



# Down to Earth

*extra*

Issue 81 September 2019

## SPOTLIGHT

- 2020 Residential Field Trips - the latest information
- Join us on a day trip - soon!
- Autumn face-to-face and distance learning courses
- Autumn Day Schools now open!

Part of the newly restored stonework at Bewdley, Severn Valley Railway Station. Local Highley Sandstone from the Carboniferous Coal Measures has been replaced with Millstone Grit from Birchover, Derbyshire. (Photo: Chris Darmon)

## From the Editorial team...

All too quickly the Summer is over and we're into the Autumn. I'm not sure about you, but once we get into September it feels a bit like the beginning of a new year. The nights continue to pull in and we have only Winter to look forward to!

If you're a member of a local geological society or a U3A group, you've probably got a new session to look forward to with new topics to learn about or to study. Sadly, some of you will have little opportunity to study any geology during the 'closed season' as you no longer have a U3A group or any local classes. Following a recent item in the *Down to Earth* magazine we're learning more about the local and national geological picture and there's more bad news than good.

Here in the *Down to Earth* office we're gearing up for a very busy Autumn. Chris has face-to-face classes in Totley and Chapeltown in Sheffield and Chesterfield in Derbyshire, all commencing in mid-September. The topic being covered at all three is *How the Earth Works*. We are also fitting in four Autumn residential trips and a number of day trips around the country. During November and December we'll be putting on our usual array of Day Schools. Most will be looking at *How the Earth Works* with a focus on plate tectonics.

Finally, everyone has access to our *How the Earth Works* course, because we're also doing it online via an 11-week course. You can have this electronically, or in paper form. If plate tectonics doesn't appeal we're also offering *Yorkshire Geology* and *Time Traveller's Britain Part 2*. Details of all of our courses and trips can be found on page 6 of this *DtoE extra*. This Autumn is going to be busy, and that's before we even mention what happens with Brexit! Have a great Autumn whatever you get up to.

*Chris Darmon & Colin Schofield*

*The Down to Earth extra Editorial team*

## See pages 6 & 7 for what's available for you to study this Autumn!



## news update

### Could a 2.9 magnitude earthquake mark the beginning of the end for Cuadrilla in Lancashire?

Over the past several months fracking firm Cuadrilla, have been carrying out work at the Preston New Road site near Blackpool. During that time things have been generally quiet, apart that is from the occasional low level earthquake.

Each time this happens, there's a statutory shut down for some 18 hours before work can re-start. Throughout these difficulties the Company and BGS have stated that there's nothing for local residents to worry about. However over the August Bank Holiday weekend, a quake of 2.9 magnitude was recorded which was most definitely felt by hundreds of local people.



*A view of the Preston New Road site, taken just a few days before the latest 2.9 earthquake (Image: Sky News)*

Whilst the Company continues to say that this is 'normal' and that there's no need for concern, it's hardly surprising that many locals are

running out of patience. It's not been helped by a newspaper article that accuses the BGS of "collaborating with the fracking contractor to hide information about earth tremors caused by fracking in Lancashire", something which is strenuously denied by BGS.

In a statement, Cuadrilla said no hydraulic fracturing was being carried out at the time of the latest tremor and none was carried out over the weekend.

The firm added: "We appreciate this has caused concern for local people and by way of reassurance it is worth noting that this event lasted for around a second and the average ground motion recorded was 5 mm per second. This is about a third of that permitted for construction projects. We are working with the team of regulators who intensely monitor our activity at Preston New Road to investigate the event and will provide more updates in due course."

It is at least good to see that Cuadrilla is willing to engage with people and to issue such reassurances, but it does nothing to address the very real concerns of local people. It's important to say that this has nothing to do with the rights and wrongs of fracking itself.

We are in danger here of seeing the end of what can be seen as 'the fracking experiment' without ever really answering the prime question as to whether fracking can be carried out profitably.

