



Newsletter September 2026

Sixty Eighth session

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Welcome to the Autumn Newsletter. In this edition you will find the details of the last field meeting and part of the Winter 2026-27 programme of talks. There are also field meeting reports, updates from SEWRIGS and the museum, Holiday Geo-snaps, plus a number of other items. As usual I thank all those who have provided articles, without whom this Newsletter would be rather sparse.

I am hoping to get the next Newsletter distributed before Christmas, so would be grateful to receive items at any time up to 1st December for inclusion in that edition. Please submit any text as a Word file and any images separately as jpeg files. **Please don't send a ready formatted article with inset images** as these are very difficult to drop into the Newsletter format. In the meantime, I hope that you find something of interest in the upcoming programme.

Stephen Howe



Message from the President

As I am writing this, we are still in the midst of fairly stupid weather conditions, and our garden is looking increasingly crispy. I hope that you are all surviving the heat and the drought, and managing to keep cool and hydrated. Recently, we managed to make a long overdue trip to Market Rasen in order to pick up a couple of small cabinets containing minerals left by Robert Appleby (University College, Cardiff) to his technician and our long-standing SWGA member, Howard Bartlett. Howard and Robert worked very closely together for many years, especially developing a technique designed to help reshape distorted three-dimensional objects – his Analogue Video Reshaper (AVR). Appleby had been a radar specialist during the Second World War, and developed mathematical grids to help chart three-dimensional objects, such as submarines, purely through radio waves. The technique was then expanded to enable charting of all manner of distorted objects, from ichthyosaur skulls, to human jaws and finger-prints used in forensic analysis.

Robert Appleby died in 2004, leaving these cabinets and their contents to Howard, although this fact didn't come to our attention until several years after his widow Valerie died in 2016. Appleby's niece,

Jane, came to hear of Howard's sad death in 2018, and got in touch to let us know about the items that Robert had left him. For various reasons it's taken us eight years to organise making the long journey up to Market Rasen, but we finally made it.

We didn't have any idea what would be in them as Jane had said the drawers were jammed. I've now started sorting through the specimens, which really are a very mixed bag. I've thrown out the decayed pyrite and various chunks of random sandstone, and hopefully will be in a position to bring the rest, plus the small cabinets, along to one of the autumn meetings for members to take their pick from.

The committee are currently in the position of trying to organise the winter programme, which is as difficult as ever with no-one to co-ordinate this. **Please** have a think whether you'd be willing to help, by contacting potential speakers (suggested by all), and venues, and keeping track of what's happening.

Cindy Howells



SUBSCRIPTIONS 2026/27

Subscriptions for the forthcoming 2026-2027 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 (Geraint Owen) at 9 Ffynone Close, Swansea SA1 6DA, or ask him for our bank details so that you can do it via BACS.



Summer Field Meeting Programme 2026

Saturday 26th September. Uppermost Cwm Dyar and Blaen Pig, Monmouthshire. Leaders: *Alan Bowring & Dilys Harlow* (10am-3.30pm)

We shall start from informal roadside parking at SO 2436 1189 (near the former Lamb and Fox inn), which is reached by turning west off the B4246 opposite Keeper's Pond and driving for 1km down what is now a cul-de-sac minor road. There are no facilities in this area so ensure you've everything you need from food and drink to weather protection etc. The walk will be up to 5.6km / 3.5 miles in length and includes around 180m / 590ft of ascent on what is often rough ground. This exposed site lies 400-480m above sea level and affords little shelter from the weather, be it sun, rain or wind. Please bring a hard hat if you wish to approach former working faces and gullies which contain plentiful loose material.

The extractive workings of the C19th and early C20th have resulted in excellent sections through the Lower and Middle Coal Measures of the South Wales Coalfield, from the Farewell Rock at its base, as well as exposing plentiful fossil-rich mudstones and thin sandstones together with multiple coal seams and clay ironstone nodules. Another extensive sandstone, which has been quarried, provides the ridge and southerly dip-slope. The fact that this early open-casted landscape was never reclaimed led to its part inclusion within the Blaenavon World Heritage Site. It also forms the core of a RIGS site designated for these and other reasons.



