Down to Earth

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Bringing you all the latest geo-news from Britain and around the world!

Down to Earth
'Earth science learning for all'

The learning zone

Great geo-adventures in 2026/7 begin here...

How's this for stunning fjord scenery at its very best? This is a view in the Magma Geopark in Southern Norway which we will be visiting in May of 2027.
(Image: Courtesy of Fjord Norway)

We've working on our 2027 programme and currently have four trips confirmed. We begin with a visit to Furness in the South Lakes of Cumbria, then the Magma Geopark in Norway and Strathpeffer in Scotland's Cromarty Firth. Moving to the Autumn we've got a week based in Oban in Western Scotland. Bookings are already coming in!

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2027
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- Magma Geopark, Norway, May 4-13
- Strathpeffer & Cromarty, May 21-29
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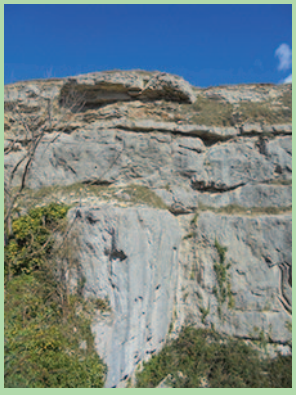
We welcome your contributions, which should be with us no later than July 15th 2026 for the August issue.

If you would like to advertise with us, please ask for a media pack.

cover story



Arguably our most common stone, thanks to all those war memorials up and down the country!

The Portland Limestone, overlain by the base of the Purbeck is seen in one of the many abandoned quarries on the Island of Portland.

(Image: Chris Darmon)

editorial

2026 is a year for a tercentenary...

Geology is a comparatively young science and we don't get to celebrate that many tercentenaries. But 2026 marks three hundred years since the birth of James Hutton, arguably the father of modern geology. It was Hutton who in 1788 discovered what we now know as 'deep tine', at the remote Scottish border spot called Siccar Point.

By comparison with the likes of significant anniversaries of characters in the arts or literature, the celebrations that are planned to mark Hutton's anniversary might seem a little low key. But, and it's an important but, they are rooted in science and the community of today's volunteers and the local community of the Edinburgh city and region that Hutton was a part of.

To understand the world of James Hutton in the late eighteenth century we need to go back to the heady days of the so called 'Edinburgh enlightenment'. It was a brilliant, concentrated burst of intellectual, scientific, and cultural activity centred in Scotland's capital, earning it the nickname "Athens of the North". Unlike their counterparts in England, centred on Oxford and Cambridge, the Edinburgh based intellectuals were not fettered by the Anglican church and its doctrines.

People like David Hume, Adam Smith and James Hutton were able to think 'outside the box' and thus revolutionized philosophy, economics, and science. Together they fostered a culture of reason and improvement that influenced the modern world. It was a world where it was possible to imagine a geological timescale that was so long that it probably stretched to millions of years.

Scientists came to accept it, and even celebrate it, even though at the time nobody had any concept of how it could even be measured. They did what scientists do best, they followed the evidence that they observed in the field and in so doing they laid down the foundations for the science of geology.

More than two hundred years later, and even when we are exploring more of the Moon, we are still understanding more about the Earth. Even James Hutton would not have thought that in 2026 we'd still be getting to grips with aspects of plate tectonics and how the Earth works.

I'd like to think that Hutton would approve of what the Scottish Geology Trust is planning by way of celebrations to mark his tercentenary. There will be the unveiling of a much improved viewpoint situated at the clifftop above Siccar Point, along with guided tours to this and other Hutton sites in Edinburgh, Jedburgh and around the Central Scotland region.

It's right that the celebrations involve people in the local university community, BGS and members of grassroots organisations. These people are the heirs of James Hutton. They are the people who are advancing geology today. Hutton came from a background of some privilege, who had time to devote to science as an amateur. Yet even today we can learn from Hutton and his friends in the Edinburgh enlightenment, particularly about working collaboratively across many different disciplines and also about communicating and sharing what we are doing. In the meantime, let's celebrate and give thanks!

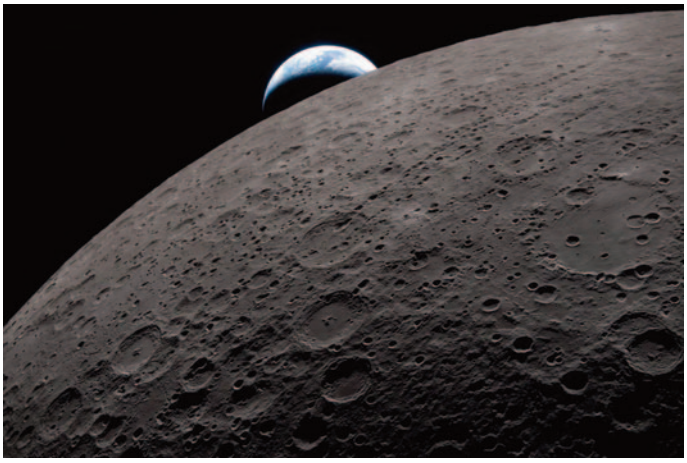
Chris Darmon, Editor

news up front

A digest of some of the latest Earth Science news from around the world.

Stunning images from the dark side of the moon - what has Artemis 2 taught us so far?

If you've been following the amazing journey of NASA's Artemis 2 crew you cannot have failed to be amazed by the images that have been beamed back to Earth. This is particularly the images from the so-called 'dark side of the moon' - that part hidden from our view here in Earth.



An Artemis 2 view of the dark side of the moon
(Image: Courtesy of NASA)

In the weeks and months to come lunar scientists will be pouring over those images in detail for what they tell us about the moon's surface geology and more paticularly the topography and its likely origins.

Until Artemis 2 our knowledge of the geology of the far side of the moon has been limited as this Wikipedia items shows: "The far side (or "dark side") of the Moon is characterized by a thick, rugged, and heavily cratered crust, distinct from the smoother near side. It features few maria (lava plains), dominated instead by ancient highlands composed primarily of anorthosite rock and the massive South Pole-Aitken Basin."

Clearly the images, measurements and observations by the crew of Artemis 2 will significantly add to that knowledge.

This comes from LiveScience:

"When we were on the far side of the moon, looking back at Earth, you really felt like you weren't in a capsule," said Artemis 2 mission specialist Jeremy Hansen. "You'd been transported to the far side of the moon. And it really just bent your mind. It was an extraordinary human experience. We're so grateful for it."

The flyby made Glover, Hansen, mission specialist Christina Koch and commander Reid Wiseman the first people in history to see the entire lunar far side — a feat that was impossible during the Apollo missions due to those missions' flight paths.

"Boy, I am loving the terminator," Glover called down to mission control, referring to the dividing line between day and light on the moon. There's just so much magic in the terminator — the islands of light, the valleys that look like black holes. You'd fall straight to the centre of the moon if you stepped in some of those. It's just so visually captivating."

During the flyby, the crew marveled over green and brown hues across the moon's surface, documenting the previously unseen craters and spotting new ones being made in the form of multiple impact flashes from meteors crashing into the lunar surface. All of these observations and the images they hand-captured with smartphones were fed back to NASA's lunar and planetary scientists to investigate important clues on how the moon and Earth came to be.

The flyby swung the astronauts out a maximum distance of 252,760 miles (406,777 kilometers) from Earth, breaking the previous record for the farthest humans in history by roughly 4,100 miles (6,600 km).

A 'cold case review' of fossil Octopus changes our ideas...

We are familiar with 'cold case reviews' in the area of criminal investigations, articularly where new techniques such as DNA analysis, can be applied. Now a team from the University of Reading have undertaken a similar approach, in this case to a famous fossil octopus - or so we thought...

This comes from the University of Reading's website:

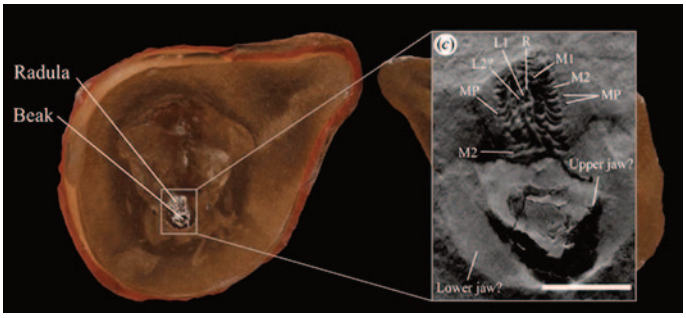
A famous 300-million-year-old fossil that was thought to be the world's oldest octopus – even featuring in the ***Guinness Book of Records*** – has turned out to be something else altogether. In what amounts to a case of mistaken identity, the fossil hid its true nature through decay 300 million years ago, before being fossilised.

Using the latest synchrotron imaging to search inside the fossil rock, researchers discovered tiny teeth preserved inside the rock that prove that *Pohlsepia mazonensis* is not an octopus at all, but an animal related to a modern Nautilus – a multi-tentacled animal with an external shell.

A conceptual illustration depicting the reclassification of an ancient 'octopus' fossil as a relative of the modern nautilus, preserving the significant gap in the octopus evolutionary timeline.
(Image: Courtesy of Chicago Today)

This revelation, shared on Wednesday, 8 April, in the journal ***Proceedings of the Royal Society B***, solves a long-running puzzle in the understanding of octopus evolution that has confused scientists for decades. It also provides evidence of the oldest nautiloid soft tissue

preservation known in the fossil record and means that the record-holding 'oldest octopus' should be quietly written out of the ***Guinness Book of Record***s.



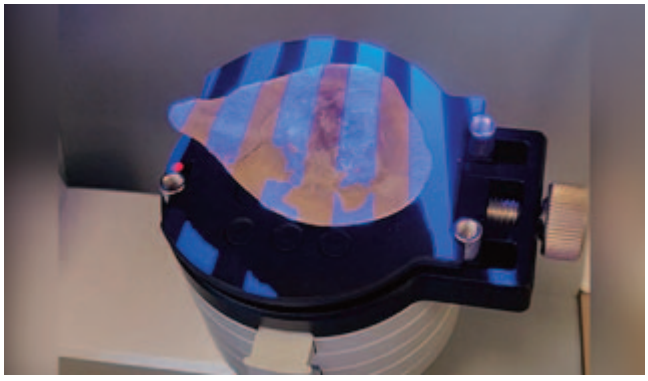
Detailed analysis of the 'octopus' revealed it to be a nautiloid. (Image: University of Reading)

Dr Thomas Clements, lead author and Lecturer in Invertebrate Zoology at the University of Reading, said: "It turns out the world's most famous octopus fossil was never an octopus at all. It was a nautilus relative that had been decomposing for weeks before it became buried and later preserved in rock, and that decomposition is what made it look so convincingly octopus-like.

Scientists identified *Pohlsepia* as an octopus 25 years ago, but using modern techniques showed us what was beneath the surface to the rock, which finally cracked the case. We now have the oldest soft tissue evidence of a nautiloid ever found, and a much clearer picture of when octopuses actually first appeared on Earth. Sometimes, reexamining controversial fossils with new techniques reveals tiny clues that lead to really exciting discoveries."

Cold case X-ray

Found in Illinois, USA, the first analysis of the fossil was published in 2000 and was later used in studies of how octopuses and their relatives evolved. Scientists thought the fossil showed eight arms, fins, and other features typical of an octopus, pushing back the known history of octopuses by around 150 million years.



Pohlsepia mazonensis undergoing X-ray analysis (Image: University of Reading)

Doubts had been raised about the identification for years, but without a clear way to test them until recently. The scientists in the new study used synchrotron imaging – a technique that uses beams of light brighter than the sun – to scan for structures invisible to the eye beneath the surface, revealing hidden details inside the rock. The scientists likened the process to giving a 300-million-year-old suspect a modern forensic examination.

What they found was a radula, a ribbon-like feeding structure with rows of teeth only found in molluscs. With at least 11 tooth-like elements per row, the shape and number ruled out an octopus entirely. Octopuses have seven or nine, while nautiloids have 13.

The teeth matched those of a fossil nautiloid called *Paleocadmus pohli*, already known from the same site where it was found, and the researchers concluded the animal had partially rotted before fossilisation, causing it to look very different from its true self.

Octopus origins pushed back

The Nautilus is a shelled sea creature still alive today, with its ancient origins leading some to describe it as a "living fossil". The *Paleocadmus* fossils found at the Mazon Creek site in Illinois now represent the oldest known nautiloid soft tissue in the fossil record – beating the previous record by around 220 million years.

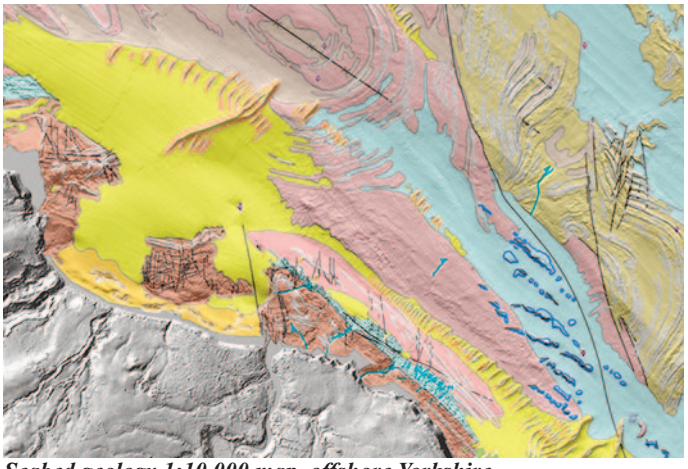
These findings change the picture of when octopuses first evolved. The data now supports octopuses appearing much later, during the Jurassic period. Scientists now believe the split between octopuses and their ten-armed relatives such as squids happened in the Mesozoic era, not hundreds of millions of years earlier as previously thought.

Dr Clements said: "It's amazing to think a row of tiny hidden teeth, hidden in the rock for 300 million years, have fundamentally changed what we know about when and how octopuses evolved."

New BGS assesment of the Southern North Sea - the first in more than 30 years...

