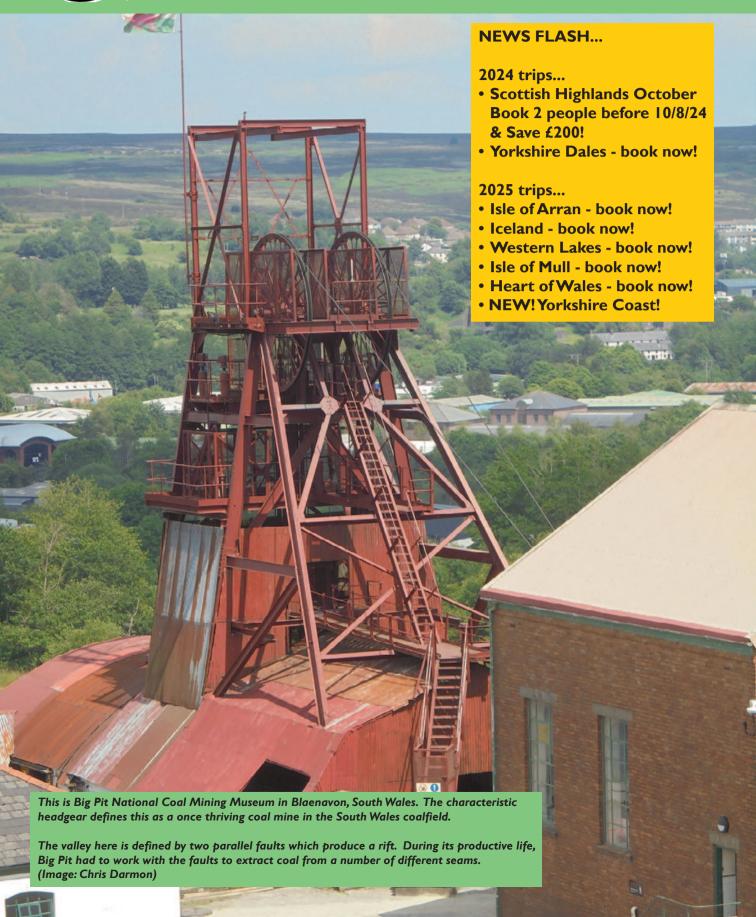


Down to Earth exera

Issue 140 August 2024



From the Editorial team...

Earlier this year we spent a period of time in the Gea Norvegica Geopark in Southern Norway, It's a lovely area that you should consider visiting if you haven't already. As part of our visit we went to the area of the Fen Volcano, where Precambrian Carbonatites outcrop in what was once a volcanic vent. Carbonate rich magmas are extremely rare, so this 580 million year old example has attracted great attention.

Over the past 300 years the area has had a rich and varied mining history. Red hematite bearing rock was mined for its iron content from 1657-1927 and this was followed by niobium ore being mined from 1953 to 1965. It then lay untouched for some years, but all that has changed, with it set to pay a major part on the world stage.

In recent times it has been identified as having the potential of being the largest deposit of rare earth minerals outside China and Chinese controlled deposits in Africa. A new company Rare Earths Norway, part of the Hustadlitt Group has been set up to prospect and eventually mine, these valuable minerals. So far, the estimate is 1.4-3.3 billion tonnes of neodymium and praseodmium at concentrations of 0.4-2.0%. Clearly, the method by which such potentially dangerous minerals are mined comes to the fore at a very early stage. Could this be the first mine to be operated entirely by robots?

Such thoughts bring us up against artificial intelligence (AI) and the role it might play in the wider geological context. One of the key areas where AI can, and indeed already is, playing a part is in exploration. Exploration is a data intensive process in which AI can analyse vast volumes of data quickly and potentially far more accurately than a human operator. There are huge implications also in the field of geological mapping. We can expect to hear far more about AI, including its role in the Fen Complex, much more in the future. Watch this space!

Chris Darmon & Colin Schofield The Down to Earth Editorial Team

See pages 7-10 for details of our exciting 2024/5 programme of residential field trips & Zoom talks!



Is the Flow Country about to be declared a World Heritage site by UNESCO?

Right up in the far north eastern part of Scotland lies some of our most remote and also environmentally most important landscape. It's probably the world's most important and largest area of blanket bog, covering 5,000 km². It supports a large and diverse ecosystem of plants and animals that are in desperate need of conservation and restoration.