Winter Programme 2026/2027

As you will see from the sparse details below, the lack of a Programme Secretary to coordinate our summer and winter programmes is gradually having a bigger and bigger impact on our future planning. At the time of going to press there are a number of uncertainties, both in speakers, titles and location of our meeting place in Cardiff, but as these are firmed up you will be updated accordingly. The Swansea meetings will take place in our usual venue at the Trallwn Community Hub, Bethel Rd, Llansamlet, Swansea SA7 9QP. To date the programme stands as follows:

Saturday 24th October 2026 (Swansea)

Emma Watts: From ash to eruption: using volcanic fingerprints to uncover Japan's volcanic history.

Volcanoes are among the most dynamic features on Earth, yet understanding how often they erupt and the style of their eruptions remains a major challenge. Each volcano has its own personality, but there are also similarities between them. Volcanic tephra, fragments of magma ejected during an eruption, such as ash, is commonly produced by volcanic activity and can be dispersed hundreds of kilometres from its source. So how can we use tephra to our advantage?

In this talk, we will explore how the chemical composition of tephra can be used to fingerprint volcanic deposits and track the distribution of volcanic ash across large regions. We will then discover how these layers of microscopic volcanic ash, preserved within sediments from Japan, the Sea of Japan, and the Pacific Ocean, act as time capsules. By matching these volcanic fingerprints to their source eruptions, we can reconstruct thousands of years of volcanic activity and uncover the hidden history of Japanese volcanism.

Saturday 21st November 2026 (Cardiff)

Kevin Privett. Underground gas storage and the Portland landslide complex

An oil and gas company had proposed an underground natural gas storage facility in salt deposits 2.4 km beneath the Isle of Portland in Dorset and had bought a lease for land at a former naval shore base. Unfortunately, the site was in the middle of a large landslide complex, said to be one of the most active in the UK. In order to obtain Planning Permission and to inform the Safety Case and, therefore, the engineering design it was necessary to understand the nature of the slip movement. It is never possible to prove that something will NOT happen, so a multiple lines of evidence approach was adopted to better understand the geotechnical risks. The talk discusses the evidence accumulated to obtain regulatory approval for the proposed facility.

Saturday 5th December 2026 (Swansea)

Ake Forgoing: (title tbc)

Saturday (tbc) January 2027 (Cardiff)

Holiday Geology

Saturday 20th/27th (tbc) February 2027 (Swansea)

Keith Nicholls: Origin and working of the Staffordshire Rearers

Saturday (tbc) March 2027 (Cardiff)

AGM and talk (tbc)



Field Meeting Reports

Saturday July 18th: Sawdde and Carn Powell, Carmarthenshire: Leaders: *Rob Hillier & Dick Waters*

