website at <http://swga.org.uk/walks-leaflets> and more information and pictures at <http://swga.org.uk/geological-walk-at-llansteffan>.

Andy Kendall

Big Pit, Blaenafon, 14 September 2024.

After 30 members had gathered in the car park, we walked up to an excellent viewpoint at the top of the site. Our leader, Chris Lee, pointed out many features; the Big Pit headframe and surface buildings below; the Coity ventilation shaft (older than the Big Pit shaft) nearby; the hillside above pockmarked with old workings, especially former bell pits and levels; even higher an old quarry that once worked Pennant Sandstone for the lining of the extended Big Pit shaft in 1880, and the geology of the immediate area, including faults running across the site. Big Pit, the National Coal Museum [now part of Amgueddfa Cymru / Museum Wales], is a tremendous asset for Wales.



Then it was into a nearby building for a comprehensively illustrated talk by Chris who introduced the regional setting of the South Wales Coalfield. He explained the setting of Big Pit towards the eastern margin of this coalfield, and the geology and the faulting around Big Pit in more detail as well, of course, the product, essentially steam coal with low sulphur, low sparking, and low smoking properties, that is ideal for railway use and was once preferred by the Royal Navy for its ships. He commented on the techniques and the coal cutting machinery used in its extraction which, was some

250,000 tons a year, produced by 1300 men, in its heyday around 1913. It is estimated that over 3,000 million tons of coal in total were taken during its operating life.

Historical mention was made of the use of coal in the area by the Romans and by 13th century monks. In 1789 the Blaenafon Iron Works opened, second to those at Merthyr. There were many collieries

around, Big Pit itself opening in 1860. It had actually started off as Kearsley's Pit with a shaft depth of 39 metres then, with reorganisation in 1880, the shaft was widened to accommodate 2 drams side by side, hence "Big Pit", and its depth was increased to 89 metres. The lowest coal seam worked was the Garw Seam, not far above the Farewell Rock, with a thickness of around 70cm. The colliery closed in 1980, only to reopen in 1983 to the public as a visitor attraction and museum. After his talk we headed off for a quick look around the Pithead Baths and the upper museum before our tour of the underground workings.

We reconvened at the pit head meeting room where we formed two groups, the first off at 12.30 and the second around 13.00. The pit still qualifies as a working mine, so we were all fitted out with safety helmets, lamps, and rebreathers and before we entered the cage, we all had to deposit our phones, watches, lighters and any other potential source of electrical ignition (aka contraband) in a secure bag that was left at the surface. We then entered the cage, a bit of a crush, and descended to the pit bottom, which took a few minutes. On the way down, we all turned off our lamps for a short time, to experience and appreciate utter blackness.

Once out of the cage, we were led by one of the staff who gave us a running commentary as we moved through the tunnels. We noted that these were sectioned off by large sturdy wooden doors used to control the flow of air, the air flowing down one shaft and out of the other. These doors would be opened and closed by young children, in total darkness, when the pit first opened. The only light they had was when passing miners, men and women, pulled tubs or drams of coal.

Safety in the pit is always taken seriously. Methane gas explosions in pits have caused many deaths, not only from the explosions but also from the toxic gases produced, such as carbon monoxide. We noted bags of lime which, when spread around, can help stop coal dust explosions as well.

Ponies were once used to pull the drams of coal from the working faces to the shaft bottom. These were replaced by a cable system, where the drams were pulled along by long wire ropes from winding engines. The signals to operate this system were two bare wires running along the side of the pit tunnel that were squeezed together to operate a bell that told the engine operator to run the engine. However, these could produce a spark, so they were replaced by a rope system that closed a gas tight electrical contact that operated the bell.

We were then shown an example of a small working face in a stall, where a miner, probably working with other miners or family members, dug out the coal. This stall was about 8ft high, 10ft wide and 12ft deep. The area was supported by pine timbers which the family had to purchase and construct themselves. Only lump coal was used to fill the dram, any small coal was left. The dram, on being taken to the surface, was weighed and the owner paid. This was the only time we saw the coal underground. In the early days the only light the miner had was candle light, either home-made or purchased by themselves.

The next stop was the stables where ponies were once kept. The ponies originally spent all their working lives down the pit, where they were well looked after and fed well. If they fell ill, got old, or were injured, that was the end for them. They would have been cut up, removed from the pit, and sold for food. Their stables were constantly cleaned out, probably by children, to keep the rats down. Any pony droppings belonged to the mine owner and could be sold back to the miners. With the coal dust on the floor, the smell of people and ponies and no toilets, it was not a very pleasant place to work. After the pits were nationalised, everybody was given a two-week holiday, so the mines had to close down for this period. The ponies were then taken back up to the surface for a holiday, in a nice field with green grass. They were not very happy to be taken back down again.