The first regional assessment for 30 years will support offshore marine and subsurface planning for the UK's low-carbon energy infrastructure, including the 2030 target of 45 to 50 GW generated through offshore wind.

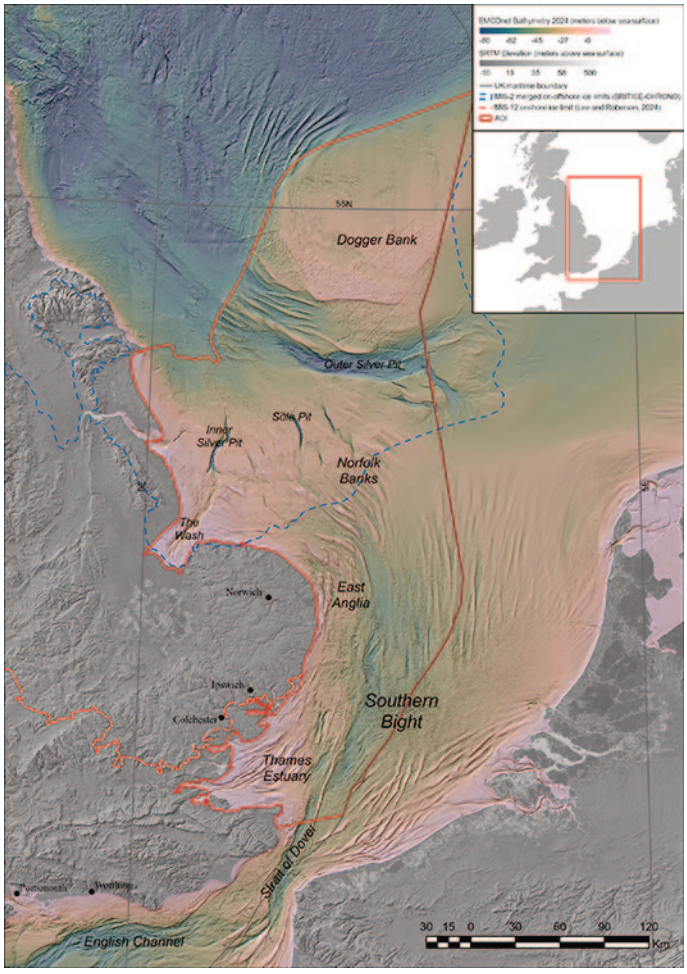
The British Geological Survey (BGS) has released a new shallow subsurface geological synthesis of the southern North Sea in the first formal review of this region since the 1990s. A wealth of new subsurface data has been generated through the rapid expansion of offshore wind farm (OWF) development since the last assessment.



Seabed geology 1:10 000 map, offshore Yorkshire. (Image: BGS © UKRI 2025)

In total, the new synthesis draws on data from 22 OWFs and cable landfall sites from recent publications and open data available through The Crown Estate's Marine Data Exchange. Bringing these diverse

datasets together presented a rare opportunity to enhance our geological understanding of the region, providing a detailed baseline resource to support more efficient and better-informed offshore development projects in the future.



Offshore bathymetry map of the southern North Sea (Image: BGS © UKRI 2026)

Findings from the updated review have revealed much greater geological complexity within the region than indicated by the previous assessment, which was developed between the 1970s and 1990s on the back of data collected during oil and gas developments. Modern OWF investigations, supported by comprehensive borehole drilling, cone penetration tests and seismic datasets, show that many of the geological formations contain a variety of distinct sedimentary characteristics. This complexity has direct implications for foundation design and ground modelling, including the identification of geo-engineering constraints and geohazards, which is crucial information for a wide range of offshore infrastructure development.

The assessment examined evidence across pre-glacial, glacial, interglacial and post-glacial periods from 200 million years ago to the present day. Understanding how different sedimentary units were deposited provides vital insight into geological formations that may present specific geo-engineering complications. This includes mixed soils, boulders, glacially compacted sediments or organic-rich layers. Organic units can be problematic for cable installation due to their fibrous nature, presenting considerable challenges to cable routing.

It is not a requirement for UK offshore infrastructure projects to collect samples for dating and biostratigraphy; however, where they are available, absolute dating (radiocarbon and optical stimulated luminescence data) information has also been included within the assessment. Neighbouring countries such as the Netherlands recognise the value of this data, as it can help to better predict age-based sedimentary characteristics and ultimately better inform geotechnical characterisation around a project's design.

The report outlines several recommendations to enhance the resource further, including improving fine-scale mapping, ingesting geotechnical datasets for each geological subunit and strengthening international collaboration to harmonise North Sea stratigraphy. The findings presented in the main report can be aligned with results presented in the Geo-Assessment Matrix, which is a data catalogue highlighting the key geological features and associated engineering constraints for OWF development as part of the Geological Service for Europe. Both resources provide complementary datasets and criteria essential for evaluating OWF site suitability.

We would encourage similar consolidation of geological information across the wider North Sea, Celtic Sea, Irish Sea, The Solent and English Channel, making full use of the substantial dataset holdings within the Marine Data Exchange. There is also significant potential to extend this approach internationally, working with neighbouring countries.

Such data provides a robust evidence base for industry, regulators and researchers, marking an important step toward a fully modernised geological model and improving our understanding of offshore stratigraphy across the UK Continental Shelf.

The report and geological assessment are now available online: The shallow subsurface geology of the southern North Sea (UK): an updated assessment using data from offshore wind farms.

BGS would like to acknowledge The Crown Estate as well as wind farm developers for contributing reports and data to The Crown Estate's Marine Data Exchange.

The Natural History Museum demonstrates that dinosaurs (and other fossils) do still have pulling power...

Amid the sort of hype that you'd expect when a track gets to the number one spot in the pop music charts, London's Natural History Museum wins! Yes the capital's Natural History Museum has taken over from The British Museum to once again become the number one tourist attraction.

In 2025, it recorded more than 7.1 million visitors and taking it to the number one spot for the very first time. More than that, the figure represents a record an all time record for any UK museum or gallery and an increase of 13.1% over the 2024 figure.

Through a press release, The Natural History Museum Director Dr Doug Gurr said: "We are thrilled to be the UK's most popular visitor attraction, smashing all previous records for the sector! These exceptional results reflect our unwavering focus on delivering a fantastic day out for every visitor, as well as the dedication of our colleagues who work tirelessly to create unforgettable experiences and world-class exhibitions.

"We should all take heart from these figures. Welcoming 7.1 million visitors demonstrates the enormous public appetite to engage with the wonders of the natural world and UK cultural attractions. That's why we are committed to creating more space to welcome visitors through

'Fern in the sun' - outside the South Kensington attraction (Image: Trustees of The Natural History Museum)

our NHM150 campaign - opening a brand-new or revitalised permanent gallery every year until our 150th anniversary in 2031."

As well as being a world-famous visitor attraction, the Museum is a leading research centre with over 400 scientists working to solve some of the planet's biggest challenges. With over 80 million specimens, spanning 4.5 billion years, the breadth and depth of the Museum's collection make it the most important of its kind in the world.

VisitBritain/VisitEngland CEO Patricia Yates says: "Our wonderful museums are powerful motivators for travel for both domestic and international visitors and we congratulate the Natural History Museum for taking the top spot in ALVA's survey (The Association of Leading Visitor Attractions) and reaching a record high in its visitor numbers.

"Every year millions of people come to Britain drawn by our first-class heritage and cultural attractions including the world-renowned Natural History Museum, inspired by the mix of history, storytelling, the brilliant exhibitions and experiences. Those visitors then go on to explore other destinations across Britain, supporting our restaurants, high streets, shops, pubs and hotels, and boosting the wider economy."

Looking forwards

Tickets are now on sale for the Museum's new blockbuster exhibition Jurassic Oceans: Monsters of the Deep which makes its European debut on Friday 22 May 2026. Visitors will be able to come face to face with some of the fiercest predators to ever live and embark on an electrifying adventure through ancient waters teeming with real-life sea monsters such Ichthyosaurs, Plesiosaurs and Mosasaurs.

18 Million year old ape, found in 'the wrong place'...

We're quite used to early hominid and ape fossils being found in the continent of Africa, so when an 18 million year-old specimen turned up, why as it big news?

The answer lies in where it was found. It was in Egypt quite a way from the more normal sites in East Africa. This new find, might indicate that the ancestors of all living apes, a group that includes humans, may instead have originated in Arabia or Northeast Africa.

"Discovering a fossil ape in this region is both significant and somewhat surprising," the study first author Shorouq Al-Ashqar, a paleontologist at Mansoura University in Egypt, told ***Live Science*** in an email. "But it also highlights how incomplete our picture has been."

Author: Chris Darmon

Sir David Attenborough at 100: It all began with fossils...

It's amazing to think that TV legend and complete naturalist Sir David Attenborough is celebrating his 100th birthday. But even at 100, he's still working and preparing new material to bring to us later this year.

Sir David sees the natural world as a single entity and one in which geology has a major part to play. Geology is the stage set on which living things, both plants and animals, have their being.

It seemed appropriate therefore to bring out some of the geological aspects of Sir David's life. Some of these may surprise you...

David Attenborough was born on May 8th. 1926 in Isleworth, Middlesex, the second of three boys. As a boy, he grew up in Leicester on the campus of the University where his father was the principal. His older brother Richard became a celebrated actor and director while his younger brother John went into business becoming an executive of the Italian car maker Alfa Romeo.

In many ways David had both an idyllic, but also unusual childhood. In those days a lot of what we would nowadays 'greenbelt' existed on what is now the University campus. Here he was able from a very early age, able to indulge in his passion for nature. He went out on his child's bike collecting fossils, stones and other natural specimens. No doubt he brought them back home for his parents to see.

David Attenborough has cherished fossils for much of his long life. (Image:Courtesy of BBC)

He got encouragement for his collecting from a young Jacquetta Hawkes who admired his collection. She went on to have a glittering career as an archaeologist and anthropologist.

Before long, the young David Attenborough was venturing a little further out from the University campus and there in the eastern suburbs of the city of Leicester, and still on his bike, David found his first fossil.

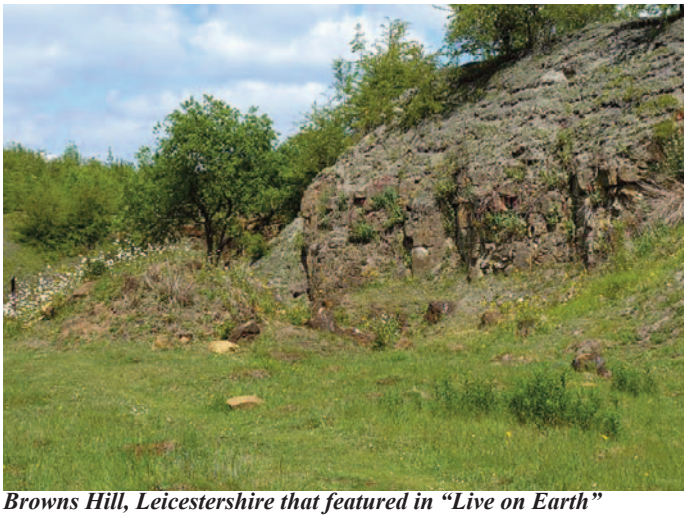
Speaking in a 2009 interview with the BBC he recounted: "It was the late 1930s, and he had cycled into the English countryside. Arriving at an exposed rock face, he began searching among fallen fragments below. He picked up a promising stone, and split it apart with his hammer. There, perfect in every detail, glinting as though it had just been polished, was a coiled seashell… an object of breathtaking beauty, and my eyes were the first to see it since its occupant died 200 million years ago."

The BBC item goes on: "It was a fossil ammonite – a spiral-shelled creature around the size of his palm. Due to their coiled appearance, local people once believed they were snakes, but they were actually cephalopods: a marine mollusc similar to the modern-day nautilus, which swam in ancient oceans."

Speaking in 2009 David said: "I suppose it's true to say that it was one of the key moments of my life. I have been repeating that moment, off and on, throughout my life and the thrill has still not worn off."

This ammonite was just one of many ancient creatures Sir David collected as a teenager, near his boyhood home in Leicester. He was an avid fossil-hunter – and would continue to find and acquire interesting specimens throughout his life. "I spent a lot of time as a boy searching for fossils in the Leicestershire countryside. Indeed,"fossils still give me great pleasure," he told the BBC's Richard Fisher in a letter in May 2025, shortly after his 99th birthday.

Amongst the places that David visited were some of county's disused railway lines and former ironstone quarries. Today we can all admire the Jurassic fossils in places like Tilton railway cutting and Browns Hill at Holwell Nature Reserve near Melton Mowbray. The latter featured in the opening shots at the very beginning of the ground breaking ***"Life on Earth"*** series.



Browns Hill, Leicestershire that featured in "Live on Earth" (Image: Wikimedia commons)

At Browns Hill he takes viewers back to a Jurassic seafloor 180 million years ago, captivating them and inviting them to view the ancient environment as if it was a modern seafloor.

Back to David's childhood in the late 1930s and his collection of fossils, rocks and various other 'treasures'. Not only did he carefully collect them, he also gathered them together in what he called his 'museum'.

David with yet more ammonite fossils, probably somewhere on the Jurassic coast of Dorset.
(Image: Wikimedia commons)

In his 2003 autobiography he says of his museum: "It's backbone was my fossil collection gathered from Leicestershire rocks. It also contained butterflies, birds' eggs (legal at the time), abandoned birds' nests…bun pennies, champion conkers, the shed skin of a grass snake, and a fragment of Roman brickwork."

During the Second World War David's parents took in two Jewish children from the Baltic coast. Years later, David recalled that via her father, a doctor the he got a precious piece of amber: "He had given one small precious thing as a sign of his thanks to whoever it was who cared for his daughter, David's adoptive sister Marianne. It felt surprisingly warm and light in my hand, but what made me fall in love with amber is what I discovered inside it. I found something miraculous: there were insects preserved in astonishing detail. I burned with questions: what sort of world were they from? They must have lived a long time ago, but how long?"