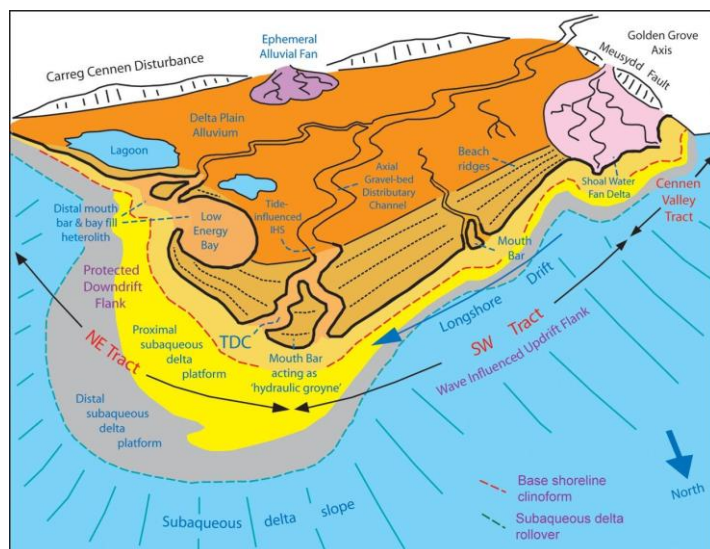
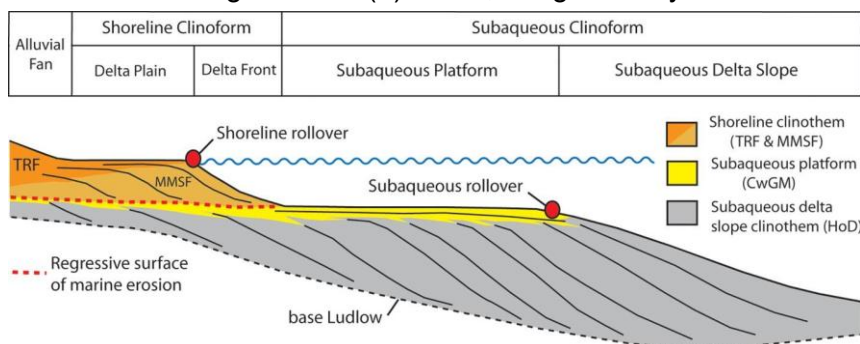
CHRONO - STRATIGRAPHY			THIS STUDY
Series	Stages & Substages		
LUDLOW (part)	Ludfordian (part)	Lentwardian	Cae'r mynach Formation
			Cribyn Du Member
	Gorstian	LIM	Trichrug Formation
			Mynydd Myddfai Sandstone Formation
			Cwar Glas Mbr.
	Eltonian		Hafod Fawr Formation
			KCF

This trip examined the Ludlow age delta systems that bordered the southern margin of the Lower Palaeozoic Welsh Basin and that presently crop out within the Myddfai Steep Belt. Twelve of us met our two excellent leaders and we consolidated into 4 cars as the parking places we were heading for were not that roomy. A quick drive took us to our first location, Carn Powell (SN 684 221), where we were pleased not to need the wet weather gear for the walk that had been mentioned in the brief, but we did suggest people took sun protection instead. It was a short, reasonably gentle walk to the first crop where Dick gave us an excellent overview of the mapping of this area, including the structural overview with the Lower Palaeozoic to the North and the Carboniferous Limestone to the south including Carreg Cennen castle,

as well as the folding that gives rise to the steeply south-eastward dipping strata that we were looking at, and how previous BGS studies had related these rocks right across to the Knighton area. Then Rob brought us up to date with the current understanding of delta formation and how the outcrops we were going to see here would relate to different parts of a delta.

A key understanding that Rob wanted to make clear and was re-enforced during the day was the fact that deltas are not simple offshore structures. They often have complex features and the deposition above the Subaqueous platform, as show in this diagram from (4) below, is significantly different from that below.

We then had a close look at the sequence here with Rob pointing out the detailed sedimentological features on each successive bed and relating the different stratification types to the different depositional environments. The



Hafod Fawr Formation comprises subaqueous delta slope deposits, while the Cwar Glas Member indicates shoaling and wave/storm influence within the overlying subaqueous delta platform deposits of the succeeding Mynydd Myddfai Sandstone Formation, which is a shoreline delta lithofacies where we saw the bivalve *Grammysia*. We also discussed at this location the differences between wave created ripples, current created cross-bedding and were able to see these in some of the outcrops. On the top of the ridge there were no cross-beds in the thicker sandstone

beds before the sequence became muddier, but this was hidden under the grass in the fields to the south. Another feature that was introduced at this location was the fact that this delta was not simple in shape and that a significant amount of the sediment, brought eastward by longshore drift, was absent to the east of the main channel. It was also explained that the main channel had probably moved eastward because of this drift and that an earlier mouth bar had probably existed as shown in this diagram from (4). At this location we were on the updrift side of the mouth bar examining the southwest tract.

A key feature of this southwest tract that was discussed, and would be contrasted with the northeast tract later, was the absence of mudstones (well only very small occasional amounts), which was explained as due to reworking of the deposits by storms whilst still unconsolidated and the muds being taken further down the system.

