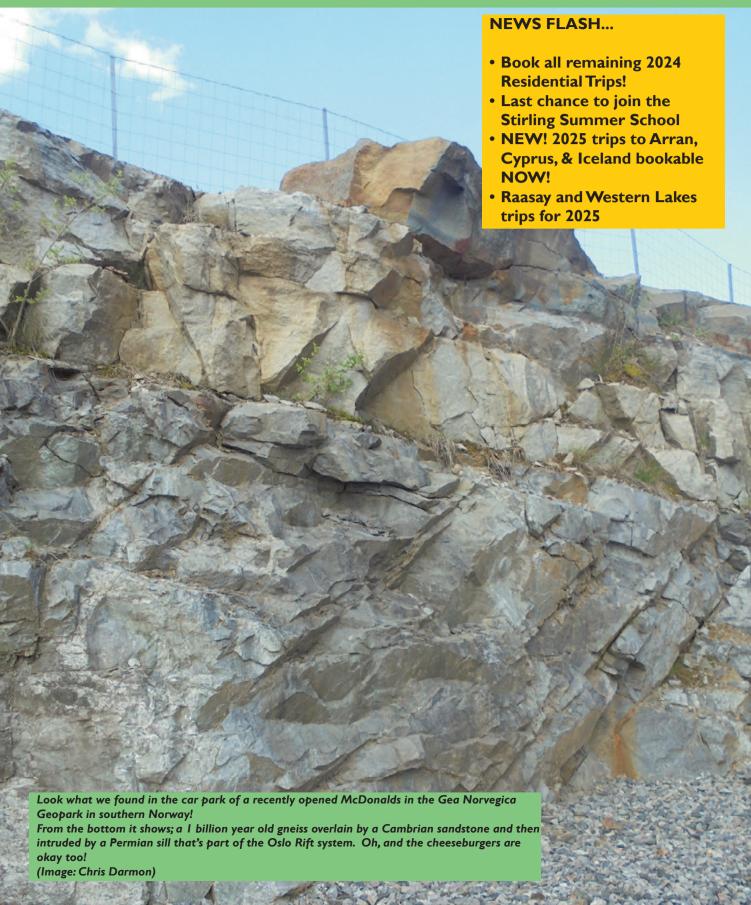


# Down to Earth exera

Issue 137 May 2024



#### A personal note from the Editor...

Something of a change for this issue only as I reflect on 50 years of involvement in geology since my graduation from the University of Hull in 1974. Over that period I've seen so many changes and not all of them have been for the good, but happily, despite the ups and downs for our subject, I'm still here and hopefully I've still got a few more miles in the tank!

Back in the 1970s geology was on something of a high. The general public had been introduced to plate tectonics, the space race was gripping us all and coal mining and the exploration for offshore oil and gas were gathering momentum and geology was seen as an important part of many of our lives. It had a place in society and was seen as relevant to our lives.

Back at the University of Hull, I was one of about 30 undergraduates in my year, of whom just three were females. There were no overseas students, if my memory serves me right. Back then, more than half of geology graduates either found jobs in geology, or went on to study for an MSc or a PhD. I set my heart on joining British Coal as a geologist, but was deemed ineligible for underground work on eye sight grounds. Accordingly, I made a career choice to enter teaching and enrolled for a PGCE at Keele University and studied under the charismatic David Thompson, trainer of geology teachers for a generation.

Fast forward to 2024, I'm still delivering geological education in the field and via frequent Zoom sessions. I'm pleased to say that there are now many more women who want to study geology. We also have a smattering of interest from people other than white British, but we still don't mirror society in general. My biggest regret? That I have not been able to stem the decline in geology teaching across our schools. I'll be expanding my thoughts in the May issue of our sister publication *Down to Earth*.

Chris Darmon Down to Earth Editor

## See pages 6-10 for details of our exciting 2024 programme of residential field trips!



#### The latest news of volcanic activity in Iceland...

It's getting hard to keep track of the various eruptions that have been going on in the Svartsengi area of the Reykjanes Peninsula, the latest of which began about a month ago.

