



Down to Earth *extra*

Issue 70 October 2018

SPOTLIGHT

- All of 2019 now booking with new locations available!
- Summer School 2019 open for booking!
- Autumn & Winter Day Schools now booking!



The magnificent vertical cliffs of Palaeogene (Tertiary) sediments that form Alum Bay on the Isle of Wight. This is Alpine folding at its very best!
(Photo: Chris Darmon)

From the Editor...

It's now about three years since British Geological Survey (BGS) announced that it was no longer updating published geological maps, at least in printed form. In the time since the announcement, several maps have gone out of print, in some cases good maps that cover popular areas. To its credit, BGS announced that where there were large stocks of flat copies they would arrange for some maps to be folded.

On the negative side however, there are now an increasing number of instances where the only map that's available in printed form is way out of date. A customer who ordered a copy of Map 61 for Pateley Bridge in Yorkshire, returned it with a note that said: "It might be appropriate in a museum, but it will be of no use as a modern map in the field." The same customer added: "The detail of mapping on the BGS geology app is far superior to that, and that's what I thought I was getting a reproduction of. How BGS can justify supplying this quality of map for anything other than a wall picture is beyond me."

In complete contrast, I've been sent a book and map "*Geology of the Dingle Peninsula*" by Ken Higgs and Brian Williams from the Irish Geological Survey. It takes map reproduction at the 1:50 000 scale to a new level. The accompanying field guide has inspired me to add Dingle to our 2020 list of field trips. The accompanying book, isn't a memoir, it's a field guide. Now that's a sensible departure, recognising for the first time that there are many people who will want to use a printed map on a field trip, on their own, or on an organised trip.

Our own BGS dabbled in this market using simplified 1:25 000 maps, under the title "*Exploring the landscape of...*". However, there are only six of these maps and there are no signs of any more being produced. For a country who almost invented the science of geology, this really is a poor state of affairs.

Chris Darmon

Down to Earth extra Editor

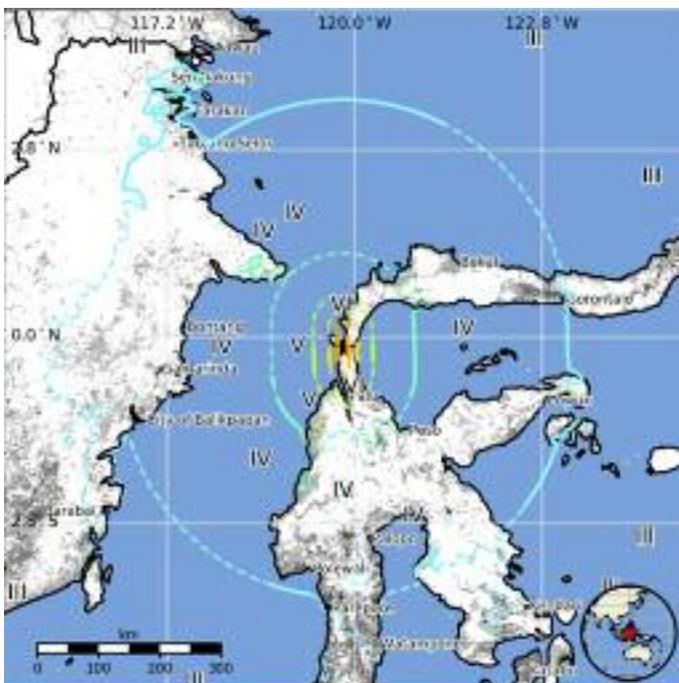
Have you booked a residential trip for 2019 or an Autumn/Winter Day School yet?



news update

Earthquake and tsunami wreaks massive damage and large number of casualties in Indonesia...

A magnitude 7.5 earthquake struck the Indonesian island of Sulawesi at 6.03 pm local time on September 28th. At first, casualties were thought to be light and the USGS website reflected this in its predictions, but the current death toll stands at 1,300 and looks like rising substantially..



At the time of writing (October 1st) rescue workers are still to reach many people thought to be trapped in the ruins of two hotels in the city of Palu. It may well be that the 6 m high tsunami wave, could have killed many more than the earthquake itself. On Palu beach, hundreds of people were attending a festival when the tsunami struck.