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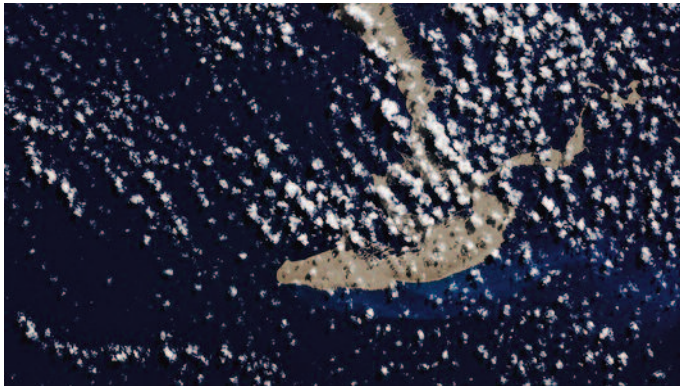
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## A vast 'raft' of pumice is found floating in the Pacific Ocean...

We all know that the volcanic rock pumice floats on water, but it's not supposed to form vast rafts that float on the surface of the Pacific Ocean! It was found in early August by Australian sailors and is thought to have originated in an undersea eruption, probably in the region of Tonga.

What's unusual is the location, as pumice is more typically a product of shallow water eruptions, not deep sea volcanoes. The pumice is something of a hazard to shipping as it comprises fragments up to football sized and beyond.

Associate Prof Scott Bryan, a geologist studying the samples at Queensland University of Technology, said such pumice masses could be seen about once every five years in the region.



*Floating pumice, a hazard to shipping but a boon to marine life (Image: The Weather Channel)*

"It is a phenomenon reported over time, usually as islands in the middle of the ocean that people encounter but then can't find again," he told the BBC. "It can be as if the whole surface [of the ocean] has turned to land".

"At the moment there are more than a trillion pieces of pumice all

floating together, but over time it will break up and disperse across the area," he said. The pumice is currently drifting westwards towards Fiji, and is likely to pass New Caledonia and Vanuatu. It has also been forecast to reach Australia.

"It possibly could reach Australia in a year's time, but we don't know if it could even last," said Dr Martin Jutzeler from the University of Tasmania.

However, the pumice could yet prove to be a boost to local marine life. As it drifts across the Pacific it will become home to many organisms. Among these will be corals which could cause local revival of coral reefs say the experts.

## We say a sad farewell to Maureen Pritchard, a great geo-educator...

We recently learned of the passing of Maureen Pritchard, a retired geography teacher who has spent a number of years leading her own U3A group in Wellingborough. When she couldn't find a suitable room for the group to meet in she opened up her own home and held classes in her dining room.

Maureen epitomised all that's good about the U3A movement. This was collaborative and community learning at its very best. Maureen will be sadly missed, not only by her husband Tony and family, but also by people in the wider community.

## Massive onshore gas discovery near Hull...

Reabold Resources, has announced that it has made what is potentially one of the UK's largest onshore gas discoveries at Newton, near Hull, in East Yorkshire. If the preliminary tests are confirmed, it will be the largest onshore discovery since 1973, at a total of 189 billion cubic feet of gas, the equivalent of 31.3 million barrels of oil.

"We are delighted by today's results confirming that West Newton could potentially be the UK's largest onshore gas field," said Reabold co-chief executive Sachin Oza.