We then headed over to the Sawdde Gorge. The first location was close to Pen Arthur Forest car park (SN 722 250) to look at the northeast tract, which records deposition in a low energy bay that hosted cycles of heterolithic lithofacies. A key feature here, as noted above, was the relative abundance of mudstones, which overall dominate the exposures with some fine sandstones and some limestone beds included. The 'Hydraulic groyne' was explained to be the key factor in this sediment separation. We started in the Upper Wenlock and then had a close look at the Sawdde Ironstone, which has erosional surfaces at top and bottom, and consists of heavily haematitic ooids and bioclasts with all the hollows filled with haematite, which has been interpreted as being brought in from an eroded hardground elsewhere.



Fig 1 (left): Grammysia, Carn Powell. Fig 2 (centre): Mynedd Myddfai Sandstone. Fig 3 (right): Cross-bedded sandstones, Carn Powell. All © Andy Kendall

After lunch we moved a short distance south to the sections below and then above the bridge at Pont-ar-llechau (SN 728 244). We started about 100m south of the bridge in the Cwar Glas Member and made our way up to the Mynnydd Myddfai Sandstone where sediments with a coarser grain size can be found, and then up into the Trichrug Formation "Old Red Sandstone" which went on for many more metres. We finally made our way, carefully, beneath the bridge to the south where we were moved up the sequence from the Gorstian into the Ludfordian and were able to look at the micaceous fine-medium grained sandstones of the Tilestones Formation, which we had seen at Carn Powell only as heavily worked out units. It was noted that there are very few properties left with these original Tilestone roofs. Finally, the mid-Pridoli Pont ar llechau Formation, the age of which has been reassessed using arcitarchs and is now considered to be unconformable above the Tilestones, which differs from earlier work which had considered the unconformity to be below the Tilestones.

We finished the event with a drive back to the cars that had been left and where thanks were given to our leaders in the usual manner.



Fig 4 (left): The group traverse the Sawdde gorge. Fig 5 (centre): Wenlock mudstones. Fig 6 (right): The base of the Ludlow Ironstone. All © Andy Kendall

Diagrams used under Creative Commons CC BY license, and thanks to Rhian who gave me her much more detailed notes to aid this write up, any errors are of course mine not hers! References were provided which are well worth looking at for further details and detailed discussion of the formations we looked at and the resulting interpretations.

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Andy Kendall



News from the Museum

I'm afraid this column is going to be a little brief this time, as it's a quiet time of year for us in the museum. We held our annual Celebration of Nature Day at St Fagans in early July, but it was one of the scorching days, so there weren't too many visitors. We're currently preparing for our last dinosaur sleepover, as these events seem to have run their course, and are going to be replaced with occasional late evening events. Hopefully, some of these will be aimed at adults rather than just children.

The Geology section is hopeful that we may be able to recruit at least one, if not two, new members of staff in the next year, which will very much help our efforts to tackle the mountain of curation backlog that we have. Our wonderful volunteer, Kevin, is ploughing through boxing-up duplicate material for more efficient storage, but this means that we have a lot of work to keep up with processing the data he generates. I've also started a series of field-experience sessions for the other geologists in the department in order to show them some of the wonderful geology we have in Wales. We've so far managed a great day along the Ogmere section, and are planning to explore the dinosaur footprint sites soon, maybe followed by Pembrokeshire and/or North Wales, both of which will really involve an overnight stay, so I'm going to need to work on permissions for those.

You may have seen an article in the press about potential future temporary closure of the building in Cardiff, but be re-assured that nothing is decided yet. It won't happen soon, and it may very well come down to something fairly minimal – we hope!! Finally, watch out fairly soon for a new paper, for which I'm co-author, to be published in the *Journal of Vertebrate Palaeontology*, and featuring a lovely little reptilian jaw that was found by local collector Jonathan Bow quite a few years ago. When it is published I'll circulate a link.

Cindy Howells



SEWRIGS

On a nice sunny day in August a group of us returned to our long-standing site at Ruperra, near Draethen, which we hadn't visited for some time. The main purpose was to carry out maintenance work and made good progress in clearing bramble on the connecting path to the three main outcrops and cleaning accumulated silt, fallen leaves and twigs and the extensive moss cover on the rock face of the main site, which were obscuring some of the main features. The work on the other two outcrops involved some small-scale excavation and less face cleaning as moss was not a big problem on these excavations. The main common geological feature common to all three sites is that they display different and variable aspects of the calcretes that comprise the Ruperra Limestone, which in turn forms part of the Llanishen Conglomerate that lies just below the Brownstones, in the Lower Old Red Sandstone. There are still issues with the interpretation of this sequence being interbedded with mudstones, siltstones, sandstones and conglomerates.