Meanwhile the authorities have yet to reach Donggala, a region of 300,000 people north of Palu and close to the epicenter of the quake, and two other districts. Indonesia's Vice President Jusuf Kalla feared that the toll could reach thousands. President Joko Widodo visited a housing complex flattened when the quake liquefied the soil it stood on, and called for patience. "I know there are many problems that need to be solved in a short time, including communications," he said.

Indonesia, which sits on the seismically active Pacific Ring of Fire, is all too familiar with deadly earthquakes and tsunamis. In 2004, a quake off Sumatra island triggered a tsunami across the Indian Ocean, killing 226,000 people in 13 countries, including more than 120,000 in Indonesia.

Questions are sure to be asked why warning systems set up after that disaster failed so badly on Friday. Nugroho, bemoaning a fall in funding, said no tsunami buoys, one type of instrument used to detect the waves, in Indonesia had been operating since 2012. The

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meteorological and geophysics agency BMKG issued a tsunami warning after the quake but lifted it 34 minutes later, drawing criticism it had been too hasty. But officials estimated the waves had hit while the warning was in force.



Utter devastation across wide areas of the city of Palu. (Image: World Vision, one of the aid agencies working tirelessly to help the people of Palu.)

By the standards of the region, this wasn't a particularly large earthquake, but it was under the sea and at a shallow depth. The full picture of what caused the size of the waves is not yet known. There is speculation that landslides under the sea and the geography of the bay, in particular its funnel shape, may have been contributing factors. A full analysis, usually made available by USGS, was not published on October 1st.

Back in the UK the major aid agencies have launched a joint appeal as the need for immediate short term aid is acute. With power outages over a wide area and the inundation of the coastal area by salt water there are fears for water supplies as well as food and shelter.

Fears for climate as new coal fired power stations under construction in China...

Green Campaign Group *CoalSwarm* have undertaken a study that suggests that China has resumed construction at many coal fired power station sites across the country. This comes despite assurances that construction would be curtailed.

The research indicates that some 259 gigawatts of electrical generation capacity is under constructions, an increase of some 25% on the current capacity. Power generation used to be controlled by the central government, now it has been transferred to local authorities.

"This new evidence that China's central government hasn't been able to stop the runaway coal-fired power plant building is alarming - the planet can't tolerate another US-sized block of plants to be built," said Ted Nace, from *CoalSwarm*.



Aerial evidence supports the findings of the new study. This shows new buildings at Huadian Nanxiong in February 2018 (Image: Earth Labs Inc)

He went on: "It's not too late for the central government to fix the problem, but they have to start cancelling projects, not just rescheduling them." If this extra capacity was operational, it would make it much more difficult for the world to limit carbon dioxide.



Show Dates

October 27 & 28 Rock, Gem 'n' Bead Show
Newton Abbot Racecourse, Devon

November 3 & 4 Rock, Gem 'n' Bead Show
Cheltenham Racecourse, Gloucestershire

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>

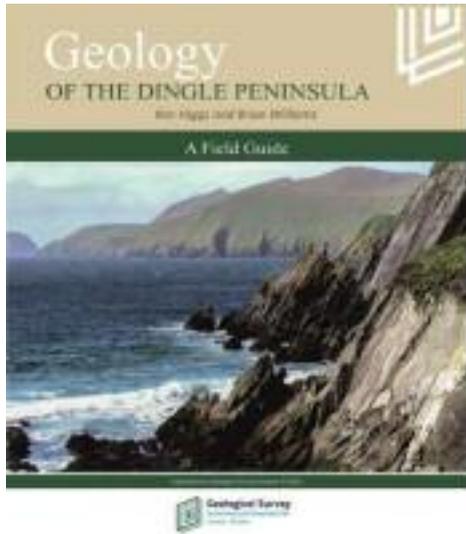
November 10 & 11 Rock, Gem 'n' Bead Show
Kempton Park Racecourse, Staines

November 17 & 18 Rock, Gem 'n' Bead Show
Brighton Racecourse, Sussex

GSI shows how to do it...

Upon my return from a field trip to the Isle of Man, there, on my desk was a book that I'd been eagerly awaiting. Professor Brian Williams had sent me a review copy of "Geology of the Dingle Peninsula" which he co-wrote with Ken Higgs.