Over recent years the area has been noted for its vast tracts of commercial forest that have attracted tax-friendly investment from the



Blanket bog in the Flow Country - a unique landscape (Image: RSPB)

likes of pop stars and celebrities. It's the clearance of these trees as they come to maturity that will allow the blanket bog environment to return.

As this issue goes to publication, it's expected that a meeting in India of UNESCO will make the announcement that the Flow Country has indeed been given World Heritage Status. The work of conservation and restoration can then begin in earnest.

Offshore wind - HM Government in major partnership with The Crown Estate...

During the recent General election, the Labour Party made a lot of it's intention of creating a publicly owned energy company, dubbed GB Energy. It would be created to "reduce the UK's over reliance on fossil fuels".

When challenged during the election campaign as to what exactly GB Energy would do, Ed Milliband, was less forthcoming. Now, with the announcement of a major partnership with monarch's Crown Estates Company, it becomes much clearer.

Down to Earth extra is designed & published by Geo Supplies Ltd., 49 Station Road, Chapeltown, Sheffield S35 2XE

Editor: Chris Darmon Assistant Editor: Colin Schofield

Tel: 0114 245 5746 • FAX: 0114 240 3405 Subscribe for FREE: downtoearth@geosupplies.co.uk

Material is © Geo Supplies Ltd. 2024
You are welcome to share DtoE extra with others in your group and reproduce items contained here, provided you acknowledge the source.



This could become a more familiar sight around the coast of England and Wales (Image: Crown Estat/Jason Hawkes)

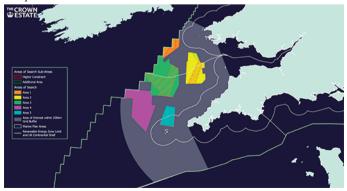
The Crown Estate is the owner of the majority of the seabed around our coasts which stretches out up to 12 nautical miles. In the deal, Crown Estates will lease some of that land on which vast wind farms can be built.

Ed Milliband, the Energy Security and Net Zero Secretary claimed investments in wind farms as well as other renewables such as solar energy is "going to lead to lower bills over the parliament". But the Conservative opposition maintains that GB Energy is "nothing but a gimmick that will end up costing families".

With the King, Charles III known to be a keen advocate of green energy, the Crown Estate already had a target of 20GW to 30GW of new offshore wind reaching the stage of seabed lease by 2030, now this will be greatly helped by GM Government.

GB Energy has £8.3bn of tax payer funding, now the government is seeking private investment of up to £60bn. Given that these are to be offshore developments, currently confined to England and Wales, involving Crown Estates land, they should attract less obstructions to rapid development.

However, this is still highly contentious with the Shadow Energy Secretary Claire Coutinho saying: "Labour have already been forced to admit that their flagship energy company won't generate any energy, and now we know it's a financial black hole - funnelling taxpayer's money into reducing risk for multi-million-pound energy companies".



A Crown Estate map from 2022, showing some of the potential areas for wind turbines off Southwest England and Wales. Most of these lie well out to sea.

Earlier, in response to the King's Speech outlining the government's programme for this session of parliament, the renewables sector had welcomed the announcement of GB Energy and also reforms to The Crown Estates. The Crown Estate Bill will allow them, in their role as seabed landlord and key player in developing wind power in the UK, the facility to borrow money.

GB Energy will have its headquarters in Scotland and with the £8.3bn of funding will seek to be a significant player in the energy market over the coming five years and beyond.

On the wider economic front, the government also hopes that this announcement will also stimulate the offshore wind industry and particularly the supply of wind turbines and blades. One company who's hoping for a boost is Hull's Siemens Gamesa, based at the Port of Hull on the east coast of England.

Opened in 2016, the company initially manufactured 75m blades and then later 81m blades. In 2021 Siemens invested £186 million in its Hull manufacturing plant and now produces what it terms 'next generation' blades. The latest announcement can only be seen as good news by Siemens and the rest of the supply industry.

Peak District rail line remains closed after four months as Network Rail reveals the true extent of the problem...

Over the past couple of years, we have regularly kept you up to date as our rail network tackles the problems associated with landslips caused by freak weather conditions. One such problem first revealed itself in May after a particularly severe storm affected the embankment between Chinley and New Mills on the route between Sheffield and Manchester. Luckily for passengers this isn't the only route as a later route crossed the valley on a different alignment.