This project illustrates the value of the RIGS workdays that involves not just site clearance work but also ongoing discussions on the interpretation of the geological structure as new features are revealed. This site poses a challenge to existing members of the group and is a great opportunity for new members to join us and give us their views.

We are in the early stage of exploring the possibility of developing a new project at a site in the Killay Clay Pits and Brickworks, in the Lyne Valley, Swansea. This is a RIGS designated site that has important exposures of the Lower Coal Measures. We are in contact with the local Clyne Valley Conservation Group, who are responsible for the overall management of the site, and are in the process of arranging a meeting with them on site to discuss the possibilities of developing a new project. The success of this project will be determined by whether we have sufficient access and resources available for the amount of work that is required. Attracting new members, especially local, will be an important factor.

Nigel McGaw

Glascoed RIGS

We managed to find a sweet spot in the baking summer weather to revisit Glascoed RIGS, in the company of Lesley Cherns, one of the authors of the future South Wales Geology Guide. Lesley had visited the site in the company of Bob Owens last year, and this visit was to survey our clearance efforts. Both Lesley and Bob have extensive knowledge of the sites in the Silurian Usk Inlier and we are very grateful for their advice and input. The site is important as it is the only one we have that exposes the lower beds of the Coalbrookdale Formation, which are the oldest beds found in the inlier. These were formerly called the Glascoed Mudstone Formation by V Walmsley, and this is the stratotype section.

The RIGS report we have for the site, from 2010, quotes details from the Geology of the South Wales Coalfield, Newport Memoirs of the British Geological Survey, but there are no photographs. The site has been problematic in that it is on land owned by BAE Systems and the access is from their car park. This is under constant surveillance and permission must be sought well beforehand to even use the car park. When Lesley procured such permission, last year, it was found that to access the section from the car park would require machetes due to the dense vegetation. A helpful contractor did have a go at charging the undergrowth with his mini digger but an old hidden railway platform literally stopped him in his tracks.

However, we discovered that the previous car park had since been modified and an easier access route to the section was found, just off a public footpath. From the other end. Although permission is still required, this new route allows us to access part of the RIGS site without needing to use BAE's car park and has allowed us to undertake some clearance. We have exposed part of the Formation showing, bioturbated, poorly bedded, pale olive calcareous mudstones with minor siltstones. These were formed in a low energy, offshore, shelf environment. There are intermittent short bands of calcareous nodules, unsurprising as part of the gradual transition to the Wenlock (Usk) Limestone, which was deposited later as ice sheets growing on polar Gondwana created a eustatic shallowing event.

There are sporadic fossils, which are often contained in the calcareous nodules, though concentrated lenses of brachiopod dominated shelly fauna, presumably brought in by storm events, have been recorded. Our finds are of various brachiopods including a large strophomenid, a calcified brachiopod and a bryozoan. A graptolite, rare in the inlier, was found here, allowing dating by biozone to around 428Ma. It is very satisfying to bring a site back into view, and this will be added now to our maintenance programme.



The exposure after a couple of cleaning visits. © Dave Wellings

Elen Statham

Web: www.swga.org.uk

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Events 2026

Merthyr Science Festival

Our outreach activities included attending the Merthyr Science Festival once again this year. It has moved venue to the Leisure Centre and consequently we had more room. There was a strong showing for geology with stands from David Ward, of the GA, ably assisted by his wife along with three separate displays from the SWGA. Lynda Garfield and Dave Wellings brought a different display, 'Minerals in your shopping basket', which had people (including me) generally astonished. Chris Lee brought some amazing specimens including coalfield fossils and a cast of a dinosaur footprint (which had the adults

guessing, but not the children, or at least not for long). I brought a hands-on display called Fake or



Fortune, based on the physical properties of rocks (including obsidian). We were all busy from 10am until 3pm, with lunch being a sandwich intermittently eaten in snatched moments between customers. We were all pretty hoarse by the end but once again, it was a very rewarding experience. Lynda commented that we saw more teenagers than last year, probably as a lot were attending sports and leisure activities and then “popped in”. As a generally hard to engage group, this was a positive benefit of the change in venue.