What do you say about a large format, 250-page, full colour book that comes with a great 1:50 000 geological map, folded into the back cover? I have only one word for it "brilliant!" The Geological Survey of Ireland have ticked all the boxes here, not least because this isn't a sheet memoir, although it does describe the geology, it's in fact a field guide, with lots of itineraries!



The Dingle Peninsula, in Ireland's County Kerry, is an area of amazing scenic beauty and a prime tourist area. This publication should encourage people to visit the area for field geology. Indeed, we've already got it on our list for consideration in our 2020 field season - watch out for details!

The final bit of amazing news is the cost - its just 20 Euro. At this moment in time we are investigating getting copies in for sale in the UK.

To find out the cost and availability, email us at: downtoearth@geosupplies.co.uk

FOR SALE

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for full details and pictures

Parts of Southwest England were connected to France in the ancient past, geologists reveal...

The fact that the English Channel is a relatively modern phenomenon, at least in geological terms, is well known. Indeed, we believe that the chalk was only breached around 10,000 years ago. However, a recent study by geologists at the University of Plymouth reveals a much more ancient connection with our near neighbour across the English Channel.



Dr Arjan Dijkstra in his laboratory (Photo: Plymouth University)

Dr Arjan Dijkstra, lecturer in igneous petrology and lead author of the findings, which are published in *Nature Communications*, has been carrying out extensive studies of rocks in Devon and Cornwall. These studies involved detailed work on the mineral properties of exposed rocks across the two counties. They reveal a clear boundary which coincides with the long recognised Start-Perranporth fault line. Areas to the north of the fault share their geological roots with the rest of

**North London
Mineral, Gem & Fossil Show**
Saturday
24th November 2018
10.00am - 4.00pm

+ Jewellery, Raffle & Lucky Dip
TRINITY CHURCH
NETHER STREET, N12 7NN
Near 'Tally Ho' Pub & Artsdepot, Ballards Lane, North Finchley
See map overleaf

Local car parking + nearby undergrounds -
Northern Line **West Finchley** + **Woodside Park** Stations.
No.'s 13, 125, 460 buses from **Finchley Central** to Tally Ho'

ADULTS £2 Accompanied children under 12 - Free
Large Hall with stalls + refreshment area

Amateur Geological Society
For contact details and all about us: amgeosoc.wordpress.com



Map showing a greatly simplified picture of how things might have been according to the study. (Image: Plymouth University)

England and Wales, whilst areas to the south clearly belong with France and Mainland Europe.

Among other things, scientists believe the research explains the abundance of tin and tungsten in the far South West of England – metals also found in Brittany and other areas of mainland Europe, but not so evident in the rest of the UK.

Dr Arjan Dijkstra, said: “This is a completely new way of thinking about how Britain was formed. It has always been presumed that the border of Avalonia and Armorica was beneath what would seem to be the natural boundary of the English Channel. But our findings suggest that although there is no physical line on the surface, there is a clear geological boundary which separates Cornwall and South Devon from the rest of the UK.”



Callum Hatch collecting samples in the field. (Photo: Plymouth University)

For the research, Dr Dijkstra and Masters student Callum Hatch (now working at the Natural History Museum) visited 22 sites in Devon and

Cornwall that were left exposed following geological events, such as underground volcanic eruptions. These took place around 300 million years ago and brought magma from depths of 100 km to the Earth’s surface.

They took rock samples from each site, subjecting them to detailed chemical analysis in the lab using X-ray fluorescence (XRF) spectrometry.

The samples were also then dissolved in acid in order to conduct a more intensive isotopic analysis, with scientists examining the levels of two elements – strontium and neodymium – to understand the full history of the rocks. These findings were then compared with previous studies elsewhere in the UK and mainland Europe, with the results showing the clear boundary running from the Exe estuary in the East to Camelford in the west.

Dr Arjan Dijkstra concluded: “We always knew that around 10,000 years ago you would have been able to walk from England to France,” Dr Dijkstra added. “But our findings show that millions of years before that, the bonds between the two countries would have been even stronger. It explains the immense mineral wealth of South West England, which had previously been something of a mystery, and provides a fascinating new insight into the geological history of the UK.”

The Editor comments: I always approach studies like this with a question. Do the findings answer more of my field questions than any new questions they pose? My answer here is a qualified yes, but I’m sure it’s not that simple and I’d want to know more about the timing.