We then headed back to the shaft bottom for the return to the surface. Here we met another group just arriving so our guide took us along another path to bring us out on the other side of the pit cage. Here we were shown an example of a Davey Lamp. Miners originally used candles as a source of lighting, but naked flames, if coal gas methane were around, could cause serious explosions. By surrounding the flame in a metal gauze any methane present will burn on the inside of the gauze and not set off an explosion. By surrounding the flame in a glass envelope as well, this enabled miners to light their place of work safely. Miners were also trained to observe the flame as any blue colour present would indicate the presence of methane. Canaries were also used to detect poisonous gases. Canaries are always chirping away quite happily in air but when taken down a pit, if they stop chirping and fall off their perches, that indicates danger. However, it would seem that apparently only a few Davey Lamps were in use, and only used by pit safety officers, who on noting any danger informed the others at work. However, Big Pit is not a gassy pit and naked flames were used underground until the First World War. One of our groups was also shown ironstone nodules, found in the layer above the coal, which from time to time might drop down from the tunnel roofs and cause damage, injury or death.

At 2pm we finally arrived back on the surface. We disposed of our helmets, lamps and rebreathers, and our contraband was returned. We then headed to the café for refreshments and a chat.

For the rest of the afternoon, we had the opportunity to visit the various surface exhibits. One very good exhibition showed what mining was like in more recent times. The first part was a film on the use of equipment. Then followed a short walk to another part showing the use of explosives, then another showing the need for constant maintenance to maintain roof supports, then an example of a miner cutting coal onto a conveyor. Finally, a good illustration of Long Wall mining.

A few of us returned to the upper museum around the Pithead Baths. This showed more aspects of the people and the mining at Blaenavon, and other pits in the coalfield. At last, we found an excellent comprehensive exhibit about the geology, how coal formed, fossils, and about colliery agent David Davies of Gilfach Goch who assembled a collection of fossil plants from working mines in the South Wales Coalfield, over 16,000 of them, now in Amgueddfa Cymru/ Museum Wales. Whoever had put this display together had undertaken a lot of background work (It was Tom Sharpe – Ed).

An excellent visit, on a perfect early autumn day, with many thanks to Chris Lee and Amgueddfa Cymru /Museum Wales.

Dave Wellings and Lynda Garfield



Notes from the Fforest Fawr Geopark:

By mid-December, Fforest Fawr Geopark should know the result of its latest revalidation by UNESCO. Each Global Geopark is effectively subject to peer review on a four-yearly cycle and we've gained 'green cards' in all previous ones. Like so many other things, maintaining a Geopark is getting harder as resources diminish across the public sector and we all need to be smarter in finding such useful pots of money as may be available. I am pleased therefore to be able to report some success on that front:

Geopark expansion proposals

The Geopark received a grant from Neath Port Talbot CBC to undertake a feasibility study for its potential expansion into the northern fringes of that borough. Planning Solutions Consulting have been busy in recent months talking to groups and individuals with a stake in the area to understand what

support there is. Initial results are encouraging but we shall have to wait until early 2025 before a final report is produced.

The key Geopark interest in the southern fringe (NPT and other areas) is in the varied legacy of coal and ironworking together with a host of features deriving from glaciation. Visit <https://www.forestfawrgeopark.org.uk/geopark-expansion-proposals/> for more information.

Climate Change and UNESCO Heritage Project

We responded to a call from UNESCO's UK National Commission for UNESCO sites across the country



to participate in a pilot study and were delighted to be chosen as the representative site within Wales and of the Geopark network alongside North Devon Biosphere and the Frontiers of the Roman Empire World Heritage Site (mostly the Hadrian's Wall part though Scotland's Antonine Wall gets a look-in too!). During phase 1, which lasts until summer 2025, the UK government funding, administered by the UKNC for UNESCO and DCMS, is enabling each site to consider new ways to collaborate with partners and look at what data is available on the topic and to find

ways to use it to best effect. If Phase 2 funding can be gained then that will enable some practical outcomes on the back of the exercise. The intention is that methodologies will be rolled out to all UNESCO sites across the UK (of which there are around 60) and indeed rather further afield.