A quick check on the internet as of May 9th, the famous Blue Lagoon was open with the website carrying the following information:

"Over the past months, we have been reminded of the powers of nature and how they inevitably influence us all. During this time of seismic activity, we have had to temporarily close our operations but have remained in close contact with Icelandic authorities and acted in accordance with set precautions and measures in the area.

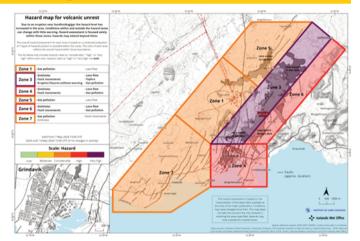
For more details and the latest updates on the situation, please visit the Icelandic Meteorological Office, The National Civil Protection Agency, Air Quality in Iceland, or SafeTravel."

This comes little more than a month since a worker at the Blue Lagoon was hospitalised due to an escape of toxic gas from the ground.

#### The Icelandic Met Office said this on its website on May 7th:

"The eruption at the Sundhnúk crater row continues. Lava continues to flow a short distance from the active vent, but activity within this crater is decreasing. Over the past week, little to no change has been observed in the southern part of the lava field near the defensive barriers east of Grindavík.

Magma accumulation and land rise continue in Svartsengi. The rate



Hazard map for the affected area around Grindavik and Svartsengi. The colours show the hazard levels. (Image: Iceland Met Office)

has remained consistent in recent weeks (see figure below). These measurements indicate that pressure continues to rise in the magma chamber. Therefore, a new dike intrusion from the magma chamber beneath Svartsengi towards the Sundhnúk crater row remains possible.

Seismic activity has increased steadily in and around the eruption area

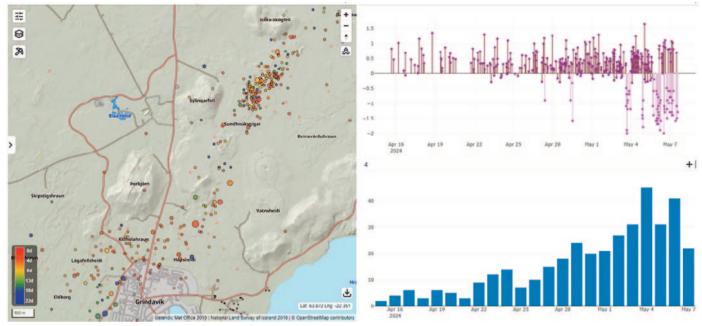
Down to Earth extra is designed & published by Geo Supplies Ltd., 49 Station Road, Chapeltown, Sheffield S35 2XE

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The locations of earthquakes since April 15th (left), along with automatic magnitudes (top right) and the number of earthquakes per day. (bottom right). (Image: Iceland Met Office)

over the past week. Most of the earthquakes, which are generally smaller than magnitude 1, are located north of the current eruption site, between Sundhnúk and Stóra Skógfell, south of Þorbjarnar in the large valley near Grindavík, and between Grindavík and the current eruption site. This gradual increase in seismic activity is likely a sign that stress is being released around the eruption site on the Sundhnúk crater row due to increased pressure in the magma chamber beneath Svartsengi.

These are the most likely two scenarios regarding the continuation of activity at the Sundhnúkur crater row:

- 1 New eruptive fissures could open in the area between Stóra-Skógafell and Hagafell, and/or the current eruption site could expand due to a sudden increase in lava flow, which may be comparable to the initial phases of the last volcanic eruption in the area. This could occur with very little to no warning.
- 2 It is also possible that the flow of magma from the magma chamber beneath Svartsengi into the active vent at the Sundhnúkur crater row may increase steadily until there is equilibrium between the inflow of magma into the chamber and the outflow onto the surface.

Signs of a new volcanic eruption would likely include a sudden increase in earthquakes in and around the eruption area, an acceleration in deformation, and pressure changes in nearby boreholes. It is important to understand that warning times could be nonexistent or very short, possibly less than half an hour.