As Network Rail engineers reveal in the following account, this isn't a problem that comes with an easy, or quick solution:

"Following emergency ground investigations, engineers confirmed that work is required to repair damage to the earth that supports the railway. Engineers are working 24/7 to stabilise the embankment in the Hague Bar area of New Mills until autumn. If the work is not carried out, there is a risk of 50,000 tonnes of earth falling from the railway into the River Goyt.



Inserting a length of pile at the Hague Bar site. (Image: Network Rail)

The team are drilling 160-metre-long pile foundations into the earth to

create an underground retaining wall between the railway and the river to stop the movement of the ground. Once this is complete, the team will need to rebuild the railway on top of the stabilised earth to allow trains to safely operate.

This will be carried out as quickly and efficiently as possible to minimise disruption to the community and to reopen the railway fully as soon as possible."

What is particularly challenging about this area is the thickness of post-glacial and glacial material, the so called 'drift'. Your Editor recounts a conversation with the late Dr Fred Broadhurst of the University of Manchester about this area. This is particularly thick drift, hence the need to drill 160-metre-long piles, Fred believed that this formed part of major meltwater route to the Irish Sea at the end of the last glaciation.

There's evidence that even the nineteenth century railway builders were aware of the problem and there have been other slips in the area in recent times, on both this and the alternative route.



The pile and wall solution in progress of being built at Hague Bar. (Image: Network Rail)

As for the time frame for completion of the current, works, Network Rail are only saying 'until the Autumn'. Current train service alterations are given until August 26th, but it will be a case of having to wait and see.

With the UK facing on-going weather anomalies, this is surely a problem that will be faced by Network Rail at other locations around the country. We wish them well and we'll continue to bring you the news when they do.

Yellowstone blast causes visitors to flee...

Yellowstone National Park in Cheyenne, Wyoming, attracts thousands of visitors every year to see the hydrothermal features. What they don't expect to see is a sudden explosion of steam and rock fragments that sends them running for their lives, but that's exactly what happened on July 23rd.



The scene as National Park Staff assess the damage to Biscuit Basin boardwalks after a hydrothermal explosion (Image: National Park Service)

According to *US News.com*, video posted online showed a couple of dozen people watching from a boardwalk as the eruption sprayed and grew in front of them. As water and debris began to fall, they ran to keep clear, some yelling "Back up!" and "Holy cow!" People then turned to watch the spectacle under a huge cloud of steam. No injuries were reported, but the Biscuit Basin area was closed for visitor safety. The eruption damaged a boardwalk that keeps people off Yellowstone's fragile and often dangerous geothermal areas.

Vlada March was on a tour in the basin when her guide said something unusual was happening. March started taking video. "We saw more steam coming up and within seconds it became this huge thing," said March, a California real estate agent who was with her mom, husband and their two kids. "It just exploded and became like a black cloud that covered the sun. I think our tour guide said 'Run,' and I started running and I started screaming at the kids, 'Run, run, run,' and I continued filming what I could," she said.

Sudden hydrothermal events like this one are not completely unknown in Yellowstone, but are rare. They don't seem to lead on to anything more sinister and usually short lived.



Down to Earth - in print...

If you've enjoyed reading this Down to Earth extra, you'll love our quarterly Down to Earth! It's a 32-page quality magazine in full colour that's packed with up to the minute geological news and articles. You can get your hands on this either in print or electronic formats. Why not request a FREE sample electronic copy of the current issue?

For 2024 why not treat yourself or a loved one to a gift subscription? Go to: www.geosupplies.co.uk and enter the online shop or ring us on 0114 245 5746.

Down to Earth is published quarterly. Subscribe now for 2024/5 for just £16.00 in the UK. We'll send you the next 6 issues, to the end of 2025 and back issues from 2023/4. For an additional £30.00 (UK only) we'll send you a parcel of back issues - around 50! Alternatively, take a 2023/4 e-subscription for £10.00. Additionally, all subscribers will get DtoE extra FREE each month.

HOW TO SUBSCRIBE - Go online at: www.geosupplies.co.uk • Tel. 0114 245 5746 and quote any major card • or send a cheque (payable to Geo Supplies Ltd.) to: 49 Station Road, Chapeltown, Sheffield S35 2XE

Extra August 2024





The very best of Icelandic geology

- Explore the north and east of Iceland for the best geology & scenery
- See Lake Myvatn and the area around Krafla volcano
- See colourful rhyolites in Borgarfjarðar Eystri
- See a superb collection of Icelandic minerals
- Coach transport with an experienced Icelandic guide
- Stay in some idyllic locations with good food and comfortable beds
- Option of an extra day visiting recent eruption sites in the Reykjanes
- Immerse yourself in the 'real Iceland'!

