



# Down to Earth *extra*

Issue 80 August 2019

## SPOTLIGHT

- 2020 Residential Field Trips - the latest information
- Last places on Autumn 2019 trips
- Join us on a day trip - soon!
- Autumn face-to-face and distance learning courses

Columns on the south side of the island of Ailsa Craig in the Firth of Clyde. These cliffs of microgranite are some 300 metres high. The rock contains the blue mineral Riebeckite and the rock is prized for making curling stones. (Photo: Chris Darmon)

## From the Editorial team...

The trouble with being a field geologist is that you notice things happening around you. You can't help it, it's the way your mind has been trained and right now I'm noticing a lot. For me, it's not just the individual elements, such as the extremes of weather or the changes in the populations of birds and insects, it's some of the combinations which are working together to bring even larger potential changes.

At home in the garden, I've seen the almost complete demise of birds like the sparrow and blackbird and increases in the magpie and wood pigeon. At the same time, the yellow hammer, once rare, is now quite common too. There don't seem to be anywhere near the number of insects that there were a decade ago and this is bound to affect the flowers.

We shouldn't be surprised therefore to hear that, for many experts, we are already into what can only be described as a potential mass extinction event. We may be seeing whole ecosystems begin to fall over. We hear that the Great Barrier Reef is dying due to rises in sea water temperatures and increasing acidification. Meanwhile the march of global temperature rises seems to be accelerating with every new piece of research. Loss of polar ice on the one hand and vast swathes of forest on the other is devastating news for our planet.

Despite all of the scientific research, the world's politicians aren't listening. All the Earth scientists can say is that it has all happened before and there is life beyond a mass extinction or global warming, The bad news is that it may see us off too!

Meanwhile here in the UK all of our focus and effort is going into exiting the European Union by October 31st, no contest really!

*Chris Darmon & Colin Schofield*

*The Down to Earth extra Editorial team*

## Adult classes in Derbyshire, Sheffield and Carlisle this Autumn



### news update

#### Flash floods wreak havoc in parts of England & Wales...

As this issue is being finalised we are learning of flash flooding across swathes of England and Wales. This time, it's the turn of parts of the North and Northwest of England and North Wales that has taken the brunt.

In many places a month's worth of rain has fallen in 48 hours or less. In one part of the Yorkshire Dales 50 mm of rain fell in just 2 hours. The results have been the loss of at least one bridge, damage to roads and railways and flooding in many homes and communities.



*This bridge, near Grinton in the Yorkshire Dales, was washed away*

Whilst local and regional planning is now much better and the emergency services do everything that they can to alleviate the problems, there really is nothing that can be done to prevent such damage. Put simply, the water has to go somewhere.

What we must ensure is that there's no more development allowed to take place on flood plains. Improvement to water retention measures in upland areas can also lay apart and seemed to have helped prevent the worst excesses of flooding in the Calder Valley of Yorkshire this time around.

#### New BGS Director announced...



Karen Hanghoj has been named as the new Director of the British Geological Survey (BGS) in succession to Professor John Ludden. Karen will join BGS in October from EIT Raw Materials, a

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knowledge and innovation community supported by the European Institute of Innovation and Technology.

A Danish national, she has previously worked for the Geological Survey of Denmark and Greenland, as an academic researcher and in business.

Speaking about the appointment, Sir Keith O’Nions, Chair of the Board of BGS said: “I am delighted to welcome Karen as the next Director of the British Geological Survey. She will bring fresh challenge and insight that I am sure will push the BGS to further develop its role as a world-class survey. Karen, I am sure, will ensure we remain at the forefront of new ways of working for the benefit of government, business and the wider public.”

Meanwhile Karen said: “I am honoured to be taking up the role of the Director of the BGS. I look forward to joining such a world-renowned organisation and to leading it into its next stage. The services BGS provides are and will continue to be central to all our lives in the UK and globally, and I want to build on the depth of skill, knowledge and innovation at BGS to ensure that we continue to deliver world class research, data and advice in the future.”

Dr Tracy Shimmield, BGS Lyell Centre Director, will act as interim Director from 1 September to 13 October when Dr Hanghøj takes up her position.