The hazard assessment remains unchanged since the last update. In the past week, the risk of possible active lava flows in area 4 (Grindavík) has increased from considerable to high, based on the scenarios now considered most likely.

A check on May 10th revealed that there was no activity at the main eruption site at Sundhnúkagígar crater, although it's pretty clear that this on/off activity could restart at any time. Iceland Today said that the Icelandic Met Office had just issued the following statement regarding the eruption:

"Experts from the Department of Civil Protection and Emergency Management flew drones over the eruption site at Mt Sundhnúkur last night and there was no activity in the crater. Volcanic eruption had been decreasing yesterday and no lava splatter was visible from the crater last night. This volcanic eruption, which lasted for almost 54 days, has therefore ended," the announcement reads.



The eruption at Sundhnúkagígar crater row just before it stopped (Image: Hörður Kristleifs mbl.is)

The Met Office also makes it clear that this isn't likely to be the last word on the matter, with magma accumulation under Svartsengi ongoing.

"However, magma accumulation continues under Svartsengi and probability calculations assume that approximately 13 million cubic metres of magma have been added to the magma chamber since the eruption began on March 16. It must therefore be considered probable that magma will run back from the magma chamber under Svartsengi to the Sundhnúkagígar crater row before long."

The Met Office will continue to monitor the situation closely at the eruption site, and we at Down to Earth will continue to bring you the latest news as and when anything happens.

### Chris Darmon is awarded the Halstead Medal by the Geologists' Association...

**Down to Earth** editor Chris Darmon was recently invited to attend the AGM of the Geologists' Association in London to be presented with the Halstead Medal for 2024.

The award is made in memory of Professor Beverly Halstead of Reading University who was tragically killed in a road accident in 1991. He was a palaeontologist and much loved TV personality who promoted geology to the general public.



Chris receives the Halstead Medal from GA President Graham Hickman (Image: Arthur Boyling)

The regulations for this award state that it should be given "for work of outstanding merit, deemed to further the objectives of the Association and to promote Geology".

The nomination made in his name clearly states that: "Chris has managed to instil a love of geology in many many people from around the country with his enthusiasm and patient methods of teaching and should be recognised in some way for his contribution to the subject."

The medal was presented by the GA President Dr Graham Hickman in the lecture theatre of The Geological Society at Burlington House in Piccadilly.

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An unusual present idea...

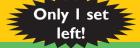
### 'The Cream of the Crop 2023'

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 2023'.

The set comprises I2 carefully chosen igneous rocks from around the British Isles. They include The Foxdale granite from the Isle of Man, the Lundy Granite, Diorite from Guernsey, the Ailsa Craig Riebekite and Cumbraeite from Great Cumbrae. Each set comes boxed with notes and costs £49.95 including postage.

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



### What really triggered the massive Tongan volcanic eruption in 2022?

First, we vastly underestimated the amount of material that 'blew away' in the massive volcanic eruption at Tonga's Hunga Tonga-Hunga Ha'apai, in 2022, now it seems we got the cause wrong too.

The latest research published in the Journal of Volcanology and Geothermal Research points a colossal buildup of gas beneath a seal inside the volcano that suddenly broke on Jan. 15 after a series of smaller eruptions between Dec. 19, 2021, and Jan. 13, 2022.



An aerial view of the submarine volcano after the eruption in January 2022. (Image: Courtesy of Live Science)

This seal may have formed through a reaction between volcanic rocks and gas rising from the depths of the volcano. "It is now well established that fast reactions occur between the gases sulphur dioxide and hydrogen chloride contents of magmatic gases to produce minerals including anhydrite, quartz and sulfides as they expand from source to surface," the researchers wrote in the study. "Their formation leads to a choking of flow paths and potentially sealing of the gas flux through the volcano."

Gas trapped inside the volcano likely accumulated over several months and then reached a "critical point" when the pressure finally ruptured the seal and triggered an explosion, they wrote. The energy amassed underground was so great that it propelled an ash cloud 58 kilometers into the sky and blew out a crater 850 metres deep and 2 to 3 km wide.