Everyone is invited to join us! The cost is £2595.00 per person sharing or £2995.00 single. BOOK NOW!

See the brochure & book online at www.geosupplies.co.uk Email downtoearth@geosupplies.co.uk or ring us on 0114 245 5746 Geo Supplies Ltd 49 Station Road, Chapeltown, Sheffield S35 2XE



The learning zone



For 2024, we are still able to accept additional people onto our trips to Fort William and the Yorkshire Dales in October.

Our 2025 programme is now complete and places are filling up fast. We have now added Scarborough on the Yorkshire Coast, Heart of Wales, Western Lake District, Mull and Ardnamurchan and our Peak District Summer School. South Devon completes the Autumn line up.

To view a brochure, go to our to website at: www.geosupplies.co.uk or Tel: 0114 245 5746

Remember that booking forms are only available direct from us:

Email: downtoearth@geosupplies.co.uk

- The Highlands of Scotland Fort William, October 4-14
- The Yorkshire Dales, October 21-26

2025

- Isle of Arran, March 30-April 6
- Troodos Mountains, Cyprus, April 24-May I
- NEW! Scarborough, Yorkshire Coast June 1-6
- Mull & Ardnamurchan, June 11-18
- Western Lake District, June 25-30
- Heart of Wales, July 9-16
- Peak District Summer School, August 9-16
- Iceland, North & East Fjords, September 1-10
- Torbay, South Devon, October 8-15

Early booking is advised, especially if you are looking for a single room.

Search online at www.geosupplies.co.uk or ring us on 0114 245 5746 Geo Supplies Ltd 49 Station Road, Chapeltown, Sheffield S35 2XE



The learning zone

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

Autumn 2024 - it's still not too late...

We can still accommodate a few more people on two trips this Autumn, both in October. Autumn in Scotland can be a real treat with the lovely colours of the season, combined with a warm hotel in the town of Fort William. We can also offer the Yorkshire Dales, closer to home and a great place for a 5-night break before Winter sets in.

Contact us NOW for a booking form!

Email: downtoearth@geosupplies.co.uk or ring: 0114 245 5746

The Fort William area (10-nights) - October 4-14 £1595

This is one of the undoubted highlights of the entire year. We've gone to the max to bring you a comprehensive 10-night itinerary based in this iconic Highland locality, at the comfortable Croit Anna Hotel.



A new angle on Glencoe (Image: Scottish Geology Trust)

We'll be taking in the local geology of Glen Nevis, the volcanics of Glencoe the slates of Ballachulish and also more distant places such as Mallaig and Ardnamurchan. The trip will also include an excursion



Our hotel, Croit Anna, on the outskirts of Fort William.

by boat on Loch Linnhe and a train trip to Mallaig which includes the famous Glenfinnan viaduct. This trip offers excellent value for 10-nights. Don't let the Autumn date of this trip put you off, at this time Scotland is at its very best and the midges have gone for the season! See the brochure online - get the booking form from us.

The Yorkshire Dales (5-nights) - October 21-26 £895

Amazingly, we've never managed to base one of our trips in the Yorkshire Dales National Park. We had planned this trip for 2020, but it never happened due to Covid. Our base for the week is the small village of Gargrave, just to the west of Skipton. From here we'll take in some of the highlights of the National Park, including the ancient rocks of Ingleton and Horton in Ribblesdale, the magnificent Carboniferous limestone with its show caves and the younger rocks of the Yoredales and the Coal Measures. It's the perfect way to end our field season.

The brochure for this trip is now available, booking form from us!



The unconformity at Helwith Bridge, near Horton in Ribblesdale. (Image: Upper Wharfedale Field Society)



Don't worry, we don't bite!

All our educational classes and courses are friendly, informal and open to all.

Come and join us!

Welcome to our real world?

£1395



The 2025 programme...

We are delighted to tell you that we have now completed our programme of residential field trips for 2025. The public offering of nine trips is less than in previous years because we have two private trips for Americans in the frame. We already have strong bookings, so you are strongly advised to get in as soon as you can.