### **Sadly, the ‘Geohut’ at Alstonfield in Derbyshire has now closed...**

Visitors to the Peak District will be sad to learn that the ‘Geohut’ outside the home of Albert Benghiat has now closed, following Albert leaving the house and moving to Shropshire. Over the years, thousands of people have dropped in see the specimens and find out more about the geology.

In Albert’s own words: “The Geohut idea was to demonstrate the geology of the Peak District by showcasing the variety of rocks and minerals found within the small area defined by the BGS Buxton Sheet, with representative rock samples and fossils for anyone to



*The familiar Geohut in the Peak District village of Alstonfield that has now closed down.*

handle and inspect. There was also a 3D relief model of the Buxton Sheet, mapping the geology onto the topography. It was opened in

### **Guided geology walks AUG 2019 Lake District Led by Stephen Mott M.Sc., B.Sc., PGCE**

Fire & Ice, rocks and glacial history of Borrowdale (Keswick)  
August 23, 26

Mind the [time] gap! Shap. Two-part day excursion – unconformities, fossils and intrusions - August 25

Close up and personal - An in-depth look at the Borrowdale Volcanic Group  
August 2, 5

All walks are full days and cost £30 per person or £100 for four adults.  
Accompanied children under 18 FREE.

#### **FURTHER DETAILS & BOOKINGS:**

EMAIL: [stephen@mott.me.uk](mailto:stephen@mott.me.uk) MOBILE: 079 309 70579 Booking closes at 5pm the previous day when Stephen will contact you with final arrangements. Mott on the landscape: <https://www.mott.me.uk>



## **Show Dates**

August 3 & 4 Rock, Gem ‘n’ Bead Show  
**Burgess Hall, St Ives, Cambs.**

August 10 & 11 Rock, Gem ‘n’ Bead Show  
**Royal Welsh Showground, Builth Wells, Powys**

August 17 & 18 Rock, Gem ‘n’ Bead Show  
**Pavilions of Harrogate, North Yorkshire**

**All shows are indoors with refreshments & ample free parking**

**All shows are open: 10am - 5pm Saturday  
10am - 4pm Sunday**

**Admission (one entrance fee covers the whole weekend):  
Kempton Park: adults £5.50, seniors £3.00  
All other shows: adults £4.50, seniors £2.00  
All shows: children 8-16 £1.00, under 8's free**

**Rock and Gem Ltd., 27 Common Hill, Steeple Ashton,  
BA14 6EE Tel: 01380 871835 • <http://www.rockngem.co.uk>**

September 7 & 8 Rock, Gem ‘n’ Bead Show  
**Ferneham Hall, Fafreham, Hampshire**

September 21 & 22 Rock, Gem ‘n’ Bead Show  
**Newark Showground, Nottinghamshire**

September 28 & 29 Rock, Gem ‘n’ Bead Show  
**Lyndhurst Community Hall, Hampshire**

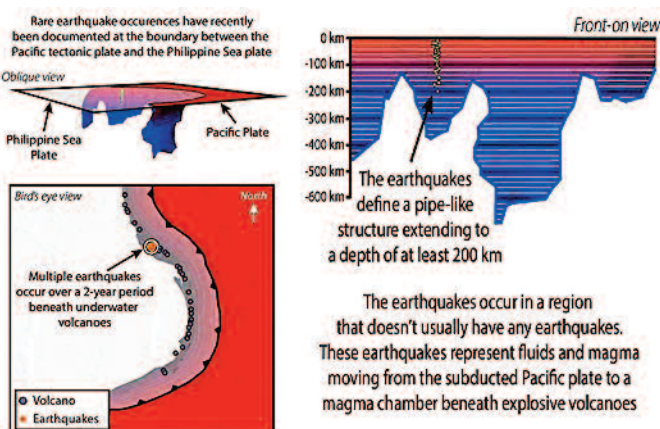
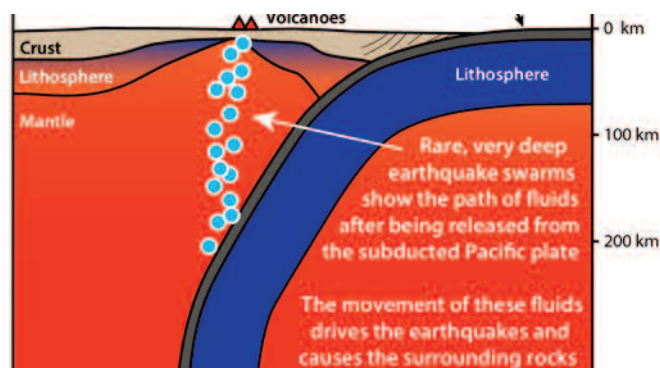
2009 and we have 840 signatures in the visitors book - many of these were on behalf of couples or groups and we know that most visitors do not sign the visitors book - so my estimate is that we must have had at least 3-4000 visitors over the years. The visitors book also provides an interesting snapshot of who comes walking in the Peak District - although most of the visitors are from around the Midlands, we have had quite a few from Europe and even from Singapore, USA, Canada and New Zealand."