With all this exposure to geology, it was not at all surprising that when the appropriate time came and he won a scholarship to Clare College, Cambridge, it was to study geology and zoology. From 1945 he was an active member of the Sedgwick Club and obtained an MA degree in Natural Sciences in 1947.

After serving his time in the Royal Navy, David joined the BBC, firstly as an editor of children's science textbooks before applying to become a radio producer, a job he was at first rejected for. His c.v. eventually got to the attention of Mary Adams who was head of factual broadcasting at the BBC's fledgling TV service.

From 1957 he became intimately associated with the newly established Natural History Unit which was based in Bristol. There, over the following nearly 70 years, Sir David has been instrumental in the delivery of countless programmes that have covered every aspect of the natural world including several that have featured palaeontology. There was ***Life on Earth*** and ***Prehistoric Planet*** (2022-2025) that covered the reign of the dinosaurs better than anyone else has ever done.

During his lifetime, two major fossils have been named after him. The first, a long-necked plesiosaur reptile was named *Attenborosaurus*, in 1993 by palaeontologist Robert Bakker, who realised this animal was different enough from other plesiosaurs to deserve its own genus, *Attenborosaurus*.

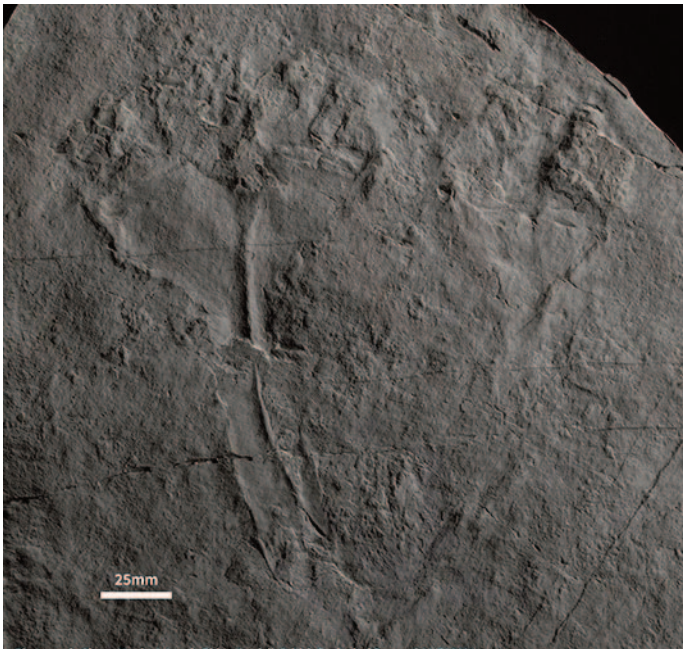
The fossil plesiosaur that bears his name is on display at The Natural History Museum in London.
(Image: Trustees of The Natural History Museum)

Sir David has many animal and plant species named after him, but this namesake is particularly special. In this instance, the broadcaster has a whole genus – a group of related organisms with similar features – named after him. The species on which the genus is based, called a type species, is *Attenborosaurus conybeari*.

The second major fossil named after Sir David is more recent and links him with British Geological Survey (BGS) and his home county of Leicestershire in a very special way. BGS sent him an Instagram that reads:

"A very happy 100th birthday to Sir David Attenborough!"

One of the images they included in the greeting was a very special fossil of the earliest known animal predator. In 2022 the palaeontologists who discovered it named it *'Auroralumina attenboroughii'* in honour of Sir David Attenborough. It was found in Charnwood Forest in Leicestershire in rocks that date from around 560 million years ago during the Ediacaran of the late Precambrian.



Auroralumina attenboroughii the earliest fossil predator
(Image Simon Harris BGS)

This comes from BGS in 2022:

"Geologists have found the fossil of the earliest known animal predator. The 560-million-year-old specimen is the first of its kind, but it is related to the group that includes corals, jellyfish and anemones living on the planet today.

The palaeontologists who discovered it have named it '*Auroralumina attenboroughii*' in honour of Sir David Attenborough. The first part of its name is Latin for 'dawn lantern', in recognition of its great age and resemblance to a burning torch.

It was found in Charnwood Forest, near Leicester in England, which is famous for its fossils. In 1957, a fern-like impression in stone turned out to be one of the oldest fossilised animals, *Charnia masoni*.

This is what Sir David had to say at the time: "When I was at school in Leicester I was an ardent fossil hunter. The rocks in which *Auroralumina* has now been discovered were then considered to be so ancient that they dated from long before life began on the planet. So I never looked for fossils there.

A few years later a boy from my school (Roger Mason) found one and proved the experts wrong. He was rewarded by his name being given to his discovery. Now I have — almost — caught up with him and I am truly delighted."

It would be possible to fill several more pages with the contributions that Sir David has made over the years to the advancement of Earth science, but the partnership between the BBC and the Open University (OU) is worth more than a passing reference.

At one point in the recent past it looked very much as if the OU was dropping Earth science with less and less units being available for students to access. But partly thanks to Sir David's programmes, there continues to be high levels of interest in Earth sciences and now the OU has reversed the decline in study units.

Sir David Attenborough and planet Earth - the perfect combination. (Image: Courtesy of the Open University)

Speaking about the special BBC programme to mark his 100th birthday, the Open University said: "Made in partnership with The Open University, David Attenborough's ***100 Years on Planet Earth*** brings the nation together for a live event honouring the ground-breaking career of the man at the forefront of natural history storytelling.

For decades, many of these landmark documentaries have been supported by the expertise of academics from The Open University, who work behind the scenes to help shape the science and stories audiences see on screen, and create fascinating additional content to allow viewers to go further."

Sir David Attenborough the Honorary Geologist...

For the geological world, we celebrate our geologists by making them Fellows of the Geological Society of London (FAGS). The Geological Society is the oldest such body in the world and Sir David is one of its Honorary Fellows.

This is the citation for Sir David from the Geological Society:
In a career spanning over 50 years, Sir David Attenborough has become the respected face and voice of natural history programming. Since joining the BBC as a trainee in 1952, Sir David has written, produced and presented several landmark BBC series, including Life on Earth (1979), The Living Planet (1984), The Trials of Life (1990), The Private Life of Plants (1995), Life of Birds (1998), Life of Mammals (2002), Life in the Undergrowth (2005) and Life in Cold Blood (2008).

In the course of his career, Sir David has received 29 honorary degrees from British universities. In 2005, he received a lifetime achievement award from the Association of British Science Writers for outstanding services to science journalism, in recognition of his 'distinguished broadcasting career and outstanding contribution to the clear, effective and enthusiastic communication of science'.

And finally - let's not forget the children...

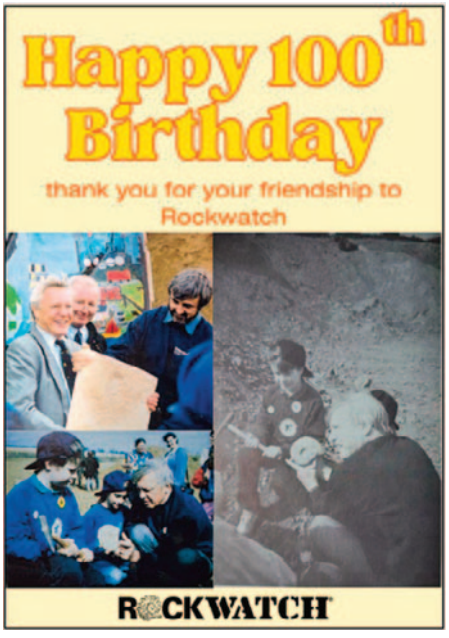
This comes from Rockwatch at the Geologists' Association:
Everyone at Rockwatch sends our warmest wishes as you celebrate this incredible milestone.

Over the years, Sir David has inspired generations of young geologists, fossil hunters and nature lovers through his passion for our planet, its history and the amazing stories hidden within rocks and fossils. His curiosity, kindness and sense of wonder have encouraged countless children to look more closely at the wonders on planet Earth and to treasure the natural world around them.

We are hugely grateful for the support he has shown to Rockwatch over the years and for the inspiration he continues to give to young people everywhere.

We hope Sir David enjoys the many birthday celebrations planned today and wish him many more opportunities to explore, celebrate and share the wonders of our extraordinary planet.

Happy 100th Birthday, Sir David — and thank you for everything!



picture story

This amazing image was given to the Editor by Peter who is one of superb guides at Geevor Tin Mine in Cornwall.

It shows surface activity at Botallack Mine in the 1920s. Of particular note are the distinctively dressed bal maidens.

article

Author: Patrick Gaffikin

Illustrations courtesy of author unless shown.

Granodiorite - a rock that's not quite Granite!

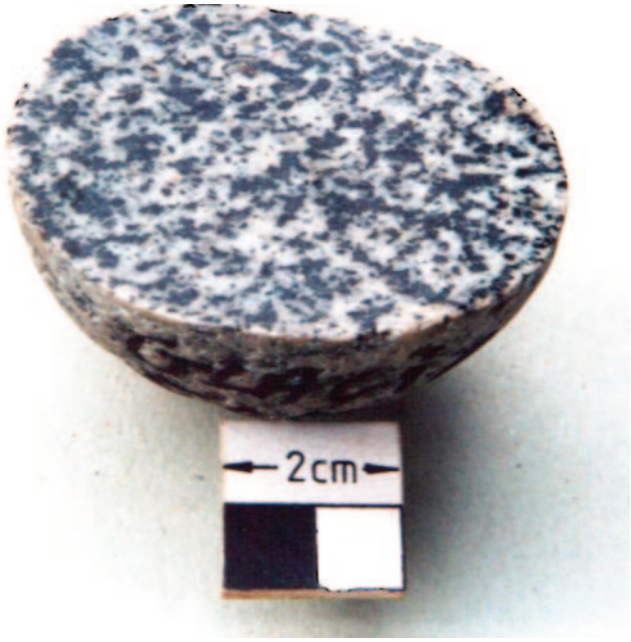
The science of geology can be accused of being rather full of 'words', indeed my colleague Colin Schofield often accuses me of making them up!

Yet, we often need these words to describe rocks that may have some characteristics of their more famous cousins, yet they are distinct enough to deserve their own name.

Paddy investigates just such a rock - Granodiorite...

'Granodiorites.....are probably the most voluminous of all the plutonic igneous rocks.'

From 'Minerals, Rocks and Fossils' p. 154. Hamilton, Woolley and Bishop. (1992).



A cut and polished pebble of granodiorite, which was found on Dundrum beach, Co. Down. It would have been transported by ice from the granodiorite at Newry.

The name 'granodiorite' comes from the rocks 'granite' and 'diorite'. Diorite is a rock intermediate in composition between a granite and a basalt. Granodiorite is a coarse-grained intrusive igneous rock – the main different minerals (grains) can be seen unaided. In appearance it looks very like a granite but there are subtle differences. Like granite, it has over 20% quartz (SiO_2) by volume but, unlike granite, it has more plagioclase feldspar than alkali (orthoclase) feldspar.

Also, it has a greater volume of mafic (magnesium-iron) minerals – the main one being black biotite – than granite. In total, chemically, it has less overall silica (silicon dioxide) than granite and the plagioclase feldspar is over 2/3 of its total feldspar composition. The silica comes mainly from the quartz and feldspars.

Distinguishing between a granodiorite and a granite

A picture of Newry Granodiorite. It is around 400 million years old. (Photo: Mr. P. Millar, Belfast Geologists' Society)

A picture of Leinster Granite. It is around 400 million years old. At a cursory glance it looks like a granodiorite.

It can be difficult distinguishing between a granodiorite and a granite in a hand specimen because both are very similar. However, there are minor differences in their appearances and these are best seen in cut and polished samples. Although a bit harder to see, the differences can also be seen in freshly broken samples. Perhaps the most conspicuous difference between these rock types is the overall appearance – granodiorites are a bit darker generally than granites, which have largely a light appearance. This would be the case because granodiorites have a greater percentage of mafic minerals than granites.

However, what mainly differentiates these rocks is their proportion of feldspars – granodiorite, unlike granite, has more plagioclase feldspar than alkali feldspar. The trouble is both minerals often look whitish but, sometimes, the alkali feldspar in granodiorite has a faint salmon-pink colour and, also problematic, the mineral quartz, while it can be a glassy-grey colour may also be a greyish-white.

How does granodiorite form?

This rock forms from the cooling of silica-rich magma deep in the Earth. Because it cools slowly, granodiorite, like granite, is coarse-grained. After it solidifies, it can be thrust upwards due to Earth movements and any softer surrounding rock can be eroded over long spaces of time to reveal granodiorite exposures. It forms above subduction zones and large proportions of granite intrusions also contain granodiorite. It may come as a surprise to some that much of the upper part of the continental crust of the Earth is composed of granodiorite rock. Quite a few large igneous intrusions, described as granite, are, strictly speaking, composed of granodiorite.

Places where granodiorite rock can be seen

Picture of Ballymagreehan Granodiorite quarry, Co. Down. (Photo: Mr. P. Millar, Belfast Geologists' Society.)

Castlewellan Castle (Co. Down) built from Newry Granodiorite. (Photo: Mr. P. Millar, Belfast Geologists' Society.)

Probably the best place, on these islands, to see granodiorite in situ, is in Newry, Co. Down. Here it can sometimes be erroneously called 'Newry granite'. Other locations it occurs are in the Highlands, N.W. Scotland and at Dumfries and Galloway in S.W. Scotland. Among other places where deposits are present are in mountainous regions of the U.S.A. – for instance the Appalachians and the Rockies.

Some uses of granodiorite

Cross constructed of Newry Granodiorite in grounds of Holy Cross Church, Crumlin Road, north Belfast

.

Because, when cut and polished, it is very ornamental and due to its hardness and resistance to weathering it is used for the façades, columns etc. of buildings, monuments and grave headstones. When crushed it can be employed for road construction. Internal uses include counters in bars and domestic worktops. It may be of interest to mention that the legendary Egyptian Rosetta Stone, famous for its ancient inscriptions, and now on display in the British Museum in London, is made of dark granodiorite.