## Show Dates

September 7 & 8  
**Ferneham Hall, Fareham, Hampshire**

September 21 & 22  
**Newark Showground, Nottinghamshire**

September 28 & 29  
**Lyndhurst Community Hall, Hampshire**

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

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

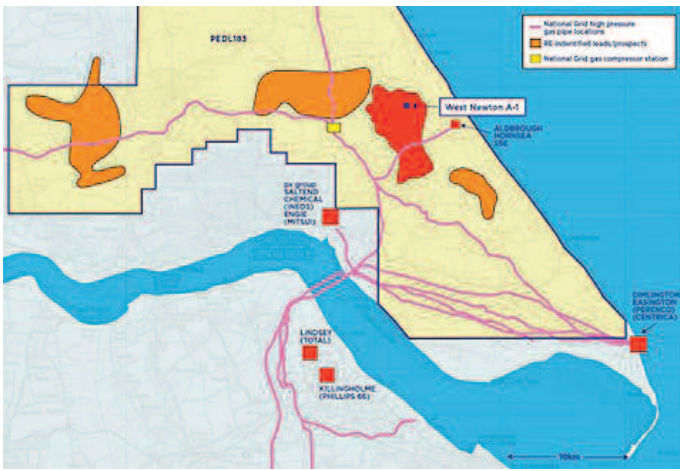
**Admission (one entrance fee covers the whole weekend):  
Kempton Park: adults £5.50, seniors £3.00  
All other shows: adults £4.50, seniors £2.00  
All shows: children 8-16 £1.00, under 8's free**

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

October 5 & 6  
**Bath Racecourse, Bath**

October 19 & 20  
**Chelmsford City Racecourse, Essex**

October 26 & 27  
**Newton Abbot Racecourse, Devon**



"The results of the well have exceeded our expectations and have also shown a significant liquid hydrocarbon volume which has increased our excitement and the future value of the field materially. From its onshore location near Hull and with nearby infrastructure available, we anticipate that West Newton can provide material volumes of hydrocarbons for the UK's energy needs at low cost and in the near term."

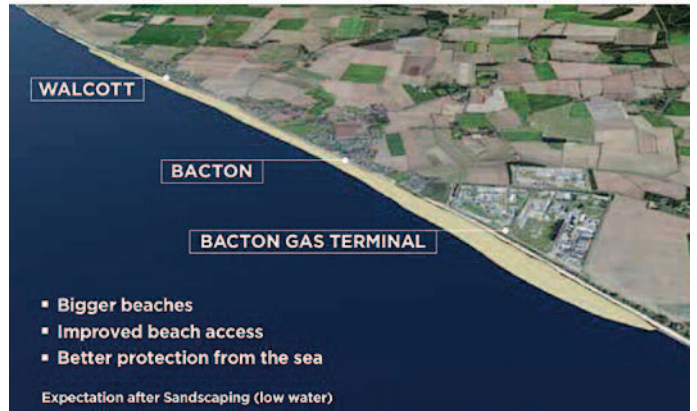
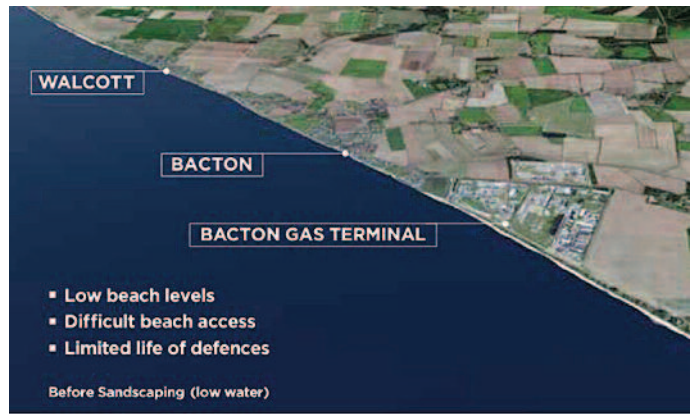
He went on: "Success in a project of this scale would undoubtedly be transformational for Reabold and its investors. We look forward to the well test in the coming weeks and potentially generating early cash flow from the testing programme."

### Sand is the new coastal defence material for part of the Norfolk Coast...

Geologists visiting the North Norfolk Coast for the first time are struck by two things. Firstly, erosion is going on at an alarming rate and secondly, there's an awful lot of foreign rock types, especially igneous rocks from Norway, in the form of block stones. These are the first line of defence to combat coastal erosion, but now there's a new weapon on the armoury, sand.