**Down to Earth** thanks Albert for his tremendous efforts in promoting geology in the Peak District and wishes him well in his new home. However we know that he hasn't finished his work in the area, as he's working with Martin Whiteley on a new long distance geowalk around the Peak District that should be published next Spring.

### Earth's deepest earthquakes shed new light on plate tectonics mechanisms...

Researches at the University of Wollongong, New South Wales, Australia have discovered an amazing earthquake swarm some 200 km down, under a plate subduction zone.

By plotting each earthquake swarm on a three-dimensional map, the researchers found the earthquakes defined a pipe-like structure through which the molten rock travelled, rising from a sinking tectonic plate at depths of around 200km to a magma chamber underneath a volcano.



The discovery solves a missing piece of the tectonic puzzle: revealing the path that fluids and molten rock move through the deep Earth to volcanoes at the surface.

The international team included scientists from the University of Wollongong (UOW), Royal Holloway University of London, University of Cambridge, Australian National University, Columbia University, Cardiff University and Durham University.

Rare earthquake occurrences have recently been documented at the boundary between the Pacific tectonic plate and the Philippine Sea plate Credit: Lloyd White, University of Wollongong

The Mariana and Izu-Bonin arc system lies on the ocean bed, stretching 2800 kilometres from Japan south to Guam and beyond. It marks where two tectonic plates—the Philippine Sea Plate and the Pacific Plate—meet.

As the Pacific Plate subducts, sinking into the Earth's mantle, it carries water deep down into the Earth. The plate gets hotter and experiences more pressure the deeper it goes, until superheated water tries to escape, causing the rock to fracture and melt and creating a pathway for the molten rock to rise.

*Down to Earth acknowledges this material from phys.org*

### The Les Morris Memorial Trail...

As President of the Abberley & Malvern Hills Geopark, I get asked to inaugurate something new that the Geopark is doing. This year, was something very special indeed. Les Morris had been actively involved



*Peter Oliver and members of Les Morris's family in front of a wall of Carboniferous and Permian strata at Dudmaston National Trust.*

in the Geopark from the beginning and he was always keen to find new ways to communicate geology to the non-specialist. He had a vision to do this by using the vast store of information tucked away in

## ROCKS AND LANDSCAPES OF THE LAKE DISTRICT & CUMBRIA

Discover the story of Cumbria's varied geology based on up-to-date knowledge and giving practical experience. Beginners welcome.

STARTING Thurs SEPT 19 2019 (excl Oct 24)

10 WEEKLY SESSIONS THURSDAY EVENINGS

7pm to 9pm

with additionally 2 FULL-DAY FIELD TRIPS (weekends)

£125

Tutor: Stephen Mott M.Sc., B.Sc., PGCE

Classes held at Austin Friars School, Etterby Scour, CARLISLE, CUMBRIA.

BOOKING & FURTHER DETAILS FROM: Stephen Mott:

Email: [stephen@mott.me.uk](mailto:stephen@mott.me.uk)

Mobile 079 309 70579

Further information available via email or website:

<https://www.mott.me.uk>

stone built walls to bring the story to everyone .

The Geopark's Peter Oliver took up the idea and has transformed it into a discovery trail that stretches across the Geopark. As Peter says: "Walls in houses, gardens, barns, churches and public buildings are everywhere and many are made of natural stone. They are an easy way to discover the wonders of rocks and the history of planet Earth.