We had identified landslips as one particular issue in our area likely to worsen through climate change. An increased frequency and intensity of heavy rainfall events, like Storm Bert, have certainly tested the Geopark and Valleys communities in that respect recently. Visit <https://unesco.org.uk/three-sites-announced-as-pilot-locations-in-groundbreaking-climate-change-unesco-heritage-project/> for more information.

Wealth of Water

Staying with that topic, the Geopark expects to launch a new walking trail from Craig-y-nos Country Park in 2025. A valley-based route for those wanting to avoid the exertions involved in the existing Cribarth and Penwyllt trails, which climb high and steeply, '*Wealth of Water*' will focus on the role of water in the shaping of the local landscape – in the past and at the present, and in its liquid and frozen forms – there is glacial, fluvial and karstic interest aplenty.

The leaflet will add to the Geopark interest at this site which, having been designated the Geopark hub, has seen various investments made in recent years. A kind donation from the Friends of the Brecon Beacons and a recent Local Nature Partnership grant, together amounting to more than £10K, are enabling further facilities to be developed which will include some immersive interpretive experiences.

Alan Bowring



News from the GA

The Festival of Geology 2024, Geological Society, Burlington House, London.

The annual Festival of Geology in November is organized by the *Geologists' Association* and takes place in London most years. For those who have never attended, it is an excellent way of finding out about other GA groups and other geological organizations. It was originally branded as the GA 'Reunion' and was an annual chance to meet up with friends and colleagues from around the UK.



The customary home of the festival has usually been in University College London, Gower Street, but due to renovations taking place there this year it needed to find a new home. It came as quite a surprise to hear that it would be held in Burlington House, Piccadilly, which is where the main GA and also the *Geological Society of London* are based. Burlington House is a marvelously grand and much-extended Neo-Palladian mansion which had its first origins somewhere around 1660 when Piccadilly was still a country lane! Since then, the building has been vastly extended and altered, both inside and outside, whilst

London has encroached from either side. The huge building now houses the *Royal Academy* as well as five learned societies, with the *Geological Society* inhabiting the front of the east wing. Some of the rooms inside have altered little, and are architecturally beautiful, particularly the Lower Library with its narrow balcony bookcases which really takes you back to a previous era. There is a nice modern lecture theatre which holds around 150 people, and several committee rooms which are fully enabled for hybrid meetings. Many of the walls bear portraits (original paintings no less) of early geologists, and the impressive, sweeping staircase is an ideal place to survey their framed Smith and Greenough Maps (although normally covered by a curtain for conservation reasons).

So, it's certainly an impressive place to visit, or attend a meeting, but would it work as a venue for a fossil fair? Normally the festival occupies the entirety of two long cloisters, with the addition of smaller side rooms for *Rockwatch* activities or special events. This year, the available space was much less, with stall holders split between four medium size rooms, on two floors. Bearing this in mind, our committee had decided not to take our usual display of handling specimens and second-hand books, but instead just to take a poster advertising the SWGA. In the end we were still given a small table space in front of our display board, so we were able to lay out a few of our more recent A3 posters and also some of the updated walks' leaflets, with a QR code to direct people to our website. This meant that we didn't have to babysit our stall quite so vigorously and were able to wander round and do some networking. As I was giving a talk during the afternoon this also limited our time on our stall.

In the past we have attended this event with at least four or five other members of the group, and this is really needed if we are to have a proper display. It's quite a busy day, getting up early and travelling to London, setting up,



and then being behind the stall for six hours before taking it down and going home. It's really rewarding having so much interaction with interested public, but we all need frequent breaks to stay refreshed, fed and hydrated, as well as having the chance to wander round, chat, and appreciate the other stalls. We had decided to keep everything minimal this year, so didn't press for volunteers, but it would be lovely to think that we could make a much bigger effort with more volunteers next year, or when the festival returns to University College London.

We have previously displayed posters and specimens to promote our local geology, with themes like Welsh Jurassic and Triassic, Carboniferous plants, RIGS projects, Welsh dinosaurs, and historical and

Geologists' Association South Wales Group

Who are we:
The South Wales Group of the Geologists' Association (SWGA) is an amateur organization based jointly in Cardiff and Swansea. Our members come from all walks of life and are united by a common interest in geology. The SWGA has enjoyed over 60 years of close collaboration with Cardiff and Swansea Universities, as well as the National Museum of Wales, and greatly benefits from the academic expertise offered by this relationship.