Dave Wellings manning the stand © Elen Statham

School Rocks Boxes



Another of our projects has been to produce our own version of “School Rocks” boxes for primary schools. We are trying to use local fossils, rocks and minerals in the main as a way to encourage children to see what they can spot around south Wales. We have the boxes, which are foam lined and are now filling them with samples. As we need five for each class to work on at a time, we are currently aiming for ten boxes, to be loaned to schools in rotation. We need ten samples of about fifteen types, and we have some gaps. Samples need to fit into a 7cm square or a 12x7 cm oblong, without being too heavy.

A School Rock Box © Elen Statham

We are currently hunting for *Gryphea* samples and trying to get some Westbury Formation bone bed samples for “dinosaur poo”. Small chunks of lava (any type) would be welcome as would obsidian. Small pebbles of Carboniferous Limestone with some fossils visible would also be great. If you are on your travels, nice yellow Jurassic oolite brightens the greys.

So, if you have any samples in your collections that you are willing to part with, either for the School Rocks boxes or to be used in our displays, or as freebies to give away to kids, please get in touch. And special thanks to scout Bob Standley for helping source and hunt for samples, and all who have sent samples in so far.

Elen Statham

Be a Geologist for the Day – Penarth Family Day, 15th August 2026

On Saturday 15th August, the South Wales Geologists' Association held a '*Be a Geologist for the Day*' event at Penarth. It was wonderful to spend the day with fellow geology enthusiasts and to see so many families and children getting involved and discovering the fascinating geology of the south Wales coast. We were also incredibly lucky with the sunshine!

The day began with a fossil hunt, and the beach provided plenty of opportunities for discoveries, including ammonites, bivalves, brachiopods and gastropods; shark teeth; coprolites (fossilised faeces); minerals such as pyrites ('fool's gold') and gypsum; ripple marks, mud-cracks and burrows. Sadly, no dinosaurs this time! However, several dinosaur remains, and footprints, have been found in the area. One of the more famous discoveries was made in 2014, when a partial skeleton of a meat-eating dinosaur called *Dracoraptor* (Dray-co-Raptor) was found at Lavernock Point, near Penarth. More information about Welsh dinosaurs can be found here: <https://museum.wales/blog/2712/Welsh-Dinosaurs/>



(Left): Triassic ripple marks. (Centre) Pyrites [Fools Gold]. (Right) Triassic red and green beds. All © Sara Davies

In the afternoon, we enjoyed an excellent talk and guided walk, led by Dr John Nudds, exploring the geological transition from the colourful rocks of the Late Triassic into the Early Jurassic, around 200 million years ago. The cliffs at Penarth provide a fantastic record of significant changes in climate and sea level during this important period of Earth's history. One of the highlights was learning about the famous Penarth Bone Bed, a remarkable thin layer containing fossil fish scales, teeth and bones. The bed records an important point in geological time close to the Triassic–Jurassic boundary, giving us a fascinating glimpse into the changing environments and ecosystems of the time.

We also explored the Triassic rocks and learned about the formation of the distinctive pink and white gypsum found within them. These minerals formed as water repeatedly evaporated from ancient seasonal lakes in a hot, desert-like climate, leaving behind concentrated mineral deposits.

One of the best parts of the day was seeing so many children becoming excited about fossils and asking questions about the rocks and fossils they were finding. Events like this are a brilliant way of making geology accessible and helping to inspire the next generation of geologists. There is something particularly special about being able to explore geological history directly on the coastline and discover evidence of environments that existed around 200 million years ago.

It was a brilliant day of geology, fossil hunting and sharing enthusiasm for the rocks beneath our feet. We will be back again next year!