Across the Geopark there are many different rocks varying in age from 10,000 years old to nearly 700 million years old. Many rocks have been used as building stones in the construction of important historical buildings but also in the building of simple local walls. This trail takes you across an area of 650 square miles from Bridgnorth to Gloucester, and Worcester to Hereford, and all places in between. All locations are accessible to the public and in most cases access is free of charge. Some will require a walk but others are adjacent to car parks and bus and train routes. Many are close to visitor centres and cafes and village or town centres."

*For more information about lots of extra locations visit: [www.geopark.org.uk](http://www.geopark.org.uk) and check 'Explore Geology and Landscape' and 'Places to Visit'.*

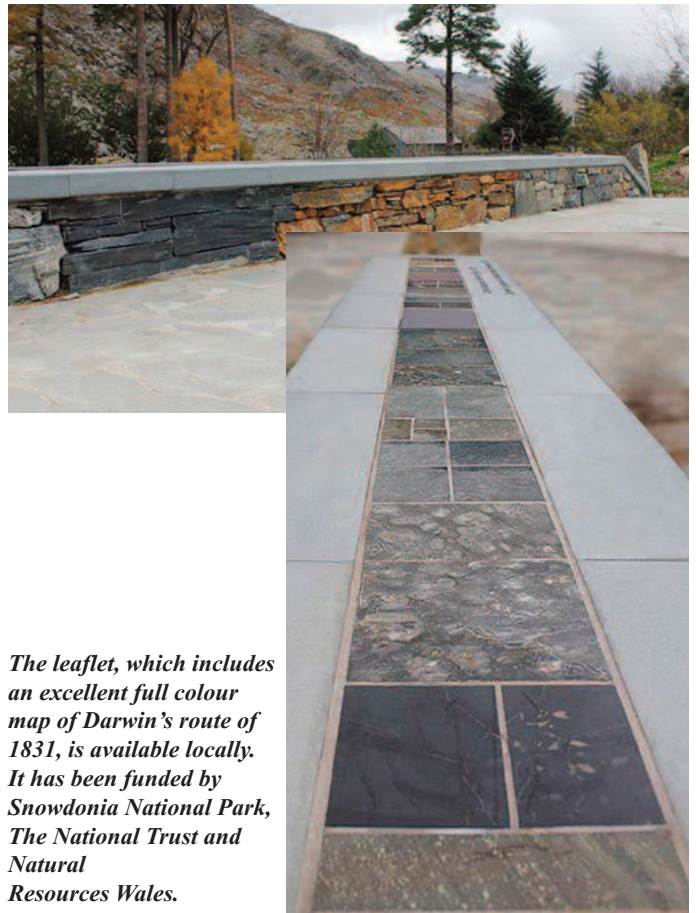
### Darwin's geological footsteps through Snowdonia...

A new bilingual leaflet has been published that celebrates the work of Charles Darwin in Snowdonia, nearly 190 years ago. It was in 1831 that Darwin took a journey through the area in the company of his mentor Adam Sedgwick of the University of Cambridge.

His journey took him up Nant Ffrancon to Ogwen, around Cwm Idwal then on via Capel Curig to Ffestiniog and across the Rhinogydd to the coast, finishing at Barmouth.


Now that journey is celebrated and commemorated in a rock wall which is located in front of the Ogwen Centre below Cwm Idwal. The rocks were collected as 30-40 cm sized boulders from roadside quarries, forestry tracks and beaches. Some of the locations were remote and several organisations generously helped with vehicular transport.

The collected rocks were taken to Cerrig Granite & Slate Ltd's workshops Pwllheil where they were cut, polished and embedded into sections that make up the top of the wall.