Finally...

Even some professional geologists mistake granodiorite for granite. So, the next time you come across a rock, deemed to be a granite, keep in mind it may not, strictly speaking, be a granite – but a granodiorite!

A UK footnote to the granodiorite story...

The Editor comments: I always look forward to receiving the latest article from Paddy, because I never know in advance what his subject will be! As a result, I'm in the position of being able to comment or add to his text. In this case, it's the uses of the stone that interest me.

Granodiorite is a comparatively rare igneous rock and whereas in Ireland it finds us as a church cross, in the UK, it's much more likely to be found as the foundations for a major road, railway or beneath a major building in London and the Southeast. That's because it's found in a major quarry at Mountsorrel in Leicestershire. Trainloads of it are carried to 'virtual quarry' sidings in and around the capital, from where it is transported to where it is needed.

Meanwhile granodiorite from the Llyn Peninsula of North Wales was used to make the major harbour works at Birkenhead on the Wirral during the nineteenth century.

Down to Earth

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Shropshire
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- A visit to the Black Country geopark
- The Lapworth geological museum at Birmingham University
- Geology of the Clent & Lickey Hills
- Triassic geology of Grinshill
- Rocks of the Onny Valley
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in-house

A look at some of the new and exciting happenings in the world of Down to Earth & Geo Supplies - by Chris Darmon

'Cream of the Crop 2025' - order now!

We are pleased to announce the (somewhat late) Arrival of our ***'Cream of the Crop 2025'*** special limited edition rock set!

Your editorial team, Chris and Colin (mainly Colin) collect these specimens during our field trips in the year in question. You'll be pleased to learn that they are all collected from loose material and not hammered from the solid section. This year's collection comprises a total of 14 specimens and includes samples such as the oldest rock in England and Wales at 701 million years, a quartz porphyry from Cornwall and tonalite from the Ardnamurchan Peninsula of Scotland.

To get hold of our 'Cream of the Crop 2025' collection for the postage inclusive price of £54.95, either go to our website: www.geosupplies.co.uk or ring us on 0114 245 5746. They will be delivered in June or July.

Grab a book or map bargain...

As part of our service to personal callers we keep a shelf of sale books and booklets. Starting at just a couple of pounds, these are usually 'end of line' items that are no longer generally available.

There are some nice little gems of books that cover field sites around the country. We've got plenty from the likes of Herefordshire and Worcestershire at just £1.95 each!

We also have some older editions of several BGS maps for around half price. Come and see us SOON!

The choice of hand lenses is about to shrink...

For some time now we've been flagging up that once stocks are exhausted we won't be getting any more of the top quality hand lenses that we used to procure from Viking Optical. This is because the input prices from Japan are now prohibitively high. We do still have a few left - contact us for details.

To check on availability of a specific lens ring us on: 0114 245 5746 or email: sales@geosupplies.co.uk

We're always pleased to see YOU our readers in the shop...

We are always pleased to see some of our geology customers in person! It gives you the chance to browse our stock of books and maps also to 'grab a bargain'!

Personal callers almost always make savings as we don't have to spend money on postage. That includes a wide range of field equipment. You can also pick up a small bottle of dilute Hydrochloric acid - not something that we can put in the post!

Our shop is just 5 minutes away from Junction 35 of the M1 motorway and is easily reached from north, south, east and west!

Helping people to get what they want is all part of the Geo Supplies service - honed over the past 40 years! See below for our shop opening hours.

To check on availability of a specific item ring us on: 0114 245 5746 or email: sales@geosupplies.co.uk

Down to Earth readers welcome!

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If you haven't joined one of our residential field trips before, what can you expect?

- *Our residential field trips are suitable for adults of all levels of interest and geological knowledge.*
- *Our trips are friendly and informal and usually comprise 15-20 people. Overseas trips are usually larger.*
- *We usually make use of comfortable small hotels and guest houses and all meals are included.*
- *You have the services of Chris Darmon and Colin Schofield as field leaders. Both are highly experienced and knowledgeable field geologists.*
- *For some trips we have a hired minibus but on other trips we will use shared cars, or even public transport.*
- *Dates shown in this listing are the start and finish dates.*
- *Where prices are quoted, they are per person in a shared twin/double room.*

If you still have any questions or queries, don't hesitate to email us at: downtoearth@geosupplies.co.uk or tel: 0114 245 5746

Before you book one of our field trips...

We are always pleased to welcome new people along on our trips. So if you are thinking about it, what do you need to know before you 'take the plunge'?

Who are the trips aimed at?
The short answer is that they are not aimed at any particular group of people. Our participants are mainly older retired people who want to keep their minds and bodies active, but younger people are welcome.

Some people have lots of geological field experience whilst others are complete beginners. As one person put it to us "I've forgotten all I once knew and need to come along to hear it again." Our UK trips are all small groups of 15 to 20 people maximum so we can make lots of what we say personal to you.

Will I be able to manage the walking?
We always try to keep walking to a minimum, but, almost by definition, some walking will be involved. If you can't manage a particular walk, just tell us and it will never be a problem for you not do it. We have one person who really enjoys sketching - she's done some amazing sketches while the rest of us visit a quarry!

How do we get about on trips?
It varies a lot from trip to trip. Sometimes we hire a minibus, on other occasions we use public transport and at other times we'll make use of shared cars. Look at the details for each trip to find out.

What about accommodation?
We always try to use hotels or guest houses that have ensuite rooms as standard. Most of our accommodation will provide breakfast and evening meals, but sometimes we eat in local restaurants. We include the cost of all food, including a packed lunch for each field day.

We prefer to use small family run hotels and guest houses but they are getting harder to find, so sometimes we use larger hotels such as Premier Inns and hotels in the Leisureplex group. Once again, see the individual trip brochures for details.

Are your bookings safe with us?
Yes indeed they are! We've been in the business of running trips a long time and ensure that all the money you pay us is safe in a client trust account until your trip is completed.

But, above all, our trips are educational informative and FUN! We don't take ourselves or our geology too seriously. After all you are on holiday - and you are paying for it! We look forward to welcoming you on a trip sometime soon.

Still some availability this year...

We still have vacancies on some trips especially for couples or people willing to share a twin or double room. We also have singles available on our Summer School to Shropshire in August.

If you haven't been with us before, you are particularly welcome, but please don't leave it too long before making your booking. Over the past year we've lost count of the number of people who have left it too late and we have had to decline their booking.

Shetland - the North Isles, June 17-25 **£1895**
Everyone should visit the Shetland Isles at least once in their lives, so says Chris, who's been there around a dozen times over the past 40 years. The best time to visit Shetland is around mid-Summer when it never really gets dark.

We invite you to join us as we take in the North of Mainland and the Northern Isles of Unst, Fetlar and Yell, home to some of the most amazing geology in the entire UK. Visit the Moho in a small quarry in Unst and get yourself a sample of serpentine to rival any from Cornwall.Why not begin our Shetland adventure with an overnight boat trip from Aberdeen?
This trip is now fully booked, ask us about cancellations.

The Dinorben Arms Hotel, our base on Anglesey

Anglesey, July 5-10 **£995**
We love going to Ynys Mon, or as the English know it, Anglesey. As a long established geopark it's geology is superb and also unique as the main location to see rocks of the Mona Complex. Based at the former copper port of Amlwch in the north of the island we will explore some of the best sites on the island, many of which are close to our base.

Come with us to see some very rare rocks and also experience some fine coastal scenery. On this trip you get to see sedimentary, igneous

and metamorphic rocks of many types!

We may still have twin and double rooms available on this trip.

Why come and join our Summer School?

Our Summer School is modelled on those that used to be run by the Open University a number of years ago. All are based on a campus of one sort or another where we can sleep in largely single, en-suite study bedrooms and enjoy on site meals. They are also more than just field trips with dedicated transport each day. There's an evening programme of talks from local experts and also social events. In short - something for everybody, including those with limited mobility!

The Harper Adams University campus is set in rolling countryside (Image: Harper Adams University

Summer School at Harper Adams University in Shropshire
August 8-15 £1495

For our ever popular Summer School week, we are returning to the campus of Harper Adams Agricultural University which sits in lovely grounds in Shropshire. We last visited in 2018 and have a packed itinerary planned including some new localities.

Shropshire is home to a wealth of geology spanning many time periods and covering many types of rocks and landscape. We'll be taking in the Precambrian rocks of the Church Stretton area, the Lower Palaeozoic sediments of Wenlock Edge and the Lickey Hills as well as later rocks in Cheshire and the Black Country.

Yes, there's something for everyone and that's before we add in the evening talks and activities as well as the excellent company.

We have plenty of single rooms available on this trip!

Iceland - the North & East Fjords, September 13-22 £2695

These days a lot of people go to Iceland, but they very rarely visit the north and east of country. In this trip with our usual guide and driver Ingi, we'll begin at Keflavik near the airport and then travel to Akueyri before working our way clockwise to Myvatn to the volcano Krafla before heading to the beautiful east Fjords.

We'll stop in the amazing geo-village of Borgarfjarðar Eystri to see Iceland's most colourful rhyolitic rocks. The last time we were here we did see the Northern Lights in all their glory! Iceland is an amazing place but these days much of it is over visited by tourists. This cannot be said for some of the places that we will be visiting on this trip. This is the real Iceland, where natural wonders and beauty are able to shine without the smell of hamburgers!

To complete our trip we travel back from Hofn to Keflavik completing our circuit of Iceland. There's an option of an additional night at the end to have a day looking at the most recent volcanic activity on the Reykjanes peninsula and viewing the recent - and still hot - lavas.

We have vacancies for a couple and also, two places in shared twin rooms available - one male & one female.

Melrose in the Scottish Borders, October 18-24 £995
We end the year with a good value 6-night trip to a new area of the Scottish Borders. Melrose is in the heart of an excellent area of fine geology, with sediments from the Ordovician, Silurian and Devonian along with a fine array of igneous rocks, both extrusions and intrusions that mainly date from the Carboniferous.

During this trip we'll be taking in the famous localities of Dob's Linn near Moffat where Charles Lapworth established the Ordovician and Silurian boundary and also James Hutton's famous inconformity at Jedburgh. We'll also have a day in Edinburgh exploring some of the famous sites in Holyrood Park.

Our base for the trip is the comfortable Waverley Castle Hotel which sits in beautiful grounds on the outskirts of the small town.

The Waverley Castle Hotel on the outskirts of Melrose is our base for this 5-night trip.

We can still accommodate extra people on this trip in double or twin rooms.

To make a booking email us at:
downtoearth@geosupplies.co.uk or ring us on: 0114 245 5746

Booking forms are only available from us.
email: downtoearth@geosupplies.co.uk
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See overleaf for 2027 trips...

Field trips for 2027...

We are now looking forward to another great season of field trips in 2027. As we are hosting two groups of Americans during the year, it means that the number of trips for general sale will be somewhat reduced. All the more reason to get your bookings in early!

We've been working hard to bring you some exciting trips for 2027 and are currently accepting bookings on five of these trips which are all to new locations not visited by us before.

We are accepting bookings NOW for the trips listed below.

Other trips will follow - watch out for further information!

Furness & the South Lakes. April 16-23 (7-nights) £1295
The Lake District is arguably our premier National Park and it's an area that many of you will have visited. But how many of you know or have ever visited the South Lakes, known as the Furness area? It's an area of scenic coastline with small coastal communities like Grange over Sands and Arnside. From our base in Grange we'll be able to explore a wide area taking in places such as Ravenglass, St Bees, Arnside, Lake Windermere from Lakeside and quarries around Millom.

The Cumbria Grand Hotel is in the tranquil resort of Grange over Sands - our base for the week

All this from the comfort of the Cumbria Grand Hotel in Grange over Sands. Take advantage of this excellent value package, just as the spring flowers come out!
This trip is now available to book with spaces for singles and couples!

Norway - Magma Geopark, May 413 (9-nights) £2595
We have been to Norway on two previous occasions to the Gea Norvegica Geopark where we saw great geology and landscape. This time we are staying in the south of the country but venturing to the Stavanger area which is the location of the fabulous Magma Geopark.

The tour commences with the first night in Oslo where we will be staying in an historic hotel which is actually within the main railway station. From there, we'll take a 7-hour train journey direct to the small town of Egersund, our base for the entire week. Here we stay in the historic Grand Hotel noted for its comfortable accommodation and excellent food.

Each day we'll venture out into the geopark with the geopark's own geologist. You'll see some amazing ancient rocks including anorthosite, that's much more common on the surface of the moon!

Some of the rocks in the geopark include anorthosite, which is more commonly found on the moon.
(Image: Magma Geopark)

There will be visits to former metal mines, a guided tour of a local quarry, as well as walks in the fjord landscape, a boat trip to a local island and much more!
We already have 16 people booked on this trip!

Strathpeffer & Cromarty, May 21-29 £1695
Another new location - not far from Inverness but so very different. The spa town of Strathpeffer was a Victorian favourite for 'taking the waters', But today our hotel has all mod cons and there's no cold baths! It's a great starting point from which to explore the local area which has much to offer the geologist.

The Ben Wyvis Hotel our base in Strathpeffer.

From the local Devonian rocks of Cromarty birthplace of Scottish geologist Hugh Miller to the metamorphics of the local Moine rocks. We'll take in a train trip to Kyle of Lochalsh as well as another to Golspie on the coast to see the Jurassic and Triassic. We also see some of the younger sedimentary rocks around Lossiemouth to the east of Inverness.

We expect this trip to fill up rapidly.

The Abberley & Malvern Hills Geopark, June tbc (7-nights)
Your Editor has had the pleasure of being the President of the Abberley &Malvern Hills Geopark for the past five years and along with the geopark volunteers, knows the area well.