(Left): Our base on Penarth beach © Sara Davies

(Right): The team after a hectic day © Sara Davies

Further information:

If you'd like to explore the geology of the area for yourself, the South Wales Geology Association has produced a number of useful resources: Penarth, Lavernock and St Mary's Well Bay - http://swga.org.uk/wp-content/uploads/2020/01/Walk_Penarth.pdf

Geology of Penarth head - <http://swga.org.uk/wp-content/uploads/2021/07/SWGAPenarthHead.pdf>

Fossil and Nature Spotter Sheets – Amgueddfa Cymru. Useful identification resources for anyone wanting to have a go at identifying what they find outdoors. <https://museum.wales/collections/on-your-doorstep/identifying-nature/spotters-guide/>

Sara Davies



Odds and Ends

The Knuthenborg Museum of Evolution

Last month I had the chance to visit the new Knuthenborg Museum of Evolution on Lolland, one of the largest islands of Denmark, to the south of Copenhagen. The wealthy museum had recently purchased the 8th specimen of *Archaeopteryx*, which is the one that my colleagues and I had

described as a new species in 2018, and which was exhibited in the National Museum of Wales in their *Archaeopteryx* Exhibition of 2011 which celebrated 150 years since its original discovery.

The museum is situated within the Knuthenborg Safaripark which opened in 1969 when Count Adam W. Knuth added various exotic animals to the family estate and opened it to the public. The present Count, Cristoffer Knuth, added the Dinosaur Forest in 2018 with a number of full-scale animatronic models of dinosaurs, and just 3 years ago opened the Museum of Evolution which houses mainly dinosaur skeletons and other vertebrate fossils. Most impressive is the *Tyrannosaurus rex* specimen nicknamed "Trinity", a composite of 3 skeletons which sold at auction in 2023 for \$5 million (a bargain!). Also on display is a 9 m long *Allosaurus* ("Big Joe"), a huge Ceratopsian *Torosaurus* ("Adam"), which reputedly has the largest known dinosaur skull (!), an excellent *Stegosaurus*, plus some well-preserved French dinosaur eggs, and a number of Permian synapsid skeletons.



Fig 1 (left): 'Trinity', T. rex, and Fig 2 (right) Torosaurus, both Museum of Evolution, Knuthenborg Safaripark, Denmark. © John Nudds

The museum's interpretation is not particularly scientific, and is aimed at attracting families with children, using dramatic lighting and loud music, but it is well worth seeing if you find yourself in that part of Scandinavia. I had a meeting with the Count and didn't have to pay, but a day pass is approximately £30 and includes entry to the Safaripark, northern Europe's largest such attraction, with

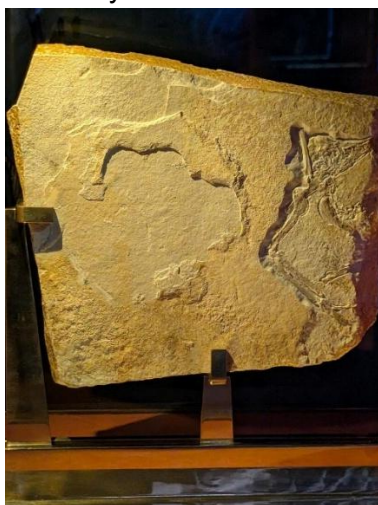


Fig 3 (left): Archaeopteryx No. 8, Museum of Evolution, Knuthenborg Safaripark. Fig 4 (right): Rhinos in Knuthenborg Safaripark, Denmark © John Nudds

elephants, giraffes, rhinos and many other wild animals in large natural habitats. You can even rent accommodation in chalets in the park with balconies looking out over the 'Danish Serengeti'!

And if you're one of those palaeo-twitchers, aiming to see all 14 specimens of *Archaeopteryx*, you'll just have to go!

John Nudds

Cardiff Earth Sciences public lecture series 2026/27

The Cardiff Earth Sciences public lecture series returns again this year on the theme of *Habitability*. *What makes a planet capable of supporting life?* The series will explore our solar system, discover how life emerged on Earth, find out what conditions are required for maintaining living organisms, and look at the challenges we face in protecting our planet's future.