*The leaflet, which includes an excellent full colour map of Darwin's route of 1831, is available locally. It has been funded by Snowdonia National Park, The National Trust and Natural Resources Wales.*

**Reading Geological Society**



Join us on a field trip to  
**Fforest Fawr Geopark  
Brecon Beacons**


**Friday 20<sup>th</sup> – Monday 23<sup>rd</sup> September 2019**

*Explore this beautiful part of Wales  
with expert leaders and good company*


Details from the website: [www.readinggeology.org.uk](http://www.readinggeology.org.uk)

or contact David or Carole on:  
[field.meetings@readinggeology.org.uk](mailto:field.meetings@readinggeology.org.uk)

Cost including bed and breakfast  
and local travel - £250



## HAMPSHIRE




# MINERAL & FOSSIL SHOW

**Saturday 7th September 2019**  
Community Centre, Lyndhurst, Hants  
10am to 4.30pm

**MINERALS, FOSSILS, GEMS, JEWELLERY & BOOKS  
SALES, DISPLAYS & REFRESHMENTS**

**Admission £1**  
(Free to Junior Rockwatch members & accompanied children under 14)



"FOSSIL & MINERAL"...  
Sea Urchin infilled  
with Quartz Crystals  
(*Microster coralsudanicum*)  
Grange Chine, Isle of Wight

Specimen collected and photographed by Barry Pitt, Southampton

Show organised by  
**Southampton Mineral & Fossil Society**  
For further information, visit our website [www.sotonminfoss.org.uk](http://www.sotonminfoss.org.uk)  
or email [show@sotonminfoss.org.uk](mailto:show@sotonminfoss.org.uk)

## Late Summer & Autumn Day Trips are here...

*During August, September and October we'll be running a number of day field trips, before this programme gives way to our Day Schools over the Winter months (details in September DtoE extra).*

*The standard price is £15.00 per person, with some trips at the lower rate of £10.00 per person. All trips offer a £3.00 discount for holders of Club Class, students under 19 and groups of 5 or more people booked together.*

*To book for any Day Trip go to: [www.geosupplies.co.uk](http://www.geosupplies.co.uk) and enter the online shop. Alternatively ring us on: 0114 245 5746*

### Wednesday, August 14

#### Geology & landscape of the Burbage area of Derbyshire

Despite being based in Sheffield, it's a very long time since we arranged a visit to this area on the SW edge of the city and into Derbyshire. It's a big landscape with thick sandstone units, dipping strata and faults. We'll be taking in Higger Tor and Carl Wark along the way in what is quite a small area with superb landscape.

*Meeting: Upper Burbage Bridge car park (GR 262 830) at 10.30 Standard prices*

### Saturday, September 7

#### Geology & minerals of Kit Hill & Callington area

This is a story of granite outcrops and their associated minerals. We begin our day with a look at the overall landscape of this part of Eastern Cornwall, before homing in on the settlements of Callington and Kelly Bray which were formerly mining centres for a variety of different minerals.

*Meeting: Car park at the top of Kit Hill at 10.30 Standard prices*

### Tuesday, September 10

#### Rocks and landscape of Roche Rock area

This is a day that's all about granite and its related rock. We'll see unaltered granite as well as various stages in its breakdown. At Roche Rock there's tourmaline and then we see its reduction to kaolin at the china clay museum at Wheal Martyn.

*Meeting: Roche Rock at 10.30, standard prices, Wheal Martyn Museum admission is extra.*

### Wednesday, September 18

#### Geological sites in Walsall & the Black Country

It's a while since we visited the geology trail at the Dingle and Cuckoo Nook in Walsall. This is just 4 km east of Walsall town centre and is an area that was formerly quarried for limestone. The Silurian rock is of similar age to that at Wren's Nest so fossils are a distinct possibility! Afterwards we'll visit another local site.

*Meeting: On B4151 Sutton Road near The Three Crowns PH at 11.00 Standard prices*

### Monday, September 23

#### The Permian geology of South Shields, Tyne & Wear

There's a thin strip of Permian marine strata that extends from Nottinghamshire northwards to Tyne and Wear. Around Sunderland they form a very interesting section of coastal exposures, mainly of dolomite. These contain some amazing concretions that have been the subject of recent debate in the pages of Down to Earth.

*Meeting: Trow Point car park at 10.30 Standard prices*

### Saturday, October 19

#### Geology of Nefyn, North Wales

The Llyn Peninsula is one of the most interesting areas of North Wales yet it is little known to most people. A lot has to do with its relative remoteness, but a visit is well worthwhile. We'll be taking in some of the rocks of a former ophiolite complex, including serpentines and pillow lavas. Across a major fault lie igneous intrusions and slates, which will be studied during the day.