We welcome members of all ages, and with all levels of geological knowledge.

South Wales provides an exceptionally broad range of geological interest. Rocks range in age from volcanics of the late Proterozoic through to very recent sediments, and show evidence of volcanoes, deep oceans, shallow seas, hot deserts, coastal lagoons and tropical forests.




Excursions:
We run field-excursions around once a month between April and September. These can be held across the whole of South Wales or into south-western England, but are usually less than two hour's drive from either Cardiff or Swansea. We also hold a family fun day in August each year, identifying fossils on Penarth beach.

Talks:
Regular lecture meetings are held in Cardiff and Swansea during the winter months (October to March). Topics are chosen to be of interest to all ages, and we aim for a variety of subject matter within each season. Each meeting starts with refreshments and an opportunity for chat. In January each year we hold 'Holiday Geology' - a meeting where any members are welcome to spend ten minutes presenting a short talk about their geological holidays.


Website:
Aside from information about the committee and how to join, our website hosts recent and past newsletters, and also a valuable archive of local geological walks presented as downloadable pdf's. These are constantly being updated with further information and good colour photos. Recordings of most of our recent talks are also available on our website.



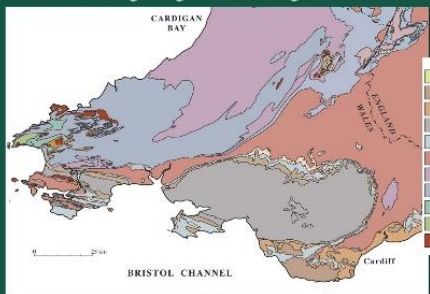
swga.org.uk

Triassic/Carboniferous unconformity on Sully Island




Excursion to Barry Harbour




Geological map of South Wales showing various geological periods: Palaeogene, Jurassic, Permian and Triassic, Coal Measures & Millstone Grit, Carboniferous, Devonian, Silurian, Ordovician, Cambrian, Precambrian, and Igneous.

Publications:
We produce regular newsletters at least four times a year to keep our membership up to date with forthcoming events, as well as articles of interest. We have published several guidebooks to local geology by our members - the most recent one being 'The Land of the Beacons Way' by Dilys Harlow.




Committee:
Committee meetings are held four times a year with an AGM in March. We welcome all applications to join our committee to assist with organising meetings, producing newsletters, and many other regular tasks. Meetings are currently held just outside Cardiff or can be accessed on Zoom if needed.

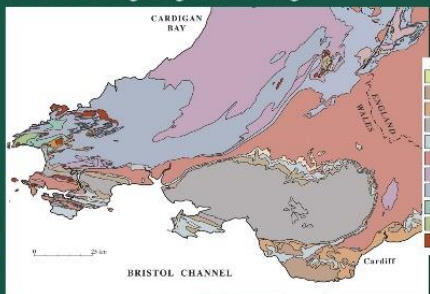
Membership fees:
Our normal membership fee is £10 for each year. Families are charged the basic £10 plus £5 for each additional member. We also offer a concessionary rate of £5 for all unwaged members - of any age. Please contact membership@swga.org if you are interested in joining.




Excursion to the Forest of Dean




Jurassic strata of the Glamorgan Heritage Coast





Triassic/Carboniferous unconformity on Sully Island



Excursion to Barry Harbour

mineralogical themes too. So, if anyone has any great ideas about potential themes for next year, please do let me know. I'm happy to help put together a professional-looking display poster or two and discuss ideas, but we really feel that we need fresh new input going forwards to help promote the group and our activities and ideals. It's great to be able to take a few (really just a few) specimens that are robust, interesting and spectacular so that people are visually drawn to our stall. Usually, I'm happy to take my car up there with specimens, posters, books etc, so that very little needs to be carried. There is always some availability for stall holders to drop off stuff then park nearby. The SWGA will also happily pay for your travel and lunch expenses for the day if you are willing to attend and help on the stall for a while at least.

So how about it? We've got almost a year to plan for the next one – usually the first Saturday in November. We'll need at least four volunteers to help on the day, and to have ideas well in hand by the end of next summer so that we can book a table or two. Have a think and let me know!