The free lectures take place on the second Tuesday of each month beginning at 18:30, in the Wallace Lecture Theatre at Cardiff University's Main Building (0.13). The series began on 8th September but the rest of the programme is as follows:

Tuesday 13th October. Dr Terrence Kee (University of Leeds). *The emergence of life on Earth: What we know, what we think we know, and what we have no idea about!*

Tuesday 10th November. Professor Ernest Fru (Cardiff University). *Precambrian ecosystems leading up to the emergence of complex life under negotiation.*

Tuesday 8th December. Dr Chris Berry (Cardiff University). *A green planet: plants make our world habitable.*

Tuesday 12th January 2027. Professor Mike Benton (University of Bristol). *How life recovers from overheating; lessons from a mass extinction.*

Tuesday 9th February. Dr Anne Jungblut (Natural History Museum). *Earth's contingencies: life in extreme environments.*

Tuesday 9th March. Professor Mark Maslin (University College London). *Welcome to the Anthropocene: How an African primate came to dominate the world.*

Tuesday 13th April. Professor Hayley Fowler (University of Newcastle). *Major challenges to habitability; climate change.*

Tuesday 11th May. Professor Susan Baker (Cardiff University). *Governing a living Earth: justice, sustainability and the future of habitability.*



Holiday Geo-snaps

Winspit Quarries, Dorset

The Isle of Purbeck coast, from St Aldhelm's Head to Durlston Head, exposes impressive sections through the Jurassic age Portland Stone Formation. These have been extensively quarried in many places leaving the cliffs pock-marked with old quarry openings facing out to the sea. One of the most impressive of these quarry complexes is Winspit Quarry, south of Worth Matravers. Here the Portland Stone building stone was extracted in the C18th and C19th for use in London. The quarry shut in 1940 when it became a naval and air base during the Second World War. After the war it later became a tourist attraction, before being bought by the National Trust in 2002.

The base of the quarry lies on the top of the Cherty Member of the Portland Stone Formation, superb surfaces of which are exposed along the cliff edge (Fig 1). The quarries themselves worked the overlying Under Freestone and Under Picking Cap, with the House Cap forming the roofs of the extensive underground tunnels (Fig 2). The quarries were worked by the pillar and stall method with pillars of workable stone being left to hold the roof up (Fig 3). In a number of places these *in-situ* pillars were later removed and replaced by stacks of waste stone (Fig 4) that have allowed the roof to sag and become very unstable. Roof falls are common and although you can still access the old



Fig 1. Cherty Member

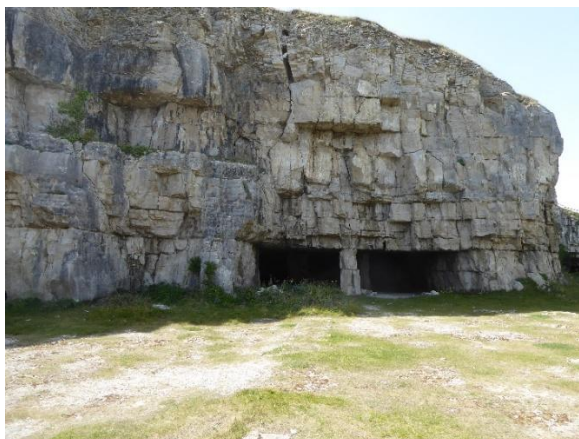


Fig.2. Quarry tunnel entrances

workings it is not advisable. When I visited this summer, I was amazed how many people were entering the workings and letting young children play inside despite the piles of fallen stone from the roofs lying on the floor!



Fig.3. Original stone supporting pillars



Fig.4. Replacement pillars of waste stone

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September
2026

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- 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>). With Facebook, anyone can join in and the more that do, the better it is!
- **Earth Heritage Magazine:** This is now only available in an electronic format, 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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Keeping up the unconformity theme, this is Dolyhir Quarry, Old Radnor, Powys, (photographed in 1984) showing Silurian age Dolyhir Limestone sitting unconformably on Neoproterozoic clastic sediments of the Lomgmyndian Supergroup. ©SRHowe