To make a booking email us at:

downtoearth@geosupplies.co.uk or ring us on: 0114 245 5746 Whilst the brochures are, or will be, available on our website, booking forms are only available from us. You can then arrange to pay the deposit and we'll send you the booking form.

Isle of Arran, March 30-April 6

Welcome to the Isle of Arran that is the original geologists' paradise. James Hutton was probably the first person to study the geology of Arran in 1786 when he described an unconformity at Lochranza. Since then, thousands have trod the paths to examine the rocks! Arran is currently going down the path to become a full geopark.



Arran on a beautiful day showing the landscape and a magnificent raised beach. (Image: Scottish Geology Trust)

This trip is based at the very comfortable (and warm) Best Western Kinloch Hotel at Blackwaterfoot on the Island's quiet west coast. We spend a leisurely week examining most parts of Arran, making full use of unlimited travel on the local buses - the terminus of the main route is right outside our hotel.

At this time there are vacancies for single and twin/double rooms.

Troodos Mountains, Cyprus April 24-May 1 £1795

This trip is currently full, however we are able to accept a few people onto a waiting list. When we have confirmation of the transport being used we may be able to accept a people from the waiting list. The brochure is available on our website - take a look before contacting us.

NEW! Scarborough, on the Yorkshire Coast June 1-6 £895

Amazingly, we have never based a trip at Scarborough the 'queen' of the Yorkshire Coast, for the simple reason that we've never found suitable accommodation! Based at the comfortable Cumberland Hotel, we'll spend 5-nights in and around the town, taking in field



The Cumberland Hotel in Scarborough. (Image: Leisureplex)

visits to places like Filey, Forge Valley, Robin Hoods Bay and Whitby to mention just a few. This will allow us to examine rocks from the Jurassic and also the Cretaceous with lots of fossils and sedimentary structures that give us clues to ancient environments.

At the time of writing we have single and double rooms available.

NEW! Isle of Mull & Ardnamurchan June 11-18 £1695

We have managed to secure reasonably priced accommodation at the Park Lodge Hotel in Tobermory and this trip replaces the one previously advertised to Raasay.



Near the lighthouse at Ardnamurchan Point

The Isle of Mull and Ardnamurchan will put two Tertiary igneous centres at our disposal with that on Mull being one of the most imposing, whilst that on Ardnamurchan is the most accessible. We also hope to be able to take in a visit to the tiny Isle of Staffa with its famous basalt columns, depending on the weather. Another highlight will be a visit to the Island of Iona with its Precambrian rocks.

With at least one full day on Ardnamurchan we'll be able to take in the fossiliferous Jurassic sediments as well as the basement metamorphics from the Moinian and the Tertiary igneous rocks.

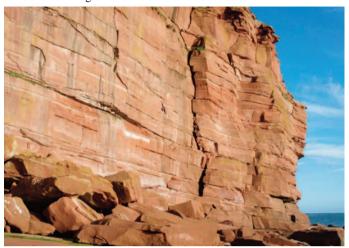
At the time of writing we have only twin/double rooms available on this trip.

Western Lake District, June 25-30

£895

£1395

The Lake District is renowned for its superb landscape and scenery, but access to the central part is limited and accommodation is very expensive. We have previously stayed at Summergrove Halls in Whitehaven, but this is no longer available to us. Accordingly we've turned to Workington and the comfortable modern Premier Inn.



Amazing cliffs at St Bees. (Image: St Bees community)

From Workington we'll be able to access all of the Western Lakes, with trips to see places like Eskdale, Lake Windermere, the iron mines of West Cumbria and St Bees Head.

This trip is filling up fast!

Summer School Peak District, August 9-16

For the first time in the 7-year history of our Summer School week's we're actually returning to a place that we've visited before. Cliff College in the Peak District of Derbyshire is a well known Methodist theological college. It provides excellent ensuite bedrooms and lovely home cooked food, and makes for an ideal summer school base.



The beautiful grounds of Cliff College (Image: Cliff College)

We'll be sampling lots of the excellent local geology and giving you those added summer school bonuses of evening talks and special visits to places of cultural and historic interest as well as geology. *The brochure is just out - book now!*

Iceland - the North & East Fjords, September 1-11 £2595

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!



The Eastern Fjords are beautiful in any season! (Image: Chris Darmon)

We fly back from Egilstaddir to Reykjavik and then to Keflavik where we started. 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 lavas, which will still be hot!