At work on the beach at Bacton in early July, with the dredger in the background. (Image: Twitter)



Modelling how the beach might look in the future, after completion of the current works. (Image: Twitter)

Some 2 million cubic metres of sand are to be used in the construction of a 6 km long barrier that will protect the vital Bacton Gas Terminal, and also the coastal villages of Bacton and Walcott. The terminal handles around a third of the UK's gas supplies, but over the years it has stood on the cliff top, it has been getting ever closer to the sea. It now stands just metres from the top of a crumbling cliff edge. When it was constructed in the 1960s, it was more than 100 m from the cliff edge.

The £20 million project will see sand dredged from a licensed site and then moved to Bacton where it's connected to a giant pipe and a mixture of sand and water is pumped at a rate of 10,000 cubic metres per hour. Once it has all been shifted, the exact position for this artificial barrier will be down to the local tides, winds and waves.

## 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>

The scheme, which is expected to take around 5 weeks to complete, in a round the clock operation, has been designed by the Dutch company Royal Haskoning DHV. It is expected that the final barrier will be some 7 m high at low tide and extend up to 250 m out to sea.

Engineers have studied the North Norfolk coastline carefully, including accessing historical records, in an attempt to reconstruct what the beach was like 30 years ago.

A rigid barrier, made of concrete, was rejected because whilst it would protect the terminal itself, it would increase the risk to the villages of Bacton and Walcott a few miles down the coast. They would experience even faster rates of erosion. The sand barrier replicates an experiment carried out in the South of Holland at Zandmotor. This barrier was expected to last for 20 years, but a recent analysis suggests 40 years might be more accurate.

The Norfolk scheme is on a smaller scale to the Dutch one, but is still expected to last for 15-30 years, after which the sand would need to be replaced. So this is not a permanent solution, but it will buy time for the local communities and is far less invasive than other methods.

The scheme seems to have got the cautious backing of at least one academic, Prof. Sue Brooks of Birkbeck College, University of London said: "With the sandscaping scheme... there has been a shift from hard defending the coast to more of a nature-based solution. Put sand there - and let nature do with it what it wants. We don't know at this point how successful this scheme is going to be, but at least we're giving it a go, which is a really radical new way of thinking about shoreline management."

*The scheme is being funded jointly by the Bacton terminal operators, the Environment Agency and North Norfolk District Council.*

*We'd love to hear from any of our readers in the area, so that we can report on the progress of this project.*

### **New off-road long distance route allows cyclists to take in the geology of Northern England & Scotland...**

An 800-mile off-road cycle route has been launched connecting England and the north coast of Scotland for the first time. It connects the Peak District of Derbyshire with Caithness and Sutherland in the Far North of Scotland.

The trail takes riders through The Peak District, Yorkshire Dales and Kielder Forest in England, passing through some excellent geology along the way. Meanwhile in Scotland it passes along Loch Lomond, then through the Trossachs National Park, Loch Ness and onto Cape Wrath and John o Groats. Almost all of the route is a combination of off-road cycle routes already in existence, forest roads and quiet tarmac roads.


The route comes after a high-level of demand from cyclists for routes away from traffic, according to Cycling UK. Obscura Mondo Cycle Club helped Cycling UK with the creation of the trail in Scotland, with volunteers helping to map out an off-road route totalling 368 miles from Glasgow to the lighthouse at Cape Wrath.

Although the route hasn't been specifically aimed at taking in the landscape and rocks along the way, it is to be hoped that there will be many more people who become switched on to the idea that they are cycling through some stunningly beautiful places. In much the same




way that, fifty years ago, many people became introduced to the landscape of the Pennines by walking the Pennine Way. If the route proves to be popular, we can expect that someone will bring out a book or an app that allows people to discover more of the natural landscape for themselves.