Based at a hotel in Great Malvern, this trip will take you to places where you can enjoy rocks and fossils from many different periods. We go back to the Ediacaran of the Precambrian to see the ***Gullet***

Quarry in the Precambrian rocks of the Malvern Hills
(Image: Abberley & Malvern Hills Geopark)

hard igneous rocks of the Malvern Hills, right on our doorstep. During the Cambrian and Silurian periods we see fossiliferous sediments. The Devonian and Carboniferous see are very different sandstones and even coal seams in the Wyre Forest and around Highley in the Severn Valley. Around Bridgnorth we see the bright red Permian sandstones from a desert environment.
Come and enjoy geology and landscape at its very best! Suitable for all, including those who are new to field geology.

Summer School, University of Warwick, July 31-August 7 (7-nights) c £1695
Our popular Summer School moves to a new location and you cannot get much more central than the University of Warwick, set in countryside on the southern edge of Coventry.

This location will allow us access to the rich and varied geology of north Warwickshire around Nuneaton, Charnwood Forest in Leicestershire, the Black Country Geopark and the Jurassic rocks of the Cotswolds. In short, something for everybody!

We are working on the detailed content of this trip, including

Beacon Hill, Charnwood Forest Geopark
(Image: Chanrwood Forest Geopark)

accommodation options, and will be able to accept bookings in the near future.
For the moment - put the dates in your diary and watch out for more information!

Oban & the Hebridean Isles, September 30-October 9 (8-nights) £1495
Yes, we've found a hotel base in Oban! Now that we can tick that box, we can bring you an action packed week of trips around the surrounding area. With luck we'll get you to the islands of Kerrera, Lismore, Mull, Iona, Luing and Easdale. We'll also take in some of the geology of the mainland, around the Falls of Cruachan, Crianlarich and Tyndrum. You'll see fabulous Scottish geology from the Lewisian through to the Tertiary volcanics with much in between.Enjoy the comforts of the centrally located 3-star Royal Hotel in Oban where we offer ensuite rooms and all main meals.

So, these trips are already open for bookings and places are being snapped up. All currently have places for singles and couples, but be warned they won't last long - especially the single rooms!

Why not contact us now for a booking form for these trips: downtoearth@geosupplies.co.uk or ring us on: 0114 245 5746

An unusual present idea - limited edition...

'The Cream of the Crop 2025'

As part of their work for Geo Supplies, your editorial team, Chris Darmon and Colin Schofield go to some very interesting places around the British Isles. Whilst they are in these places they often pick up rock specimens, most of which go to students and institutions both here and even around the world. However there are also some rare or unusual rocks that don't form part of our regular stock and it is these that we've gathered together into a limited edition collection that we are offering as our 'Cream of the Crop 2025'.

The set comprises 14 carefully chosen specimens from the British Isles: with: graptolitic shale (Llandrindod Wells), Stanner Rock metaigneous (the oldest in Wales), Old Red Sandstone (Goodrington), Hematite (Cumbria), Folly Sandstone (Silurian), Phyllite (Arran), Newmead Sandstone (Builth Wells), Man-o-War Gneiss (Cornwall), Quartz Porphyry (Cornwall), Honister Slate (Cumbria), Hybrid Rock (Arran), Tonalite (Ardnamurchan), Pitchstone (Arran), Felsite (Loch Ba, Mull). Each set comes boxed with notes and costs £54.95 including postage. The set is being offered NOW and will be shipped not later than July.

Purchase online at: *geosupplies.co.uk* *or ring us on: 0114 245 5746.*

backyard geology

This is the place where we feature the stories that you tell us about geological happenings in your local area. Email your story to: downtoearth@geosupplies.co.uk

Oldest marine crocodile fragment found on Lyme Regis Museum walk...

This comes from the Lyme Regis Museum website:

Lyme Regis Museum is delighted to share the discovery of an exceptionally rare marine crocodile maxilla (upper jaw bone) during one of its recent guided fossil walks along the Jurassic Coast. The fossil was discovered by participant Heather Salt, highlighting the remarkable potential for important finds along the beaches of Lyme Regis.

Preliminary identification suggests the specimen belongs to the same type of early Jurassic crocodile as *Turnersuchus hingleyae*, a rare marine crocodylomorph known from very few examples worldwide. In total, only around 11 specimens of this kind have ever been recorded. Of these, two are held by the Natural History Museum, one is displayed at Dinosaurland Fossil Museum and a small number are in private collections. Lyme Regis Museum itself holds several key examples, including the holotype skeleton and additional referred specimens.

Walk Guide Casey Rich said, "This is exactly why I love my role as a field palaeontologist and fossil walk guide. By teaching the basics, we give people the chance to make their own discoveries, and sometimes that leads to finds that are not only exciting, but important to science. Moments like this will remain with me forever."

This discovery reinforces the international importance of the Jurassic Coast as a site of ongoing scientific significance. More than two centuries after the pioneering discoveries of Mary Anning, the cliffs

Images of the recent crocodile find. (Images: Lyme Regis Museum)

and beaches around Lyme Regis continue to reveal fossils that contribute to our understanding of early marine reptiles and prehistoric ecosystems.

Guided fossil walks led by Lyme Regis Museum offer visitors the chance to explore this unique coastline safely, while learning how to identify and responsibly collect fossils. Finds such as this rare crocodile specimen demonstrate that important discoveries can still be made today.

Amateur fossil hunter Heather Salt found the crocodile jaw bone whilst on a Lyme Regis Museum fossil walk led by Casey Rich.

Lyme Regis Museum runs regular fossil walks throughout the year. For more information and to book, visit: www.lymeregismuseum.co.uk.

Popular Southwest Scotland gemrock museum to close at the end of the season...

After 45 years, the popular and well known Gem Rock Museum in Creetown in Southwest Scotland is set to close at the end of the current season. The owners Tim and Carolyn Stephenson have been trying to sell it as a going concern, but have been unable to secure a buyer.

The Creetown Gemrock Museum is housed in a former school building, in the small town of Creetown.

Accordingly they have reluctantly decided to close at the end of October. Over the years many of you may well have paid the museum a visit. Several parties of ***Down to Earth*** readers have been there with Chris and Colin.

Beautiful gemstones are displayed in a well lit room which is accessible for all including those in wheelchairs.

If you'd like to make one final visit, Creetown is 7 miles from Newton Stewart and 11 miles from Gatehouse of Fleet on the A75 Carlisle to Stranraer trunk road directly off the M6 Motorway. Just follow the signs on entering Creetown village.

There are many fine specimens for visitors to enjoy.

The Museum is open every day of the week from 10-4.00. Admission is £8.00 - please note no dogs, except assistance and guide dogs.
Email: enquiries@gemrock.net • Tel: +44 (0)1671 820 357

Wolverine jaw, 90,000 years old found in Stump Cross Cavern in North Yorkshire...

There's a tendency to think that somehow some of our finest show caves, are just that. The thought that some of our ancient ancestors or prehistoric animals actually lived in those self same chambers doesn't enter our heads. But Stumps Cross Cavern, near Pateley Bridge in North Yorkshire has proved that was not the case as volunteers working on excavation work in a new cave at the site discovered back in February.

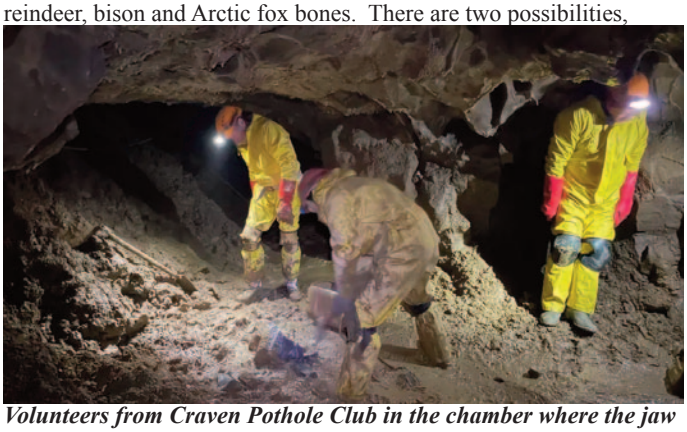
The wolverine jaw bone from Stump Cross Cavern; Pateley Bridge. (Image: Stump Cross Cavern)

Tom Thompson, from Craven Pothole Club, was one of the first people to spot the jaw in the newly disturbed mud and described the Ice Age relic as "incredibly rare. I couldn't believe it - we had been hoping for something like this but when I washed it and looked at it, I was really rather taken back," he said.

Wolverine, might sound like they should be related to Wolves, but that is not the case, they belong to the weasel family. They can still be found today in Arctic and sub-Arctic regions.
The Stumps Cross specimen contains the lower half of the animal's jawbone, with some teeth, including one large canine still attached.

There have been previous finds of wolverine at Stump Cross, but not for at least 40 years and the stalagmites have grown over this time covering up everything on the cave floor. "The initial dating method put it down to about 70,000 years but the more recent research has put it to between 80,000 to 90,000 years old" said Tom.

Other remains found throughout Stump Cross Caverns include reindeer, bison and Arctic fox bones. There are two possibilities,



Volunteers from Craven Pothole Club in the chamber where the jaw bone was found. (Image: Stump Cross Cavern)

either the animals lived in the cave at some point the past, or they somehow fell into the cave. The former has been dismissed as there's no cave entrance as such, so we are looking at the animals falling down the cave shaft into the chambers.

The cave currently being excavated by Craven Pothole Club and other volunteers was first discovered by the Victorians but has since been inaccessible to the general public. The ambition is that it will eventually become an extension of the main tourist attraction.

Thompson said he hoped there would be more discoveries to come during the work. "Everything of interest that we find will be part of a display which will eventually be mounted at the cave," he said.

The find was well covered by BBC Radio York and the Yorkshire Post newspaper, on which our item is based.

A major former waste site in Northamptonshire could be leaking polluted water...

The town of Corby in Northamptonshire was, for more than a century, home to a major steel making works. Like the plant in Scunthorpe, in North Lincolnshire that still operates, it was based around using local sedimentary iron ore from the Lower Jurassic (Lias) strata. This iron ore, which was around 20% iron content was obtained from huge opencast sites.

One of these was at Gretton near Corby, a site known as Deene Quarry. This produced millions of tonnes of ore and kept the Corby

The end result of the operations were huge holes that have since been filled with waste, some of it toxic.

furnaces running until closure in the 1980s. Like other pits it was served by a network of railway lines and other infrastructure that took the ore to Corby.

Part of the Deene Quarry at Gretton, (Image: Patrick Foster.Flikr)

Your Editor well remembers some of the massive draglines that were still in use in similar pits in East Leicestershire in the late 1960s and into the 1970s. After mining stopped the sites became huge holes.

Local online publication NN Journal says:

"For several decades former iron ore site Deene Quarry site was the dumping ground for by-product from Corby's steel industry, with millions of gallons of toxic slurry, slag and industrial chemicals discarded at the former quarry site, creating huge toxic lagoons often littered with empty chemical drums.

The site was cleaned up in the 1980s and 1990s, after the former Corby District Council decided to try and turn around the fortunes of the town after steel making stopped, and transform the huge area (now known as Willowbrook North) into a new industrial complex.

But the clean up operation, which was the biggest in Europe and funded by millions of UK government and European funding was mismanaged, with a landmark legal case about birth defects in 2009 finding that there was a 'dig and dump' policy, that safety regulations were not followed and toxic pollutants that were being transported on open trucks escaped into the atmosphere and were ingested by the pregnant mothers.

Now, thirty years after Deene Quarry was capped off, there are fears it is leaking. The landfill site is the responsibility of the local authority (now North Northamptonshire Council) and is regulated by the Environment Agency (EA). Over the past few years there have been suspicions the site has been leaking onto nearby Gretton Brook Road and into the brook that runs alongside it (which gives the road its name) with reports of the brook turning different colours on occasions

Documents from a meeting convened by Gretton Parish Council in January last year, which have been unearthed by a campaigner, show the concerns about the landfills at Deene Quarry are well founded. Roger Braithwaite, who was the contaminated land expert witness during the High Court case in 2009, said disturbing the contaminated land would be "high-risk", adding "I was very concerned that the amount of waste that had gone to Deene Quarry was far beyond its capacity. Instead of it being a landfill it was a mountain. I did presume that the speedway would stay there... but that's not the case," he said. Meanwhile the Environment Agency (EA) are engaging with the local North Northamptonshire Council to "assess any potential link between activities regulated under their environment permit at Deene Quarry and possible contamination".

Coast to Coast path is Britain's latest long distance trail to be rebranded a National Trail, updated and improved...

A new long distance trail of some 190 miles will take walkers from St Bees on the Cumbrian coast to Robin Hood's Bay in North Yorkshire, It first opened in the 1970s following the imaginative idea of the author Alfred Wainwright.

Natural England's chief executive Marian Spain said at the reopening event, the path showcased some of northern England's "most treasured landscapes. Today marks the completion of four years of work to give this iconic route the status it deserves," she said. Adding: "It will offer a new generation of walkers, wheelers and riders the chance to enjoy the route and bring new tourists to businesses along the way."

The organisation led the multi-million pound work, which included making the path more accessible and improving signage. It said one of its challenges was working against the impacts of climate change, which had been "most extreme" in the North York Moors. The area experienced significant wildfires last year.

Haweswater Reservoir in the Mardale Valley, Lake District. (Image: gov.uk)

The route makes its way through the Lake District, The Yorkshire Dales and the North Yorkshire Moors, taking in three of our national

parks along the way. As such it probably offers some of the finest geology of any of our long distance trails, with rocks ranging from Lower Palaeozoic sediments and volcanics through the Upper Palaeozoic sediments of the Pennines, to the Jurassic of North Yorkshire and even the Tertiary Cleveland dyke.

Fossil' art installation marks Attenborough's 100th birthday in his home county...

On May 8th a wood carved sculpture was unveiled At Beacon Hill in Leicestershire to mark 'local boy' Sir David Attenborough's 100th birthday. But this was no random sculpture, it was a depiction of what was probably the Earth's first predator, *Auroralumina attenboroughi*, named after the famed naturalist and found nearby, in rocks from the Ediacaran.