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482, R14, R11

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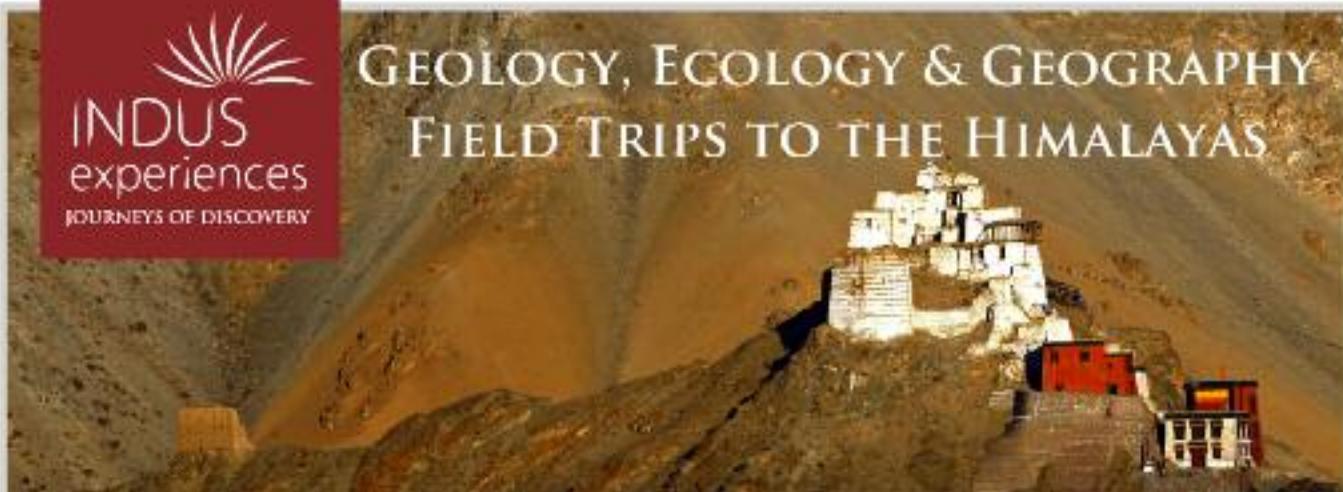
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GEOLOGY, ECOLOGY & GEOGRAPHY FIELD TRIPS TO THE HIMALAYAS



SPITI & LAHAUL INDIA

Led by Heather Kelly & John Macgillivray

27th July to 14th August 2019 (18 days)

Per person sharing a room £3970.00 with flights. Single Room supplement £730.00

For People with a sense of adventure, who would like to explore this little-known part of the high Himalayas close to the border with Tibet. We will see some dramatic geology, look at some of the plants and animals which make their home in this mountain desert and visit ancient Buddhist monasteries. The area is remote, the roads are rough and the driving slow. Accommodation will generally be in basic hotels, home stays and a tented camp though the hotels in Delhi and Shimla, at the beginning and end of our trip, will offer a touch of luxury.



KASHMIR & LADAKH INDIA

Led by Dr Danny Clark-Lowes

3rd to 18th August 2019 (16 days)

Per person sharing a room £3350.00 with flights. Single Room supplement £640.00

Experience the rich culture of Kashmir & Ladakh, contrasting the beauty and charm of the Kashmir valley with the splendour of the Ladakh mountains. Transport will be in comfortable vehicles, on tar and dirt roads through wild valleys and over high passes (going up to 5,000 metres above sea level). Trek in remote valleys, up to a glacier snout and to the suture between the Indian and Asian plates, visit Buddhist monasteries and temples perched on remote hillsides. Accommodation in Srinagar will be in period houseboats on Nagin Lake, good hotels, local lodges elsewhere and at a well-appointed camp at Tso Moriri.



ANNAPURNA - NEPAL HIMALAYA

Led by Dr Danny Clark-Lowes

5th to 19th October 2019 (15 days)

Per person sharing a room £3370.00 with flights. Single Room supplement £395.00

Study aspects of the geology and geography of the spectacular Himalaya and gain an insight into the history, culture and religious beliefs of the region. Journey along mountain roads and tracks offering splendid views of some of the highest mountains of the Himalaya. Undertake treks in beautiful valleys, particularly along the Kaligandaki River, where geological exposures are dramatic, and the varied flora is abundant. Accommodation will be at good hotels and local lodges. This trip is suitable for amateur geologists, those with an interest in learning some geology and those who simply enjoy being in the mountains.