The Tonga eruption — which may have been even more powerful than the 1883 Krakatoa eruption — fed itself by exploding away everdeeper layers of rock and releasing ever-higher-pressure gas, entering a runaway, "supercritical" state, the researchers noted in the study. The eruption eventually subsided as the gas reservoir emptied and seawater flooded into the gaping crater.

This item is largely based on material published by Live Science to whom we are grateful.

### A good geoconservation story from the Peak District of Derbyshire...

I recently led a walk for a group of mainly young people from Sheffield to the Wye Valley around Millersdale. As part of the trip we took a walk along the Monsal Trail, a walking and cycling route that follows the course of the former Midland Railway main line from London to Manchester. The line passes high above the River Wye on a series of viaducts and embankments.

Most of the way the geology comprises Lower Carboniferous limestones, sometimes showing excellent colonial and solitary corals, but at one point an outcrop of the Upper Millersdale lava can be seen. Despite being an SSSI with an explanatory board, this site has on recent occasions been in rather poor condition.

Imagine then Chris's delight at seeing it in such pristine condition as this image shows. For the first time in more than a hindered years, it's now possible to see what lies behind a portion of stone wall. The lava with blocks of limestone can clearly be seen.



Lava flow in Millersdale. (Image: Daniel Pallordet)



### 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 £25.00 (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.

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Everyone is invited to join us for our annual Summer School. The cost is £1295.00 per person sharing or £1450.00 single (no twin rooms). THIS TRIP CAN BE BOOKED ONLINE!

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### The learning zone



Since the last issue we have filled the 2025 Troodos trip. We are taking bookings for Arran and Iceland. We are working on trips to Raasay & Skye plus another to the Western Lake District, both will be confirmed shortly.

For 2024, we do have limited availability on the trips shown opposite. To see a brochure visit our website at: www.geosupplies.co.uk or Tel: 0114 245 5746

Aside from the Summer School that can be booked via our website, for all other trips, booking forms are only available direct from us:

Email: downtoearth@geosupplies.co.uk

**CONTACT US NOW!** 

- Geology of South Wales, June 23-30
- The Welsh Borderland, July 7-12
- Summer School Stirling, August 10-17
- Llyn Peninsula, Wales, August 31-Sept 5
- 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
- Isles of Raasay & Skye May/June
- Western Lake District June
- Iceland, North & East Fjords, September 1-10

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

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### 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

#### The 2024 programme...

As the year progresses, we are seeing bookings continue to come in for trips later in the year. We can still accommodate additional people on the following trips: The Gower area of South Wales, the Welsh Borderland, Summer School. Stirling (including single rooms), Llyn Peninsula and the Yorkshire Dales.

Take our advice and make your bookings NOW! Aside from the Summer School you'll need to contact us for a booking form.

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

The Gower area of South Wales (7-nights) - June 23-30 £1195 This is an exciting new area for us with excellent geology covering mainly the Devonian and Carboniferous with amazing structures and fossils. We'll be going down the Big Pit coalmine and hopefully seeing some reptilian footprints! This is a great area that we will be covering for the first time.

Brochure available online - booking form from us. We can accommodate more people in twin and double rooms.



The Seabank Hotel - our comfortable base in Porthcawl, from where we can access all our field localities.

#### The Welsh Borderland (5-nights) - July 7-12 £895

The English county of Shropshire and the adjacent parts of Wales provide us with some of the most varied geology in the entire UK. We will be sampling rocks from the Precambrian right through to the Triassic with just about everything in between! There will be igneous plutonic and volcanic rocks, sediments galore and maybe even the odd metamorphic rock! There are fossils and minerals too - indeed something for everybody.

If you've never been on a geological field trip before then this is definitely one for you, as well as for the seasoned attender! Based at a comfortable guesthouse in the historic town of Bridgnorth, we'll be travelling around the area, including a trip on the Severn Valley railway.