Wood sculptor, Peter Leadbeater and Councillor Paul Harrison, Chairman of Leicestershire County Council at the unveiling of the sculpture at Beacon Hill (Image: Leicestershire County Council)

The sculpture, which was created by Leicestershire-based chainsaw sculptor, Peter Leadbeater was commissioned by the Charnwood Forest Geopark. Both the sculpture, and the new interpretation area have been made possible thanks to support from the National Lottery Heritage Fund.

Leicestershire County Council and Charnwood Forest Geopark have been working in partnership to prepare the interpretation area ready for visitors to see this May.

Dr. Jack Matthews, Geoheritage Officer at Charnwood Forest Geopark said: "*Auroralumina attenboroughii* is one of our most famous fossils – but its also very rare – so rare we keep its location secret.

The sculpture and its explanation

Thanks to our partnership with the county council, and the amazing sculpture of Sir David's fossil, we can now share this fascinating story with visitors to the Geopark and ensure everyone knows just how amazing Charnwood Forest's geology is."

A deal to acquire the 'Rutland sea dragon' is now unlikely to go ahead...

In February a news item proclaimed that the 2021 fossil find beneath Rutland Water was close to being signed over to the County Council and would form the centrepiece of a revamped County Museum. Now, it seems, that the entire plan has stalled because it was set to be moe than £1 million over budget.

The fossil, an ichthyosaur, was painstakingly removed from the shores of Rutland Water in 2021. (Image: Anglian Water)

As of early May 2026, Rutland County Council is not proceeding with plans to acquire and display the 10 m Rutland Sea Dragon ichthyosaur fossil at the Rutland County Museum due to soaring costs. Despite previous budget proposals for a £6 million project, inflation and increased construction costs forced the council to drop the plan.

your feedback

Tell the Editor what you think about any geological subject or article in DtoE
Email: downtoearth@geosupplies.co.uk
or write to him at the usual address

Dear Editor

Blue Lias limestones (DtoE 134)

Sylvia Sherriff's fascinating article about the Blue Lias limestones ***(DtoE 134)*** reminded me of a geological controversy over how these limestones form. At present day we have alternating beds of shale and limestone, but were they deposited like this: as beds of clastic mud alternating with lime mud?

An alternative idea is that the original sediments were more homogeneous, a more even mix of clastic and limey components, and that these have 'un-mixed' during burial. The idea is similar to how concretions form in sandstones, so not as unlikely as it sounds. Regardless, most people have assumed that the beds are picking out some initial variation in the sediments. This variation has been attributed to climate change caused by the Earth 'wobbling' on its axis, the Milankovitch cycles as they are known – but other studies have claimed to disprove this. I think that the jury is still out on this one.

In the same issue, there's an article about fire-making in Suffolk, you mention the presence of pyrite "a mineral that can produce sparks when struck with flint".

The accompanying photograph (see above) appears to be a fragment of a marcasite nodule, not pyrite. Marcasite has the same chemical formula as pyrite but a different crystal structure (orthorhombic rather than cubic), and the nodules have a distinctive radial-fibrous texture. They occur locally in The Chalk. Apparently, rusty weathered nodules are commonly brought into museums in Chalk areas, mistaken for meteorites. I don't have a piece to see if I can make a spark with marcasite, if you try this at home then be careful!

Dr Mark Wilkinson,
Professor of GeoEnergy,
University of Edinburgh

Dear Chris & Colin

An appeal for more geological information on new England Coast Path

Down to Earth reader Caroline felt so strongly about the lack of geological information on the new England Coast Path that she penned a draft letter to no less than His Majesty King Charles III, who launched the path.

I'm not sure that she sent it in the end, but here are the heartfelt contents:

Your Majesty,

I am writing to express my deep appreciation for the creation of the new England Coast Path. It is a magnificent achievement — a gift to the nation — opening up our shores to walkers, families, and future generations. As someone who has spent a lifetime exploring the landscapes of Somerset and the wider South West, I am profoundly grateful for this renewed connection with our coastline.

I hope I may also take the liberty of asking for your support for something that would greatly enrich the experience of those who walk the path: geological interpretation boards along its length. Our coastline is not only beautiful; it is a living textbook. Every cliff, cove, and headland tells a story — of ancient seas, vanished continents, and the deep history that shaped these islands long before we walked them.

Geology matters because it teaches children to look closely, to ask questions, and to understand the world beneath their feet. It explains why our coasts look as they do, why our landscapes differ from place to place, and how the forces of nature have shaped our island story. You cannot truly paint a picture of Britain's coast without understanding the rocks that hold it together.

Interpretation boards would help families, schools, and visitors discover these stories for themselves, deepening their appreciation of the natural world and strengthening the connection between people and place; something I know Your Majesty has championed throughout your life.

With my warmest respect and gratitude for your continued dedication to the landscapes and heritage of our country.

Carolyn Warburton, Taunton

Dear Chris

Pillow lavas at St Ives

After finishing our trip together in Cornwall, Stephanie and I went on to St Ives where we managed to locate the pillow lavas you told us about.

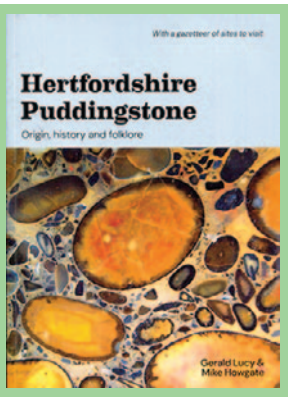
What a surprise they were and so obvious.

Richard Baldwin & Stephanie Davis, USA

a good read

Reviewer: Chris Darmon

Book Choice



Title:	Hertfordshire Puddingstone
Authors:	Gerald Lucy & Mike Howgate
Publisher:	The Rock Gallery
ISBN:	978 1 9194463 0 1
Format:	Softback
Cost:	£12.00
Level:	Adult & general interest
My rating:	*****

It was a great surprise to receive a review copy of this book as I had no idea that these two well known geologists were working together on this subject, that I know is close to each of their hearts. It's also very refreshing to be able to offer so much material for such a reasonable price.

If you've never seen, or better still handled, Hertfordshire Puddingstone you've missed out on one of or most attractive and iconic rocks. It occurs, as the name suggests, in Southeast England and must rank as the hardest rock in the entire area. Whilst it's named from the county of Hertfordshire, these days you are more likely to come across it in Essex or Buckinghamshire where distinctive large boulders of it can be found on roadsides or even in fields.

On one level puddingstone is a conglomerate with distinctive pebbles of flint, cemented together with more fine silica. It's colour can vary from one specimen to another, but is frequently shades of orangey/brown. But to stop at this point with the rock is to miss out on the most important aspects - its origin and the processes that give us the rock today.

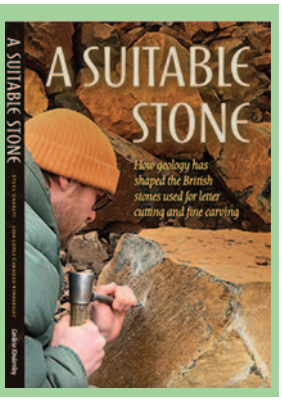
In this compelling book, Gerald and Mike take us back to the Upper Cretaceous, to a time when the surface of the Earth was at about 45°C and when there were extreme greenhouse conditions. It was a time when the chalk was being laid down across much of the British Isles. That chalk contained numerous flint nodules, the principal ingredient of our puddingstone.

Fast forward to the more recent Palaeocene, when the climate was still warm and the chalk was being rapidly eroded. Pebble beds were being laid down and silicification was occurring. You'll have to read for yourself to find out exactly what happened - but it's a compelling read!

Next, the authors turn to the history and uses of this amazing rock and here you are guaranteed to have one or two surprises! Did you know that there's a 12th century 'travelling altar' made from a slab or puddingstone or that Neolithic people were using puddingstone to make implements as early as 6000 BC.

No book about the puddingstone would be complete without reference to some of the superstitions that abound connected to the rock. They also find the space to review other similar rocks including a gold bearing one from South Africa.

If reading this book wets your appetite to go and find some for yourself, there even a gazetteer to help you do just that!



Title:	A Suitable Stone
Authors:	Steve Garrett & Lida Lopes Cardozo Kindersley
Publisher:	Cardozo Kindersley
ISBN:	9781 1 7395878 3 3
Format:	Hardback
Cost:	£20.00
Level:	Adult & general interest
My rating:	****

This unusual, and at the same time beautiful book, is a fusion of the work of two people who come at stone from two very different angles. Steve is the geologist and Lida the stone carver. They each have very ancient stone as the target of their interest.

In this book they explore aspects and views of stone across a platform that takes in both the scientific and the artistic approaches to stone. Lida is a highly accomplished letter cutter and stone carver who was keen to learn more about the back stories of the stones that she works with. Steve is a geologist and fellow of the Geological Society of London. After a long and varied career in several different aspects of geology he now concentrates on his love of music, especially the guitar.

After a visit to Lida's workshop in Cambridge he became fascinated by the links between Earth science and the creative arts and this book is one of the fruits of that work.

The book explores in an almost interactive way how each of the authors approaches stone. It's presented in a way that verges on the conversational with text contributed from each of them alternately. In this way we have an insight into how each is thinking about the same aspect of the same stone.

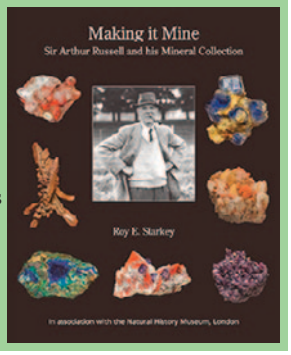
What's surprising for me is how some common threads quickly rise to the surface. Both give stone the respect it deserves. For Steve it's the science behind the stone's formation, for Lida it's how well it behaves in her hands, how well it performs. I would say that for each of them stone is almost given a due reverence.

For a book like this to work as well as it does requires for it to be very well designed and illustrated and I'm pleased to say that it passes this test with flying colours. This is not surprising given that Lida's original subject was graphic design where she graduated from the Royal Academy in the Hague.

"A Suitable Stone" is an easy read that you'll possibly read in a single sitting, as I did, and that's my one doubt about it. I wonder how many people will want to part with £20.00 for the privilege of acquiring this book. I hope that people will want to explore this subject alongside Steve and Lida, but I have my doubts. Could this subject be explored in other ways via an online publication? It needs to be seen by many more people.

Copies of this book can be obtained from: The Cardozo Kindersley Workshop, 152 Victoria Road, Cambridge, CB4 3DZ

Book Choice



Title: Making it Mine
Author: Roy E. Starkey
Publisher: British Mineralogy Publications
ISBN: 978 0 9930182 4 4
Format: Hardback
Cost: £45.00
Level: Adult & general interest
My rating: *****

In the mineral world, the name of Sir Arthur Russell is almost at the level of royalty. Sir Arthur Edward Ian Montague Russell, 6th Baronet (30 November 1878 – 24 February 1964) was an eminent amateur British mineralogist. The Russell Society which is Britain's foremost society for today's mineral collectors is named after him.

Roy Starkey is well known as an author of numerous mineral books and many of you will have heard him talk at a local geological society. This, by a country mile, is his largest and most ambitious project to date. There would be few people who would be prepared to take onboard a task as large as this. Everything about this book is supersized, beginning with the format, the number of pages 432, and the sheer volume of information.

A book like this, that has at its heart fine mineral specimens, cannot succeed without superb quality images and equally fine reproduction. This has both in spadefulls. One of our customers, even took the trouble to tell us how impressed he was with his purchase, and that's pretty rare.

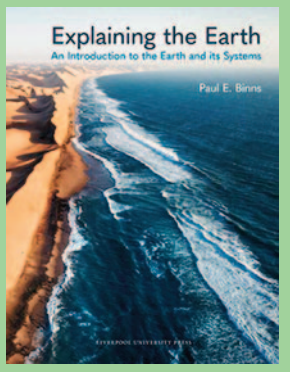
So far I've talked about the spectacular mineral specimens that are at the heart of Sir Arthur Russell's collection, but ***Making it Mine***, is far more than just an illustration and description of the contents of a collection. At its heart is a social history story of how a baronet pursued his quest to build the finest collection of British minerals that had ever been assembled.

In order to tell this story as completely as possible, Roy first delves into the history of Russell's family. In this way he seeks to uncover the origins of his passion that drove him to acquire the very finest specimens for his collection. This he did, at almost any cost.

He further explores the behind the scenes stories of the people who lie behind some of the individual specimens. Who were they were and how were they able to line up Russell as their customer? At the heart of the story are the many people who assisted Russell in his quest. Yes,
Russell had the influence and the necessary money, but his suppliers crucially had the minerals, without which, Russell could not amass his unrivalled collection.

I am in awe of Roy Starkey for what he has done with this subject matter. Lesser people would have failed in the task, but he has

Book Choice



Title: Explaining the Earth
Author: Paul Binns
Publisher: Liverpool University Press
ISBN: 978 1 780 46105 2
Format: Hardback
Cost: £35.00
Level: Adult & general interest
My rating: *****

I'm often asked by adults who would consider themselves to be generally well educated and informed, but lacking in formal geological qualifications, to recommend a book to take them further in their personal geological journey. In the past there were a number of first year university textbooks or even books aimed at A-level students. But in recent times, I've struggled to find anything for them. I'm pleased to say that is no longer the case.

Author Paul Binns has timed his book almost to perfection. We are in an age where understanding our planet's changing environments is increasingly vital, and a basic knowledge of the Earth sciences has never been more relevant. Today people are more curious than ever about the processes that have gone on since our planet was born, yet those processes are a closed book to them. ***Explaining the Earth*** is indeed what many people have been looking for - I'm sure that it will answer many of your questions.

Crucially, ***Explaining the Earth*** is written for readers without a scientific background. It's an accessible and concise overview, perfectly suited to the increasing interdisciplinary interest in the Earth sciences, and to general readers with a curiosity about the planet's composition, environments and systems.

Covering an array of topics, it provides a dynamic introduction to Earth's physical and atmospheric sciences, from the forces that shaped our landscapes after the last Ice Age, to the depths of the oceans and the peaks of mountain ranges. It also explores rock types, geological processes, 'hidden' aspects like Earth's electromagnetic field and internal pressures, as well as the influence of changing landscapes on human evolution and civilization.