This trip is already more than half full!

NEW! The South Devon Riviera, Torbay, October 8-15 £1295



Distinctive Red Permian rocks of South Devon

The South Devon Riviera coast has been a holiday destination for more than 150 years and we will be staying in a lovely small hotel in Paignton. From here we will be exploring the local area that lies within the UNESCO world geopark. This is an area of great coastal scenery, with lots of Devonian sediments, plus some volcanics. As the geology is best seen from the sea, we'll ensure that we have at least one boat trip out into Torbay to get up close and personal with the cliffs and their fabulous structures. We also hope to take a trip on the Paington and Kingswear steam railway and combine it with another boat trip on the River Dart ot Totnes.

The brochure for this trip is just out so there are plenty of vacancies for all!

For further information or to book, email: downtoearth@geosupplies.co.uk or ring us on: 0114 245 5746



Distance Learning

Learning with us is FUN...

We've been offering online and distance learning since before Covid and over that time hundreds of people have taken part in our learning programmes from the UK and around the world.

All our learning programmes are created and delivered by our in house team of Chris Darmon and Colin Schofield. Both are experienced teachers of distance learning over many years.

We deliver courses that are enjoyable and stimulating whilst at the same time being informative and educational. No one is required to carry out any sort of assessment and there's no entry requirements or formalities.

Just sign up and go!

What's on offer this Autumn and Winter?

The Geology of the British Isles

This was one of the first distance learning courses that we devised. Over the years, many people have embarked on this geological journey since then, but now, for only the second time, we're bringing it to you live!

Chris is looking forward to sharing the British Isles' journey through time in 13 hour long Zoom sessions. Each session will be brought alive through the use of YouTube videos and photographs, augmented by Chris's stories and Colin's material on Moodle. We want this to be the best course ever, aided and abetted by your own participation.

Course dates: Starts Monday November 11 - December 16 and then restarts January 13 for a further 7 weeks.

Cost: Thirteen hour-long Zoom sessions with electronic background papers £80.00 for one person or £95.00 for 2-people studying together. Printed background papers cost an additional £25.00. Zoom sessions on Mondays at 2.00 and 7.00 pm (you choose)



The Severn Bridge spans the Bristol Channel - but what's the geological story? (Image: National Highways)

NEW! Time Traveller's Britain

Under this title we've explored more than 30 part of the British Isles and examined the work of some of our geological pioneers, but for this short course, we're bringing you six more brand new episodes in the series!



Rock & Spindle volcanic neck, St Andrews

Come with us as we explore the Mendips, Islay and Jura, the Kingdom of Fife, Snowdonia (Eryri), Shropshire and the Bristol Channel.

At the heart of each session is an hour long live Zoom presentation with electronic background material. You'll hear from Chris and Colin some of their personal reflections on the areas concerned along with the most up to date interpretations of the geology.

Course dates: Starts Thursday November 14 - December 19 Cost: Six hour-long Zoom sessions with electronic background papers £40.00 for one person or £50.00 for 2-people studying together. Printed background papers cost an additional £10.00. Zoom sessions on Thursdays at 2.00 and 7.00 pm (you choose)

The Wednesday club...

Over the past couple of years, we've been running a series of one-off sessions covering random geological topics. These were branded as 'Wednesdays at 7'.

Whilst these have been very popular, several of you urged us to also offer the same session in the afternoon. Well, we've listened and now you can enjoy the same content in the afternoon or the evening!

November 13	Alabaster - occurrence and uses
November 20	Graptolites - a geological enigma
November 27	Potash & Polyhalite mining in the UK
December 4	Metamorphic rocks in a nutshell!
December 11	The Ediacarans - the world's first fossils?
December 18	Gemstones of the British Isles

Cost: Take all six sessions for £40.00 or book them individually for £10.00 each.

Timings: Wednesdays at 2.00 or 7.00pm - your choice.

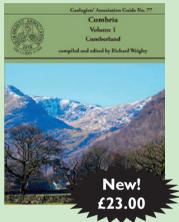
To register interest, email us at: downtoearth@geosupplies.co.uk or ring us on: 0114 245 5746

You can enrol via our online shop at: www.geosupplies.co.uk or ring us on: 0114 245 5746



Featured books for August 2024

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 2024 provided that stocks are available. Please note, all prices include UK postage.







Buy both of the above for £10.00





Original!