*Read more at <https://www.cyclingweekly.com/news/latest-news/800-mile-off-road-cycle-route-england-north-coast-scotland-launched-436164#DeXtXSG3VwtLrffe.99>*



## 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 coralsudarium)  
 Grange Chine, Isle of Wight

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 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*

### 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 12 (NB Change of date since last issue)

#### 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 it 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 Day Schools are here...

*During November and December we'll once again be running a programme of Day Schools in venues around the country. If you've not joined us on one of these before, what can you expect.?*

For the first time, we're running a couple of experimental events in the West Midlands which feature some classroom work and also a couple of local rock outcrops. These are particularly aimed at people who are beginning to get acquainted with rocks and the landscape - *see below for more details.*

Our other Day Schools follow our familiar pattern of being entirely indoors. They are a mixture of hands-on practical work involving specimens and images and also some stimulating teaching with videos. These are aimed at a wide audience from the beginner though to those with more knowledge and



**Don't worry, we don't bite!**

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

**Come and join us!**

experience. All day school venues offer hot drinks and biscuits and others will provide us with a full lunch buffet - *see below for details.*

### Wednesday, November 6 Worcestershire

#### How do we read rocks & landscape?

This inside/outside day is aimed particularly at those for whom reading rocks and landscape is something new, although all are welcome. There will be an indoor session in the morning, followed by lunch in the cafe (at your own expense) and then we'll take a stroll to see some local rock outcrops and take in the wider landscape.

*Meeting: Severn Valley Country Park, Highley, Worcs at 10.30 Cost: £10.00*

### Wednesday, November 20 Wiltshire

#### How the Earth works, new views of an old planet

An exciting day that starts with an examination of our planet through its rocks and minerals and then moves on to peer inside to see how it is constructed, before moving on to examine how our understanding of how it works has changed radically in the last 100 years. From a rigid cooling body of the past, to a mobile, highly active Earth that we perceive today. There will be hands on practical work and several video presentations. The price includes hot drinks and a full buffet lunch.

*Meeting: Devizes Conservative Club at 10.30 Cost: £35.00*

### Wednesday, November 27 Worcestershire

#### Rocks of all kinds explained!

How do we distinguish different rocks? What's the difference between a granite and basalt, or a slate and shale? This inside/outside day will combine a classroom session with an outdoor visit around Bewdley where we'll be able to see natural rocks 'in the street'. There's an onsite cafe where you can buy lunch. This day is aimed particularly at beginners, but all are welcome.

*Meeting: Bewdley Museum at 10.30 Cost: £10.00*

### Saturday, November 30 Newcastle upon Tyne

#### How the Earth works, new views of an old planet

See Devizes above, for details of this course. At this Central Newcastle venue, only hot drinks and biscuits are included in the price.

*Meeting: Commercial Union building, Pilgrim Street at 10.30 Cost: £25.00*

### Saturday, December 7 Sheffield

#### Rockstars, a celebration of famous rocks

There are some rocks that everyone has heard of, like Portland Stone or Shap Granite. But why are they famous, what makes them so special? We'll be examining some famous rocks in a practical session and then learning more about them in a lively teaching session during this day of two parts. Included in the price is a hot and cold buffet lunch and hot drinks.

*Meeting: Commercial Inn, Station Road, Chapeltown Cost: £35.00*

### Wednesday, December 11 Birmingham

#### Rockstars, a celebration of famous rocks

See Chapeltown above for details of this course. At this venue only hot drinks and biscuits are available.

*Meeting: Lapworth Museum, Birmingham University at 10.30 Cost £20.00*

### Saturday, December 14 Hertfordshire/North London

#### How the Earth works, new views of an old planet

See Devizes above, for details of this course. At this venue, hot drinks and lunch are included in the cost.