I'm impressed with how different this book looks and feels. Conventional wisdom would dictate that you start with something like the origin of our planet, then look at its chemistry which is expressed in its minerals and rocks and then get stuck into something like plate tectonics. But this is not for Paul Binns.

He begins with a journey of discovery of the Earth sciences themselves. Seeking to determine how our understanding of planet Earth has evolved and developed through time. In this journey through historic time we see the work of people like James Hutton in context. The same goes for more recent hypotheses such as plate tectonics. In this way he brings the reader inside the tent and thus share their discoveries in a more intimate and less threatening way.

Essentially, author Paul Binns provides a clear and engaging explanation of Earth's workings. Illustrated throughout and including a glossary of key terms, it's a book that fosters a deeper understanding and appreciation of the beauty of our planet, and its future. Yes, this is a very engaging read, it won't answer all of your questions but what book could? That said, it sure is a good start.

brainteaser

In this quirky brainteaser, we ask the Questions...

Who, What & Where?

I hope that you were all able to recognise that the images were pointing you towards someone who was widely travelled and was also a pioneer from the nineteenth century.

Well done to those of you had a go whether at home or who formally submitted a response.

Who? *Stan Wood - fossil collector and dealer (1934-2012)*

What? *This is the interior of Stan's shop in Edinburgh's old town, which he ran for many years. It is still trading today as 'Mr Wood's fossils'*

Where? *Stan Wood is associated especially with Edinburgh*

Because Stan comes from the much more recent past, it brought us some personal memories, such as this from Mike Howgate who said:

"Well, not a brainteaser at all !!

The who is my old mate Stan Wood R.I.P. The what is the interior of 'Mr Wood's Fossil Shop' and where is Cowgatehead in Edinburgh.

I remember the address as my school-friends used to chant "Cow and Gate farmer's wife double Devon cream" after me at school, until I gave them a good thumping!

Richard Mann sent in his usual well thought out comments of which this is a part. He added many of Stan's achievements.
Once he understood how to identify fossil bearing strata he concentrated on the 'Romer's Gap' the so called gap in the fossil record of the early Carboniferous Period. From the age of 32 he made unexpected discoveries of Carboniferous tetrapods (the first discoveries for 100 years) and later the peculiar Bearsden Shark. His fossil collections reversed the long lasting idea of an inhospitable low level of oxygen 350 My ago and changed the perceived palaeo environment. Despite a terminal cancer diagnosis he continued until his death in 2012 registering more than 5500 specimens and discovered 34 new species during his 40 year career.

Meanwhile, another regular correspondent Paul Thornley said:
Stan was a self-taught Scottish palaeontologist and fossil hunter. Many of his finds were close to places he lived, around Glasgow and the Borders. Among his most significant discoveries was unearthing 3 tonnes of bone bed from an open cast coal mine in Fife in 1974. This proved to contain Carboniferous tetrapods and fossil fish. He then discovered the 62 cm long fossil Bearsden Shark, the most complete skeleton of a Carboniferous shark, from a local burn at Bearsden where he was living. In 1984 he worked at an abandoned quarry at East Kirkton, finding both marine and terrestrial arthropods and a tetrapod named 'Lizzie', an early reptile.

The shop is Mr Wood's Fossils, in Edinburgh. Still trading using the original name. There are stories of Wood getting bored at running the shop and leaving it open to walk round the area, returning to find customers waiting patiently to pay for items.

This is our new brainteaser - it's not a competition with prizes! We'd like you to study these images and answer the Question: Who, What & Where?

Once again we're asking you to engage your little grey cells! Who was he, what's he known for and which places is he most associated with?

Please contact us before July 15th. by email: downtoearth@geosupplies.co.uk

diary of events

Please be aware that a number of clubs/societies are currently oerating with a mix of live events and Zoom meetings. Please check with the organisers what model they are working to on each occasion.

lectures/zoom meetings

May
19 "Greenland: glaciers, ice & physics of the world's largest island" by Laurence Dyke
Organiser: West of England GA Details: https://www.wega.org.uk/ (Zoom)
19 "Anne & Dennis's Mineral Collection" by Anne Padfield
Organiser: Kent Geologists' Group Details: www.kgg.org.uk/
20 "The geology of Antarctica - a personal journey" by James Cresswell
Organiser: Mid-Wales Geology Club
Details: https://www.midwalesgeology.org.uk/programme/
21 "The mantle and evolution of landscapes on geological timescales" by Matthew Morris
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Stanway)

June
1 "The Murchison Meteorite" by Jim House
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
4 "The geology of Oman" by Alan Heward
Organiser: Bath Geol. Soc. Details: https://bathgeolsoc.org.uk/lectures/
5 Talk by Prof. Simon Conway-Morris
Organiser: Geol. Assoc. Details: https://geologistsassociation.org.uk/lectures/
8 "Rock solid 8 - oceans". by Ros & Ian Mercer
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Shenfield)
9 "Pavement palaeontology: fossils hiding in plain sight" by Paul Taylor
Organiser: Amateur Geol. Soc. Details: https://amgeosoc.wordpress.com/
9 "Evolution: a complementary perspective" by Mike Goodyear
Organiser: East Herts. Geology Club Details: https://ehgc.org.uk/
10 "Life and rocks - a deep time story of Earth's transformation" by Ernest Chi Fru
Organiser: Harrow & Hillingdon Geol. Soc. Details: https://www.hhgs.org.uk/
11 "The Chalk Sea Ecosystem Project" by James Witts
Organiser: Hertfordshire Geol. Soc. Details: https://www.hertsgeolsoc.org.uk/
11 Micro-lectures and summer soirée
Organiser: Mole Valley Geological Society. Details: www.mvgs.org.uk
12 "Anglesey - the isle of ice & time" by Robert Crossley
Organiser: Farnham Geol. Soc. Details: https://www.farnhamgeosoc.org.uk/
16 "Mark Twain's geological oddities" by Geoff Turner
Organiser: Kent Geologists' Group Details: www.kgg.org.uk/
17 "The making of Snowdonia, ancient volcanoes & glaciers" by Paul Gannon
Organiser: Mid-Wales Geology Club
Details: https://www.midwalesgeology.org.uk/programme/
18 "Extinction: past, present and future" by John Ratford
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Stanway)
19 "Advances in Jurassic correlation using ammonites" by Bob Chandler
Organiser: West Sussex Geol. Soc. Details: https://wsgs.org.uk/

July
2 Short talks by society' members
Organiser: Bath Geol. Soc. Details: https://bathgeolsoc.org.uk/lectures/
2 "Fluid flow and deformation along the margins of the Bristol Channel Basin" by Mark Anderson
Organiser: Hull Geol. Soc. Details: https://hullgeolsoc.co.uk/hgmeet.htm
3 Talk by Emily Swaby
Organiser: Geol. Assoc. Details: https://geologistsassociation.org.uk/lectures/
7 "Rock Solid 9 - glaciers" by Ros and Ian Mercer
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Shenfield)
8 "All fossils are rotten: the science of death, decay and preservation" by Thomas Clements
Organiser: Harrow & Hillingdon Geol. Soc. Details: https://www.hhgs.org.uk/
9 "Venus' past - Earth's future?" by Richard Ghail
Organiser: Mole Valley Geological Society. Details: www.mvgs.org.uk
9 "Researching the Puddingstone book" by Gerald Lucy
Organiser: Hertfordshire Geol. Soc. Details: https://www.hertsgeolsoc.org.uk/
14 "The 200th anniversary of Iguanadon" by Christopher Duffin
Organiser: Amateur Geol. Soc. Details: https://amgeosoc.wordpress.com/
16 "Deep mines & sharp edges" by Adam Wightman
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/ (Stanway)
21 "Marine reptiles" by Will Richardson
Organiser: Kent Geologists' Group Details: www.kgg.org.uk/

August
15 "Then and now: Charles Darwin as geologist, followed by the Anthropocene - When did it begin?" by Anthony Brook
Organiser: Kent Geologists' Group Details: www.kgg.org.uk/
19 Members' evening
Organiser: Amateur Geol. Soc. Details: https://amgeosoc.wordpress.com/
19 "The geology of Northumberland" by Geoff Smith
Organiser: Mid-Wales Geology Club
Details: https://www.midwalesgeology.org.uk/programme/

day field trips & visits

Please ensure that you contact the organisers in advance of any field trip advertised. Please don't just turn up, it may be for members only.

May
17 Field visit to Tynemouth with Jon May
Organiser: North Eastern Geol. Soc. Details: https://www.negs.org.uk/
19 Field visit to Shap limestone quarry with Chris Arkwright
Organiser: Westmorland Geol. Soc. Details: https://westmorlandgeolsoc.org.uk
30 Field trip to explore the Greensands with Alan Smallwood
Organiser: Farnham Geol. Soc. Details: https://www.farnhamgeosoc.org.uk/
30 Fossil fossick at Mappleton with Brenda & Jack Almond
Organiser: Hull Geol. Soc. Details: https://hullgeolsoc.co.uk/hgmeet.htm
31 Rocks in the cemetery with Mike Horne
Organiser: Hull Geol. Soc. Details: https://hullgeolsoc.co.uk/hgmeet.htm

June
3 Field visit to Ingleborough with Bernard Skillerne de Britowe
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
3 Field visit to Radcliffe on Trent area with Andy Howard
Organiser: East Midlands Geol. Soc. Details: https://www.emgs.org.uk/in
6 Pebbles on the beach West Sussex
Organiser: West Sussex Geol. Soc. Details: https://wsgs.org.uk/
6 Field visit to Burnmouth in Scottish Borders with Katie Strang
Organiser: Geol Soc. of Glasgow
Details: https://geologyglasgow.org.uk/events/
6 Field visit to the Isle of Thanet with Richard Hubbard
Organiser: Geol. Assoc. Details: https://geologistsassociation.org.uk/lectures/
7 Field visit to Rosedale and Hutton le Hole with Ian Warrington & Bob Appleyard
Organiser: Huddersfield Geology Group
Details: https://www.huddersfieldgeology.org.uk/field-trips
10 Field visit to the Forest of Dean with Rich Daniels and Ross Garden
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
10 Field visit to Whitbarrow with Paul Carling & Richard Wrigley
Organiser: Westmorland Geol. Soc. Details: https://westmorlandgeolsoc.org.uk
11 Field visit to Crystal Palace Park to see geological sculptures
Organiser: Amateur Geol. Soc. Details: https://amgeosoc.wordpress.com/
12 Field visit to see the Windermere Group with Richard Wrigley
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
13 Visit to 'Hutton 300: Landscape, rocks & time exhibition'
Organiser: Edinburgh Geol. Soc. Details: https://edinburghgeolsoc.org/
13 Visit to Dudley Museum & Archive with Graham Worton
Organiser: Black Country Geol. Soc. Details: honsec@bcgs.info
14 Field visit to Wensleydale with Lesley Collins
Organiser: North Eastern Geol. Soc. Details: https://www.negs.org.uk/
17 Field visit to Rayne Quarry with Jonathan Spencer
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/

17 Field visit to Seathwaite Fell with David Hasleden
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
18 Visit to Guildford for a building stones walk with Mike Caulfield
Organiser: Farnham Geol. Soc. Details: https://www.farnhamgeosoc.org.uk/
18 A visit to a local stone yard in Arundel with Ray Cooper
Organiser: West Sussex Geol. Soc. Details: https://wsgs.org.uk/
20 Field visit to Trowbarrow Quarry with Caroline Goodship
Organiser: Westmorland Geol. Soc. Details: https://westmorlandgeolsoc.org.uk
21 A building stones walk in Dorking with Mark Eller
Organiser: Mole Valley Geological Society. Details: www.mvgs.org.uk

July
1 Geoconservation at Rifle Butts SSSI with Mike Horne
Organiser: Hull Geol. Soc. Details: https://hullgeolsoc.co.uk/hgmeet.htm
4 Field visit to Siccar Point for Deep Time Trail
Organiser: Edinburgh Geol. Soc. Details: https://edinburghgeolsoc.org/
5 Field visit to Burton Dassett with Ray Pratt
Organiser: Black Country Geol. Soc. Details: honsec@bcgs.info
5 Field visit to Llandudno with Cathy Hollis
Organiser: Geol. Assoc. Details: https://geologistsassociation.org.uk/lectures/
8 Field visit to Grizebeck area with Dave Kelly
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
9 Field visit to Arnside with Tim Tranter
Organiser: Westmorland Geol. Soc. Details: https://westmorlandgeolsoc.org.uk
11 Field visit to Spireslack
Organiser: Edinburgh Geol. Soc. Details: https://edinburghgeolsoc.org/
18 Field visit to Grimes Graves with Jonathan Spencer
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/
18 Visit to St Albans for a building stones walk
Organiser: Hertfordshire Geol. Soc. Details: https://www.hertsgeolsoc.org.uk/
18 Field visit to Lochranza and Corrie Shore, Isle of Arran with David Webster
Organiser: Geol Soc. of Glasgow
Details: https://geologyglasgow.org.uk/events/
18 Field visit to Hessle Foreshore with Mike Horne
Organiser: Hull Geol. Soc. Details: https://hullgeolsoc.co.uk/hgmeet.htm
18/19 Field visit to Flamborough Head and Yorkshire Coast with Paul Hildreth
Organiser: Geol. Assoc. Details: https://geologistsassociation.org.uk/lectures/
18 Family geology day at Rustington Museum
Organiser: West Sussex Geol. Soc. Details: https://wsgs.org.uk/
22 Field visit to the Lickey Hills with Ray Pratt
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com
25 Field visit to the Jurassic of the Stamford area with Mark Barron
Organiser: East Midlands Geol. Soc. Details: https://www.emgs.org.uk/
25 Visit to Bewdley Museum with Liz Cowley & Andrew Harrison
Organiser: Black Country Geol. Soc. Details: honsec@bcgs.info
26 Field visit to Chichester for a building stones walk with David Bone
Organiser: Farnham Geol. Soc. Details: https://www.farnhamgeosoc.org.uk/
27 Field visit to the Millom area with David Kelly
Organiser: Westmorland Geol. Soc. Details: https://westmorlandgeolsoc.org.uk