Cindy Howells

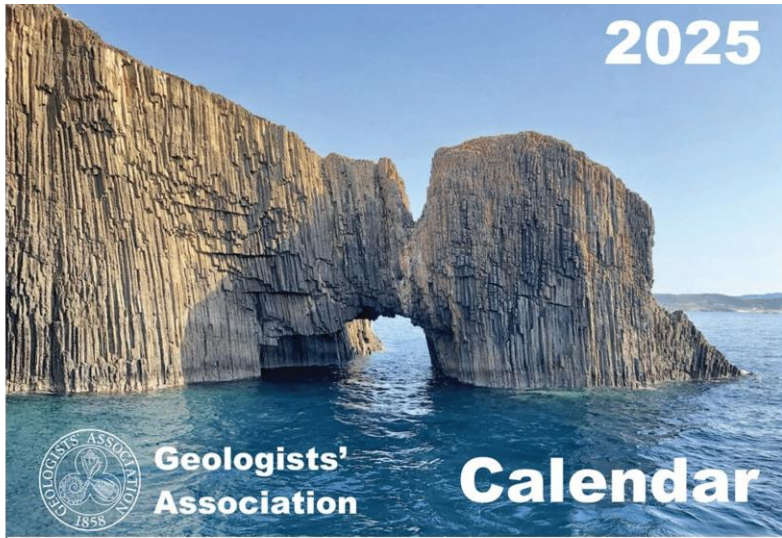
Web: www.swga.org.uk

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GA Calendar

Stuck for a last-minute Christmas present idea? If so, why not consider the 2025 GA Calendar that is now available from the GA for £5 +p&p. Each month is illustrated with one of the stunning photos from the annual GA Photographic Exhibition (see image below)



The Geologists' Association

For everyone interested in the story of the Earth



The GA actively promotes the study of geology to all who are interested in the past, present and future of the natural world. It welcomes everyone, regardless of the level of their knowledge.

Membership benefits include a magazine, a journal, monthly meetings, conferences and field visits. The society also has a library, publishes guides and runs the Festival of Geology in London. The GA also runs a nationwide club for young geologists and their families. (www.rockwatch.org.uk).

The offices of the GA are located with those of the Geological Society in Burlington House in Piccadilly in Central London. For enquiries about membership please email the Secretary at sarah@geologistsassociation.org.uk or telephone: 020 7434 9298.

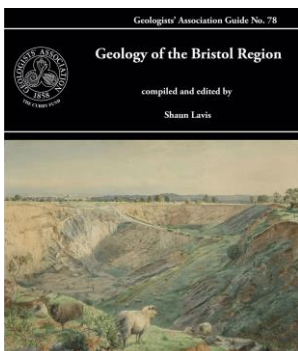
www.geologistsassociation.org.uk

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Cover photograph: Natural arch in columnar jointed andesite lava at Glaronisia (Seagull Islands), off the coast of the island of Milos, Greece. The volcanism dates from around 700,000 years ago and the columns are as a result of the slow cooling of the lava. Photo © Stamatina Marinatou. GA PHOTO COMPETITION 2024 – HIGHLY COMMENDED

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New GA Guide to the Bristol Region



As it is only just across the Severn Bridge the new GA Guide **Geology of the Bristol Region** may be of interest to you. Published to coincide with the GA Annual Conference that was held in Bristol last September, the guide contains an introductory review of the geology of the region with a special section dealing with the Lower Carboniferous of the region. Then follow sixteen excursions, written by various authors, that cover the coast from Weston-super-Mare to Aust Cliff, the Mendips, Chipping Sodbury, the Avon Gorge, the Jurassic of the Bath and Saltford areas, the geology of the Bristol to Bath Railway Path and finally two excursions to examine the building

tones of the city centre and Clifton. This comprehensive 322-page, spiral-bound guide costs £25+p&p, with a £5 discount to GA members, and is available from the GA web site.



World Geological Heritage Site status for Welsh Wye Valley location

On 2nd September, Cavansham Ferry and Llanstephan Quarries, located between Boughrood and Erwood in the Wye Valley in Wales, was officially recognised as a globally important Geological Heritage Site by the International Union of Geological Sciences (IUGS), which is one of the World's largest scientific organisations. The location is one of 200 sites carefully selected by panels of experts, from more than 40 countries, as being the most iconic geological sites in the world. For a description of the site go to: https://iugs-geoheritage.org/geoheritage_sites/cavansham-ferry-and-llanstephan-quarries/.

Cavansham Ferry and Llanstephan Quarries is the location where, in 1831, Sir Roderick Impey Murchison, a giant of 19th century geology, first met rocks which led him to believe he could untangle the order and age of the rocks in Wales and the Borders. Murchison went on to devise 'The Silurian System' as a major division of geological time that is known and used internationally to describe rocks formed between 444 to 419 million years old. The site was significant for Murchison as the place he 'discovered' his great period of Earth's history, writing in his notebook "*N.B. This was the first true Silurian.*" He named his period after the ancient Welsh tribe of the region, the Silures.