*Meeting: YHA Lee Valley, Cheshunt, Herts. at 10.30 Cost: £35.00*

## 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, Chapeltown, 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,*



**Become a Club Class  
or Club Class Duo  
member for 2020**

**CLUB  
CLASS**

**We are once again offering 'Club Class' for 2020. Don't forget you can choose between a 'solo' and a 'duo', which allows a second person discounted rates on day field trips and day schools, provided the named member also attends. The discount on Day Schools has also increased to £5.00 per person.**

- Join any geological day trip in 2019 and save £3.00 on standard prices
- Save £5.00 on the advertised price of any day school
- Take out any **Down to Earth** subscription renewal or new subscription and save £2.00 on the advertised price
- Enrol for any **Down to Earth** distance learning or face-to-face course in 2019 and save £5.00 on the full advertised price.
- Save 10% on books and maps from BGS when ordered from Geo Supplies - only available to callers or telephone orders.
- Additional offers that we may make available from time to time.

#### Terms & Conditions

- The benefits are only available to the named 'Club Class' member.
- Holders of 'duo' can claim discount rates for a second person on day schools, day trips or face-to-face classes.
- It is the 'Club Class' member's responsibility to draw to our attention that fact that you are entitled to any discounts at the time of payment.
- Club Class cannot be used in conjunction with any other offer to obtain multiple discounts on a product or service and neither can it be used retrospectively for something already booked, or purchased.

**To enrol for 'Club Class' for just £10.00 or Club Class Duo for £15.00, go to: [www.geosupplies.co.uk](http://www.geosupplies.co.uk) or ring us on: 0114 245 5746**

**To book go to: [www.geosupplies.co.uk](http://www.geosupplies.co.uk) or ring us on 0114 245 5746**



## 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've an exciting mix of locations some old and some new, both in the UK and abroad. Join us in Portugal, Norway, Ireland, Scotland, Wales or England! Make your decision soon, as places are filling up fast!

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. Contact us for your booking forms.

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\*

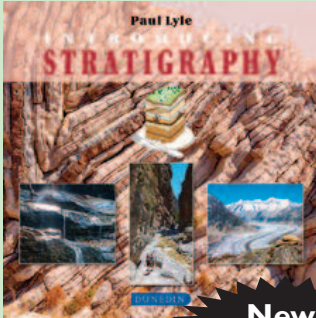
Trips marked \* have brochures that can be viewed on our website: [www.geosupplies.co.uk](http://www.geosupplies.co.uk)  
We look forward to hearing from you!



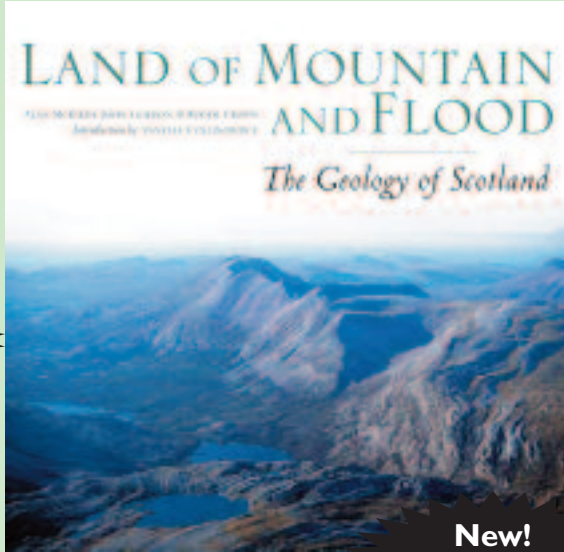


# Featured books August - October

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!**  
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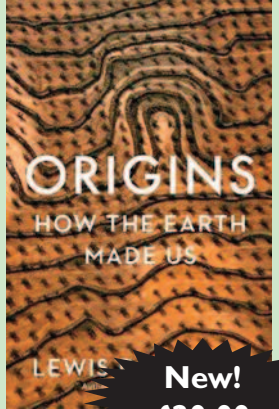
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