August
2 Field visit to the Cheviot area with Ian Killie
Organiser: North Eastern Geol. Soc. Details: https://www.negs.org.uk/
5 Field visit to Binsey area with Ian Francis
Organiser: Cumberland Geol. Soc.
Details: https://www.cumberland-geol-soc.org.uk/events/
6 Field visit to Northaw Village & Northaw Great Wood with Mike Howgate
Organiser: Amateur Geol. Soc. Details: https://amgeosoc.wordpress.com/
8 Field visit to Ballachulish Slate Quarry with Joan Walsh
Organiser: Geol Soc. of Glasgow
Details: https://geologyglasgow.org.uk/events/
14. Field visit to Skipsea for Rockwatch & young geologists
Organiser: Hull Geol. Soc. Details: https://hullgeolsoc.co.uk/hgmeet.htm
15 Family geology day at Novium Museum, Chichester
Organiser: West Sussex Geol. Soc. Details: https://wsgs.org.uk/
22 Field visit to Highwood Quarry with John Walmesley
Organiser: Essex Rock & Min. Soc. Details: http://www.erms.org/
22 Field visit to Elephant Rock, Montrose
Organiser: Edinburgh Geol. Soc. Details: https://edinburghgeolsoc.org/
22 Feld visit to Nidderdale, searching for Carboniferous trilobites
Organiser: Huddersfield Geology Group
Details: https://www.huddersfieldgeology.org.uk/field-trips

residential field trips

June
17-25 Shetland the Northern Isles with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

July
5-10 The Anglesey Geopark with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk
6-10 The Northwest Highlands with Pete Harrison
Organiser: Westmorland Geol. Soc. Details: https://westmorlandgeolsoc.org.uk
8-10 A celebration of James Hutton - Edinburgh based field trip
Organiser: Geologists' Association.
Details: fieldmeetings@geologistsassociation.org.uk
17-19 Flamborough & East Yorkshire
Organiser: Geologists' Association.
Details: fieldmeetings@geologistsassociation.org.uk

August
8-15. Annual Summer School at Harper Adams University, Shropshire
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

September
11-13 The Malvern Hills with Nick Chidlaw
Organiser: East Midlands Geol. Soc. Details: https://www.emgs.org.uk/
13-22 The North & Eastern Fjords of Iceland with Chris Darmon
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk
15-23 Navarra & Arragon, north Spain
Organiser: Geologists' Association.
Details: fieldmeetings@geologistsassociation.org.uk
25-October 1 The geology of Jersey
Organiser: Reading Geol. Soc. Details: rgs.secretary@btinternet.com

October
18-24 Melrose & the Southern Uplands with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk
20-23 Forest of Dean &Wye Valley with Dave Green
Organiser: Farnham Geol. Soc. Details: https://www.farnhamgeosoc.org.uk/

2027

April
16-23 Furness & the South Lakes with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

May
May 4-13 The Magma Geopark Norway with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk
21-29 Strathpeffer & Cromarty with Chris Darmon & Colin Schofield
Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

July
31-August 7 Summer School Warwick with Chris Darmon & Colin
Schofield Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

September
30-October 8 Oban and the Hebridean Islands with Chris Darmon & Colin
Schofield Organiser: Down to Earth Details: downtoearth@geosupplies.co.uk

fairs, shows & special events

September
25-27 The Geologists' Association Annual Conference at York
Organiser: Geol. Assoc. Details: https://geologistsassociation.org.uk/lectures/

November
7/8 GA Festival of Geology, Burlington House, London
Organiser: Geol. Assoc. Details: https://geologistsassociation.org.uk/

Our regular little 'tail-pieces' of information some serious, others light. If you've found something - share it with us all.

The man who swapped a meteorite fragment for a bike in 1965...

Just over 60 years ago, on Christmas Eve 1965, the Leicestershire village of Barwell on the outskirts of Hinckley, experienced an event that still marks it in history today. A meteorite older than the Earth itself broke up over the village.

David Radford from Barwell in 2025
(Image: Courtesy of BBC Radio Leicester)

David Radford was a teenager in Barwell at the time. A few days after the impact David stumbled across a fragment of the meteorite. He picked it up and took it home. It weighed 1.3 kg, a sizeable piece by any standard.

A week later there was a knock on his door, it was the late British astronomer Sir Patrick Moore, who presented the BBC programme ***The Sky at Night***. He was joined by an official from The Natural History Museum in London.

Another fragment of the 1965 Barwell Meteorite on display at New Walks Museum in Leicester.
(Image: Courtesy of Astronomy in Leicestershire)

Speaking to BBC Radio Leicester, David Radford said: "They just turned up, they asked to see me and the meteorite and they wanted to see if it was real and authenticate it," he said. After the two visitors confirmed it was a meteorite, David said the official asked if the museum could buy it from him. He said he was given £23 (£393 when adjusted for inflation), as the going rate was 10 shillings per ounce of meteorite.

At the time David owned a second hand bike, so decided to use his unexpected 'windfall' to purchase a brand new racing bike. "I think I'm the only person that can say their racing bike fell from the sky" said David to the BBC.

The Barwell meteorite has, over the intervening 60 years been the subject of several studies, most recently by scientists at The Natural History Museum who found that David's fragment contained a 'pebble' inclusion, which must predate the rest of the meteorite. However such material was considered to have only occurred later than the meteorite before this discovery was made.

The Editor comments: What a wonderful story! I think that The Natural History Museum got a bargain, even if, at the time, David thought that he had a fair deal.

The remote St Kilda - Julia says 'hello'...

Down to Earth reader and contributor, Julia Madelin sent in a couple of pictures of the UK's most remote island - St Kilda. As of May 11th. she is on a small cruise ship and took the images on May 10th.

This summary of St Kilda's geology comes from The Geological Society:
"St Kilda is the eroded remains of a 60-million-year-old Palaeogene volcanic centre, characterized by intrusive igneous rocks formed beneath a volcano that was part of the North Atlantic opening. The archipelago consists primarily of coarse-grained gabbro in the southwest and granitic intrusions at Conachair, surrounded by sheared igneous breccia and complex dyke systems."

For a small area, the geology is surprisingly varied with gabbros,

Some of the gabbro is layered and this is what may be seen in this part of the coast. (Image: Julia Madelin)

dolerites and basalts, but also, some granite and quite extensive volcanic breccias. As you might imagine, the coastal scenery is dramatic as it is frequently bombarded by Atlantic Ocean storm waves. That said, the dominant topographical features of St Kilda are mainly the result of Quaternary glaciation and a small glacier probably occupied Village Bay during the Devensian glacial maximum. Today St Kilda is part of a drowned landscape.

'Dangerous substance' turns out to be harmless salt...

A major road in the Leicestershire town of Loughborough was closed and people evacuated from buildings when a 'potentially hazardous' substance was reported. Police, fire and ambulances were called to the town's Baxter Gate.

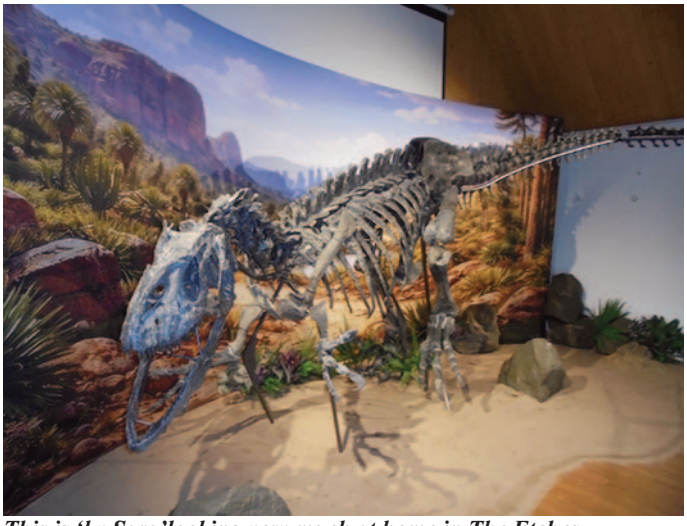
(Image: fosse 107)

Closer examination revealed the substance to be nothing more lethal than common or garden rock salt! Follow up enquiries laid no blame on the person who alerted the authorities, but one person was arrested on suspicion of causing a hoax.

Meet 'Big Sara' the allosaurus at the Etches Collection in Kimmeridge...

On a recent visit to ***The Etches Collection*** in Kimmeridge some ***Down to Earth*** readers came face to face with a 150 million year old dinosaur that has found a new home on Dorset's Jurassic Coast.

Dubbed 'big Sara' she has become the newest and largest addition to The Etches Collection's fossil family and is on loan to the museum for the next two years thanks to Poole businessman James Benamor, who bought her at auction six years ago.



This is 'by Sara'looking very much at home in The Etches Collection, where she will be for the next two years. (Image: Chris Darmon)

Speaking about 'big Sara" Steve Etches said: "It was on show at Westquay shopping centre in Southampton, but its owner James Benamor really wanted it to be displayed on the Jurassic Coast and offered it to us first and foremost rather than to Dorchester, which is well inland.

James bought it on a whim for about £3 million when it came up for auction at Paris in 2020 and it will be on loan to us for the next two years courtesy of ***The Richmond Group***, offering a limited time opportunity to encounter one of the Jurassic's most formidable predators up close.

One of his children had come here as part of a school group and was really impressed, and we were the first place he thought of as a home for the skeleton."

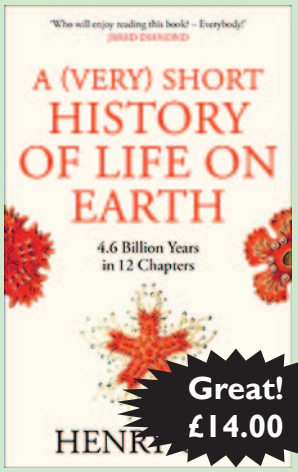
The Editor says: It was great to see 'big Sara' during our visit and also to renew our friendship with Steve Etches himself who came out and had a brief chat.

You can drop in to see 'big Sara' when you next visit The Etches Collection.

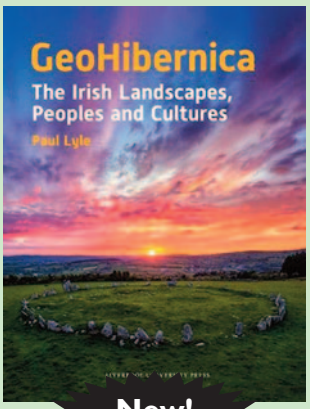
The Etches Collection Museum of Jurassic Marine Life
Kimmeridge, Dorset BH20 5PE.
Email: info@theetchescollection.org • Tel: 01929 270000

GEO Featured books May to August

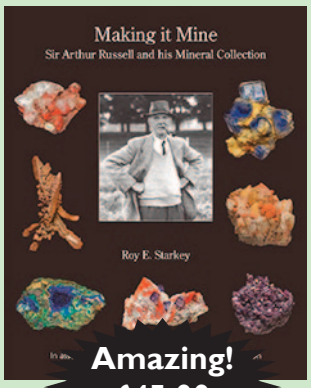
In each issue we are pleased to be able to introduce you to a range of featured books. Where they are being offered at reduced prices, these will be current to the end of August 2026 provided that stocks are available. This month we feature a variety of different books. Please note, all prices include UK postage.



Great! £14.00



New! £50.00

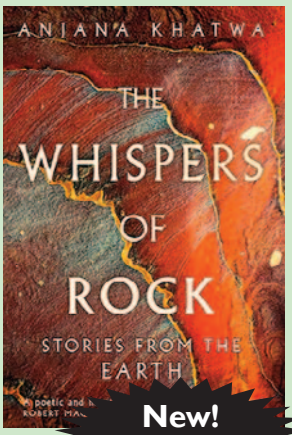


Amazing! £45.00

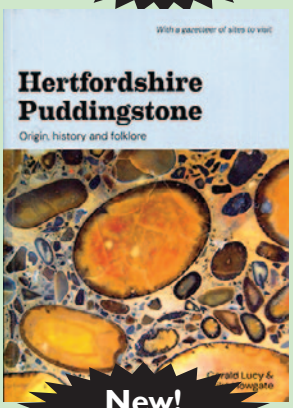
New! £20.00

New! £22.00

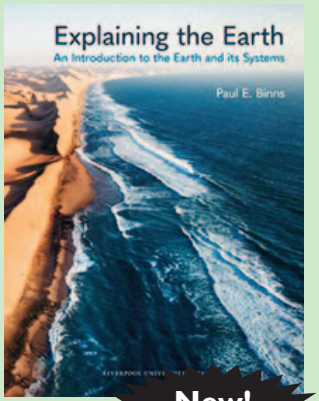
New! £7.00



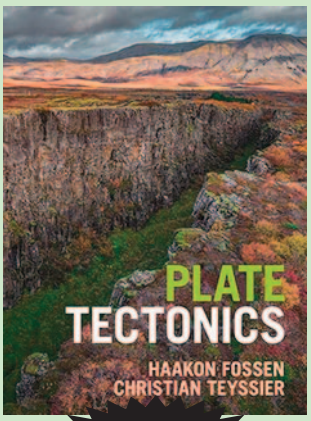
New! £25.00



New! £14.00

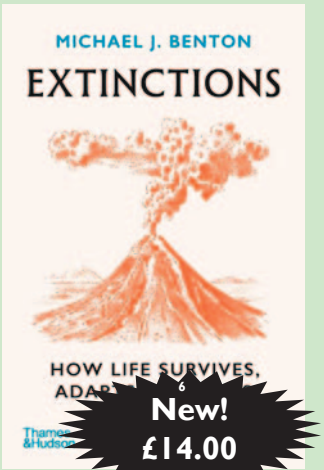


New! £38.00



Terrific! £50.00

New! £44.00



New! £14.00

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