The precise location of the site was uncertain until 1997 when a local geologist, Duncan Hawley, used Murchison's original field notes and systematic inspection of the ground to rediscover the site. Since then, the location has been visited by geologists, from the U.K. and overseas, and features in a popular book '*The Greywacke*' by Nick Davidson (Profile Books, 2021) that tells the dramatic story of the 19th century scientific rivalry in the discovery of the Silurian and its geological 'neighbours' of Cambrian and Ordovician rocks.

The defining of the Silurian Period holds great significance in geology, so this site is particularly important to the history of the development of geosciences. Mid-Wales and the Wye valley region can be proud of the recognition of Cavansham Ferry and Llanstephan Quarries as an IUGS Geological Heritage site; it is a site that deserves appreciation and visibility for its value in the history of geosciences.

The full list of IUGS Geological Heritage Sites can be found at <https://iugs-geoheritage.org/designations/>

Duncan Hawley



SEWRIGS

Regionally Important Geodiversity Sites (RIGS) are non-statutory sites selected to protect the most important places for geology, geomorphology and soils, complementing the network of legally protected Sites of Special Scientific Interest (SSSIs). RIGS are selected for their scientific, educational, historical and aesthetic features.

We are fortunate to have so many sites worthy of protection. The industrial heritage of south Wales means that there are many quarry exposures which have been identified as RIGS, and our coastline affords many more, but we have many others making a hugely diverse set.

On first inspection of the RIGS list, the unfamiliarity of many of the locations left me somewhat overwhelmed. Where to find them? Rather than dig out the OS map and look up the grid references, there is a short cut. We have a great resource in Datamap Wales, which, after some teething problems, now shows all Welsh RIGS. To remind anyone who isn't that familiar with the site:

Type datamap wales in your browser and search.

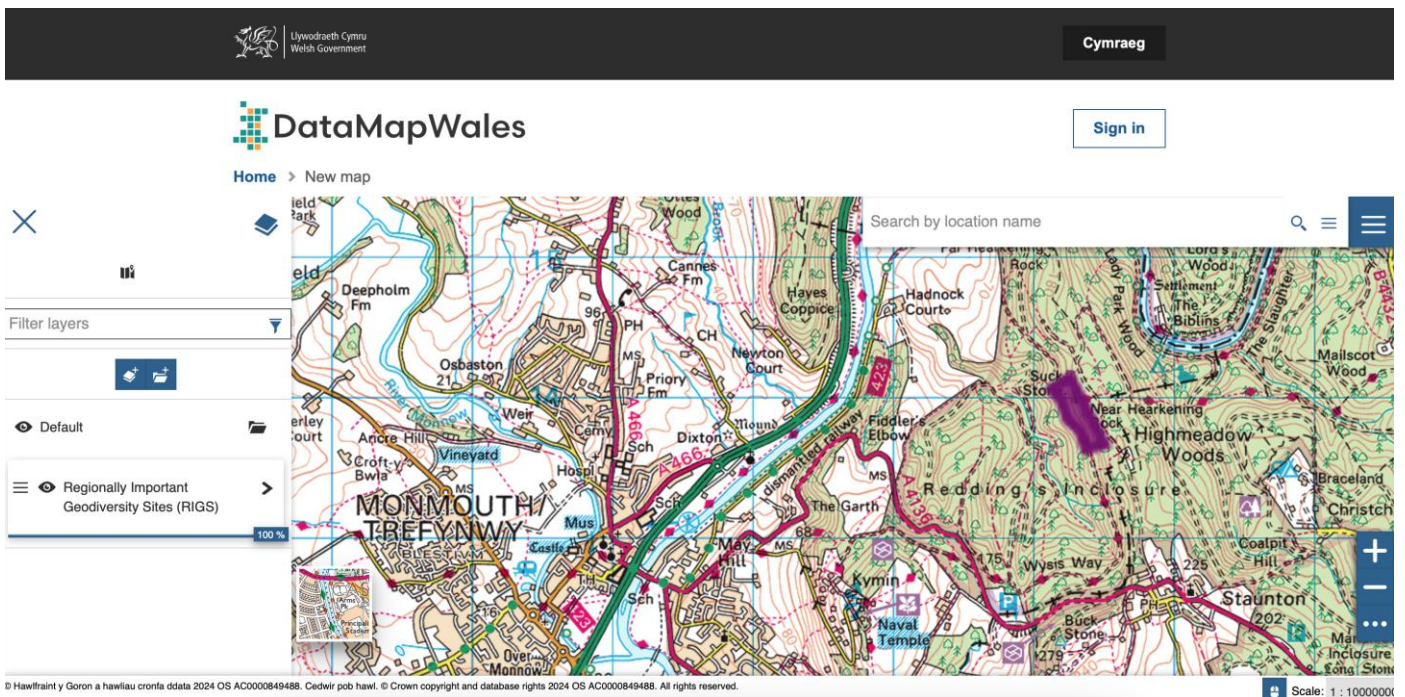
Click on the link to the home page which brings up a search box.