Brochure online - get the booking form from us. This trip is nearing being fully booked.



Permian rocks at Bridgnorth (Image: Wikipedia)

#### Summer School, Stirling (7-nights) - August 10-17 £1295

This will be the first time that we have taken our famous Summer School north of the border to Scotland. What better place could we have chosen than Stirling with its highly rated university set in a historic town with an ancient castle sat on top of a massive sill? With all the usual elements that go together to make a great Summer School experience we'll bring you great geology with trips and study sessions combined with an enjoyable social experience. Accommodation is in en-suite single and shared rooms in modern student flats.

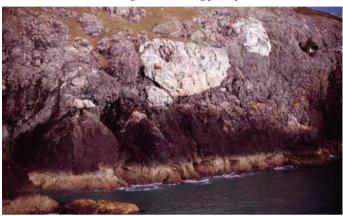


Onion skin weathering of dolerite in Stirling (Image: Open University Geological Society)

#### The Llyn Peninsula (5-nights) - August 31-September 5 £995

The Llyn Peninsula of North Wales is a very special place, where Welsh is the first language of most of its inhabitants and we enjoy local hospitality at its very best at the Nanhoran Hotel in Nefyn. Some of the geology is similar to that seen on Anglesey, but with lots of added extras! We see elements of an ophiolite complex, some excellent Cambrian sediments along with rare intrusives such as diorites. A highlight of this trip is a steam train ride on the Welsh Highland railway that takes in some of the magnificent scenery of Snowdonia, viewed at a slow pace from the comfort of your train seat. See the scenery of North Wales from a wholly different perspective.

#### See the brochure online - get the booking form from us.



The Llyn Mélange with its amazing blocks. (Image: Geology Wales)

#### 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 by boat on Loch Linnhe and a train trip to Mallaig which includes the famous Glenfinnan viaduct. This trip offers excellent value at 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 fabulous scenery of the Lochaber Geopark

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



The magnificent Malham Cove in the Yorkshire Dales

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)

If you would like some help or advice before making a booking, we'd be delighted to talk with you - either pick up the phone or email us.

All prices quoted above are per person in a shared room.

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

#### The 2025 programme...

We are now taking bookings for the first tranche of trips in 2025. The programme will be slightly shorter than in previous years because we have two trips already booked in for American guests.

As usual, we strongly advise early booking, especially if you are seeking a single room.

Whilst the brochures are, or will be, available on our website, booking forms are only available from us.

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

You can then arrange to pay the deposit and we'll send you the booking form.

#### Isle of Arran, March 30-April 6 £1395

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 £179

We released this trip some three weeks ago and have been amazed by the response. We have 30 people booked and this trip is unfortunately 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 few more people.

The brochure is available on our website - take a look before contacting us.

#### Isles of Raasay & Skye, May/June

I first visited Raasay more than 40 years ago. In those days there was only a tiny guest house and simple Youth Hostel. Whilst all that has changed and we now have the beautifully converted Raasay House, the fabulous geology remains.



Jurassic sediments topped by a Palaeogene basalt - this is Raasay's east coast.

In an island that's little more than eleven miles north to south and four miles east to west there's a wealth of geology. There's ancient Lewisian Gneiss, Torridonian Sandstone, Mesozoic sediments with fossils from the Triassic and Jurassic and lots of Palaeogene igneous rocks. We'll also be spending at least one day exploring the rocks of nearby Skye.

We are currently finalising dates and costing for this trip.

#### Western Lake District, June/July

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 Premier Inn.

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

We are currently finalising dates and costings for this trip.

#### 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 se did see the Northern Lights in all their glory!

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 see have a day looking at the most recent volcanic activity on the Reykjanes peninsula.

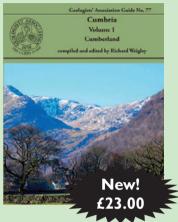
This trip is open for bookings!

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



### **Featured books** for May & June 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 June 2024 provided that stocks are available. Please note, all prices include UK postage.







Buy both of the above for £10.00





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