*Meeting: Nefyn Harbour at 10.00 Standard prices*

### Wednesday, October 23

#### Geology of Hastings & Rock-a-Nore

Come and join our small group of resident geologists for a day spent exploring the cliffs and coastline around Hastings. This is a famous area for the rocks of the Lower Cretaceous, below the Chalk. There are some fascinating insights into ancient environments with sedimentary structures and fossils.

*Meeting: Central Hastings, to be confirmed at 10.30 Standard prices*

### Saturday, October 26

#### Geology and landscape of Dorking

On this exciting day, we'll be taking in a tour of the sandstone caves of Dorking as well as seeing something of the geological setting of the town. There will also be a short visit to Denbies wine estate, famous for its bubbly! Places on this trip are strictly limited, so first come, first served.

*Meeting: Denbies wine estate at 10.30 Standard prices Cave tour is an additional £6.00*

*Several of these day trips are set to coincide with residential field trips that we are running in the respective areas. Please enquire about additional days that may be available.*

## Autumn distance learning courses...

*This Autumn we'll be running the following distance learning courses. Each course has a minimum of 10 Units but you can use our learning site for up to 6-months. For each course you can also receive the materials by post in paper form or electronically by email or Moodle. All courses run from mid-September 2019. They cost £75.00 by email/Moodle and £100.00 for printed materials by post.*

*Here's what's on offer:*

*"How the Earth works - new views of an old planet"* This 11-Unit extensively revised and rewritten course, looks at the theory of plate tectonics. You'll learn how the theory developed over a period of nearly 100 years and how it's still evolving today. The course starts with basic Earth chemistry and physics and takes it from there.

*"Yorkshire Geology"* This is a 10-Unit course that examines the geology of the county, step by step. Naturally it starts with the oldest rocks in the Ingleton area and ends with the Devensian glaciation that shaped the coast of Holderness.

*"Time Travellers Britain 2"* A further 10 Units that take in some of our finest geology. Don't worry, there's no requirement for having done the first 10 Units. This batch includes: London's true underground, East Anglia, Orkney & Shetland, the work of Gideon Mantell and George Barrow to name but a few of the Units.

*"Steps toward the rock face"* This introductory, 11-Unit course, can be started at any time. You just push the button whenever you wish!

*For more information on any of the courses Email: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk)*

## Autumn face-to-face adult classes...

*This Autumn we'll be running 10-week adult education classes in three locations in Sheffield and Chesterfield. In each case, our subject will be "How the Earth works - new views of an old planet".*

*Classes cost £65.00 (with a £5.00 discount for holders of Club Class cards). Alternatively you can pay by the week, in which case the cost will be £8.00 for each session.*

*Totley Rise Methodist Church, Monday 2.30-4.30 commencing 16/09  
Commercial Hotel, Chapelton, Thursday 10.15-12.15 commencing 19/09  
Eyre Chapel, Newbould, Chesterfield, Thursday 2.00-4.00 commencing 19/09*

*You can enrol for these classes via our website by entering the online shop, or ring us on 0114 245 5746 to pay by card. [www.geosupplies.co.uk](http://www.geosupplies.co.uk)*



## Our Residential Field Trip Programme for 2020



The majestic Black Cullins of the Isle of Skye  
(Photo: Chris Darmon)

We're so excited by our 2020 Residential Field Trip Programme that we've decided to release details of all the trips at the same time. This will allow you to plan your year, well in advance. We look forward to seeing you somewhere in 2020!

We've got a mix of new and old locations with, what we hope, is something for everyone. We have our first visit to a fabulous geopark in Portugal, along with a repeat of our 2019 sell-out Norwegian trip. We've a long awaited Shetland Isles trip, as well as our first ever trips to the Yorkshire Dales and the Forest of Dean.

At this stage, we are only awaiting final details for the Summer School and the Forest of Dean trips, all of the others have brochures and are open to book.