Enter RIGS and return.

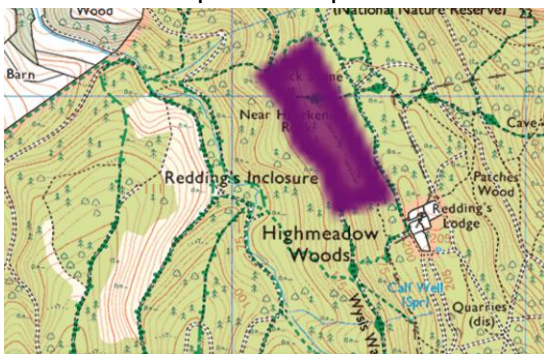
A new page opens with RIGS as the first entry. Click on this.

Another page opens. Click on the green "Display in map viewer" box. Click + to zoom.

Click on the purple shape to get the name and category.



A useful new feature has been added. Click the map icon and it will give you a choice of basemaps. This is great as the OS maps allow you to see whether the site is likely to be publicly accessible or obvious from a public footpath.



The outline of the RIGS is in purple. The definition isn't great on higher magnification. The eye shape in the box to the left of the square map icon is to allow you to toggle between different layers. So having looked at the map, familiarizing myself with sites local to me (in Monmouthshire) seemed the obvious first step. Then I went for the ones with the oddest names.....

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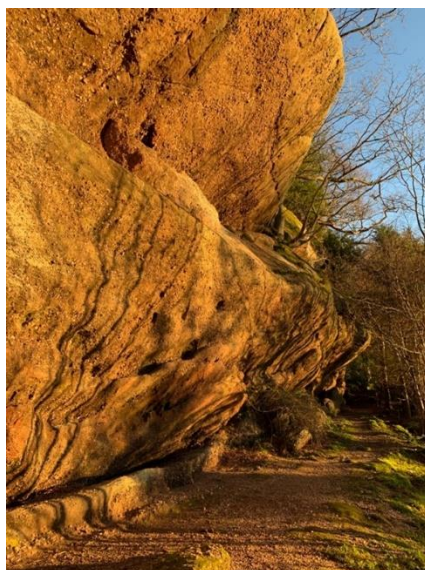
The Suckstone RIGS (SO 54214 14016)

A pleasant forest walk leads to this site near the crest of a steep valley slope, not far from the border village of Staunton. The site comprises a huge, reputedly 14,000 ton boulder of Devonian aged Old Red Sandstone quartz conglomerate which is curiously detached from any other structure, although some 30m higher, but laterally displaced away to the south, is a cliff structure called the Near Harkening Rock (also part of the RIGS) and also of quartz conglomerate. The boundary with the underlying brownstones is mapped between the two exposures.

The dip of the bedding of the Suckstone does not match the Near Harkening Rock. It appears to have fallen over, but the question is, from where? Despite the temptation to invoke a massive glacier (this is just south of the limit of Devensian glaciation) or a massive landslide from a lost landscape, the most probable explanation is that it is one of a series of tors dotted on the steeper reaches of the valley sides. Periglacial weathering and over-deepening of the valley left tors of resistant rocks, in this case the quartz conglomerate. Some were on the crest of the valleys, but others can be found on lower parts of the slopes. Exposed to the freezing weather, erosion of the underlying less resistant Brownstones may have resulted in the base of a tor collapsing and falling over.



The Suckstone (Left) and the glittering quartz conglomerate of the Suckstone (Right) ©Elen Staham



The Suckstone from downslope to the SE (Left). The Near Harkening Rock tor from below (Middle) and above (Right) ©Elen Staham

The Near Harkening Rock is so called as it was allegedly a listening point for gamekeepers. The acoustics would allow them to pick up a “poacher’s whisper “in the valley. And the etymology of The Suckstone? No idea.