For further details, visit the website or  
Tel: 0114 2455746  
Email: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk)

### The complete 2020 field trip programme...

- Terras de Cavaleiros, Portugal - March 13-20\*
- Norway revisited - March 27 - April 5\*
- Raasay & Skye - April 25 - May 2\*
- Eigg & Rum - May 3-12\*
- Dingle Peninsula - May 31 - June 7\*
- Shetland Isles - June 20-27\*
- Western Lake District - July 4-11\*
- Summer School - July 25 - August 1
- Pembrokeshire - September 1-8\*
- Isle of Arran - September 14-21\*
- Forest of Dean - September 27 - October 1
- The Yorkshire Dales - October 6-11\*
- The Malvern Hills - October 23-28\*

Trips marked \* have brochures that can be viewed on our website: [www.geosupplies.co.uk](http://www.geosupplies.co.uk)  
We look forward to hearing from you!



# Come & join us on an Autumn 2019 Residential Field Trip



Beds of Lower Cretaceous Hastings Beds, Cliff End, Fairlight Cove. (Photo: Wild Hastings Wordpress.com)

We've still got some vacancies on our exciting Autumn 2019 residential field trips. So it's still not too late to make your booking. We welcome all, who are interested in rocks and the landscape to join us. Our trips are informal, friendly and informative. We look forward to hearing from YOU!

If you are looking for a single room, these are very limited and may not be available at all on some of the trips.

Brochures for all of the trips can be viewed on our website: [www.geosupplies.co.uk](http://www.geosupplies.co.uk)

To enquire, or get a booking form, you can contact us as follows:

Tel: 0114 2455746

Email: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk)

## Autumn 2019 field trip programme...

It's not too late to join us - but book soon!

- South Cornwall - September 5-12  
N.B. New dates
- Northumberland Coast - September 22-27
- Llyn Peninsula - October 12-17
- Hastings Coast, Sussex - October 22-27

You can view brochures for all of these trips at our website: [www.geosupplies.co.uk](http://www.geosupplies.co.uk)

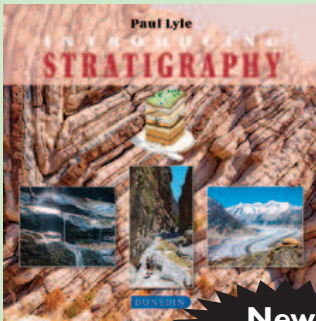
We look forward to hearing from you!



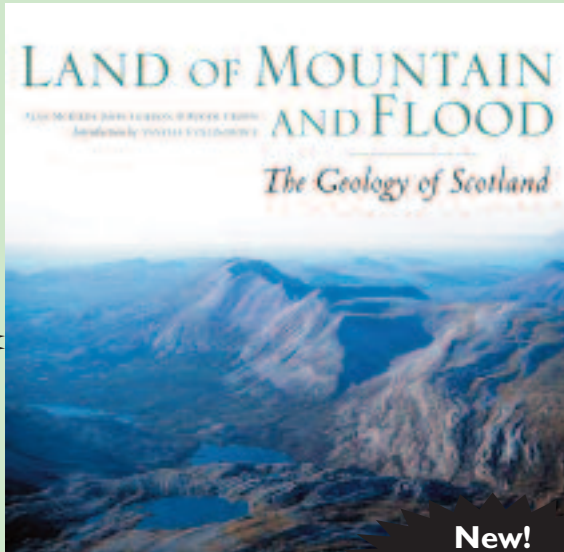


# Featured books August - October

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 the month shown above, provided that stocks are available. Please note, all prices include UK postage.



**New!**  
**£16.00**



**New!**  
**£35.00**  
hardback



**New!**  
**£11.00**



**Bedrock Geology of the United Kingdom and Ireland**  
£19.95

Including a folded copy

**New!**  
**£19.95**

Finished size:  
50 x 66 cm  
(20 x 26 ins)

BRITISH GEOGRAPHIC SOCIETY  
The Stanfords Award for Printed Maps 2017  
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British Geological Survey  
Experts | Impartial | Innovative

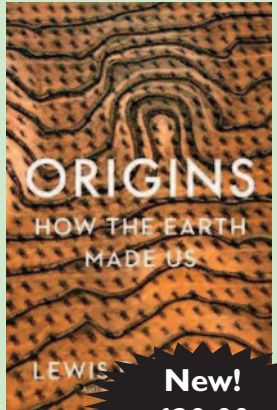
Geological Survey  
Geological Survey of Ireland  
Geological Survey of Northern Ireland

Department of the Environment, Community and Local Government  
GSNI

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