Want to know more about SEWRIGS? Get in touch and join us - secretary@swga.com

References

A Humpage, **RIGS report The Suckstone and the Near Harkening Rock**

Wikipedia- Staunton

Controls of tor formation, Cairngorm Mountains, Scotland

[Bradley W. Goodfellow](#), [Alasdair Skelton](#), [Stephen J. Martel](#), [Arjen P. Stroeven](#), [Krister N. Jansson](#), [Clas Hättestrand](#)



News from the Museum:

Explore Volunteering

Explore volunteers run small trolleys showing items from the natural history stores at Amgueddfa Cymru/National Museum Cardiff. We can choose what we use for visitors to look at, discuss and handle. Most days are ‘covered’ with volunteers having a 2-3 hour slot morning or afternoon, and in some cases 2-3 trolleys are active at one time.



We all have our favourite items: the replica mammoth tooth, the brown python skin and the polished ammonite fossilised with various shiny minerals are probably the stars, though other fossils, teeth, shells and animal skulls are also high on the list. We volunteers have asked for more items to show to visitors, and also for a box of geology specimens.

We can set up our ‘stall’ where we like and I have sat near the *Evolution of Wales* gallery for a few years. It is a good place to attract visitors and show some items that are not dinosaurs but lived at the same time, or even earlier. Most adults with children are in this area and respond well to an invitation to look at the fossils, and appear to enjoy the story of the creature’s life. I think that this, with some explanation about the gallery, helps their enjoyment of their visit. Some parents and grandparents have said they wished they had known some of this information when they were young! I think it helps visitors to focus and enjoy more of the museum as they walk through it.

One example is the small trilobite, from the Sahara Desert. We ask people to guess where it was found and have already explained that it lived over 500 mya and crawled around the seabed.... people are amazed to hear that it was discovered in the Sahara, and we can then say that millions of years ago this was an ocean or possibly in a different place on the earth... so one fact leads to another. We can also point out that there is a piece of fossilised seabed showing the trilobite crawling trail! I hope this makes people think (it did me).

Another fact from our training (thank you Cindy!) is that there are places in the gallery where floor rises or falls, and that this represents when Wales (and presumably Europe) was land or underwater at that point in time. This explains why we had none of the large dinosaurs that lived at the end of the dinosaur period... this information goes down very well. Some people say they wondered why we had no T. rex etc.

Everyone says 'wow' when I shine a torch through the polished, mineralised ammonite. Having talked about the ammonite's lifestyle and allowed people to touch and hold the fossil carefully (there is already some damage so it is kept in a biscuit tin, with padding.... Is that a scientific thing?), they have verified it is solid, a stone and so on... then shining the torch through and seeing the lovely patterns brings out the 'wow' as it is such an unexpected moment. If visitors have very young children or babies then the torch moment may appear on its own and a little explanation after.' I can only do this because it is a fossil and has shiny minerals inside'.

I think visitors appreciate seeing and discovering something new about fossils/life and that this enhances their time at the museum. Certainly, it has contributed to my own knowledge and especially in retirement, it is valuable to learn new things.

Linda Price



What a gem!

I always wanted to find a trilobite with a head. And at last, I did, in Barry! It was in the SHUA (cat sanctuary) charity shop. There, besides a large section of books, a rarity these days, they have a superb collection of, mostly imported, fossils and minerals for sale.

With a zeal to promote their study and collection they are priced very keenly. Depending on what's selling fast, you will find trilobites (with cephalon), sharks' teeth, fossil bone (dinosaur?), whole and cut & polished ammonites, agates, amethyst geoids, selenite (raw & carved), celestine, and labradorite; the list goes on. I think one was a dinosaur tooth.

Need a gift, or a treat? You'll find SHUA at 97 Hight Street, CF62 7DY. It's generally open Tuesday, Wednesday, Thursday and Saturday. It is for a very good cause. And it's opposite the Barry Island Gin shop, (also worth a visit!).

Bob Standley



Reminder

- Most of our lectures are recorded and uploaded to our website (www.swga.org.uk) for a few months.
- We also 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!
- **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



Contacts for other local geological organisations

- **Welsh Stone Forum (Fforwm Cerrig Cymru):** Contact: www.museumwales.ac.uk/en/welshstoneforum
- **Open University Geological Society (Severnside Branch):** 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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