Full details of itineraries, costs and how to book these tours please visit

www.indusexperiences.co.uk/earthsciences

E: holidays@indusexperiences.co.uk T: 020 8901 7320

Autumn Day Trips

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.

Day trips are suitable for all levels of knowledge, unless shown otherwise. Please note however that most involve modest walks. If in doubt, please ask. Accompanied children, and dogs, are usually welcome!

Sunday, October 14

Geology of Hele Bay & Ilfracombe

Join us as we begin to examine the Devonian slates of this part of the county. Picturesque Hele Bay is in the middle of the Ilfracombe Slates and is bordered to the east by the older Hangman Sandstone's and to the west by the younger Morte Slates. The eastern border runs along the eastern side of the valley of Combe Martin, the western border runs parallel from the coast at Lee Bay. You'll be able to see some interesting structures as we examine these rocks in detail and learn more about the setting of the seaside town.

Meeting: Car park due south of the beach by toilets (fee payable) at 10.00 Standard prices apply.

Monday, October 15

Valley of the Rocks, Lynton

The Valley of the Rocks is a beautiful place that is the stuff of legend. It's also a place with a story to tell of changing sea levels and of ice. Come and see the Devonian strata, some of it marine, which has been mildly metamorphosed and folded. This is one of the most beautiful stretches of coastline in the Southwest and is not to be missed.

Meeting: National Park Car Park behind toilets in the Valley of the Rocks (fee payable) at 10.30. Standard prices apply.



Valley of the Rocks, Lynton, Devon

Saturday, October 27

The North Norfolk coast

Come and see some of England's youngest strata. These early Quaternary sediments show us evidence for climatic changes that are both stark and dramatic. There are also huge rafts of chalk left high on the cliff tops, but how have they got there?

Meeting: Hunstanton Beach Terrace Road car park at 10.30 Standard prices apply.

Autumn & Winter Day Schools

We are pleased to announce a new programme of day schools this Autumn. These courses normally run from 10.30 to 4.00 and always involve lots of hands on practical work. They are suitable for people with a range of geological knowledge, including beginners. A discount of £5.00 per person is available for holders of Club Class and groups of 6 or more people.

Friday, November 9

Chappell Centre, Congleton, Cheshire

"All that glitters is not gold" is a lively look at minerals through the medium of some nice specimens and photographs. Suitable for beginners as well as experienced people. £35.00 including lunch.

Wednesday, November 14

Lea Valley YHA, Cheshunt, Hertfordshire

"Geological Jigsaws" - piece the evidence together and make sense of an imaginary geological map. Uses specimens and photographs in a fun way for everyone to enjoy. £35.00 including lunch buffet.

Saturday, November 24

The Bridge Centre, Monmouth, Gwent

"Geological Maps and how to read them" - a hands-on practical day that will take you on a journey that will explain what geological maps show, and how you can get the most out of them. This is a day school that we have successfully rolled out in many places, but never before in Wales! £35.00 including lunch buffet.

Saturday, December 1

Commercial Union building in central Newcastle upon Tyne

"Geological Jigsaws" - piece the evidence together and make sense of an imaginary geological map. Uses specimens and photographs in a fun way for everyone to enjoy. £25.00 inc. light refreshments.

Wednesday, December 5

Lapworth Museum, University of Birmingham

"Fossils for everyone" - you don't have to be a palaeontologist! This day school will allow you to examine some superb material and also to hear from experts how fun fossils can be! See some of specimens collected by famous geologists from the nineteenth and early twentieth centuries. £20.00 including light refreshments.

Saturday, January 26

YHA London St Pancras, Euston Road

"All that glitters" - is a lively look at minerals through the medium of some nice specimens and photographs. Suitable for beginners as well as people with some knowledge already. £45.00 including lunch

Wednesday, February 20

Devizes, Wiltshire

"Geological jigsaws" - piece the evidence together and make sense of an imaginary geological map. Uses specimens and photographs in a fun way for everyone to enjoy. £35.00 inc. light refreshments.



Don't worry, we don't bite!

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

Come and join us!

Autumn distance learning courses, you can still join in...

For this Autumn we had hoped to run one brand new course entitled "Around the world in 20 great geological stories", however this has been postponed until the January 2019, as Chris Darmon is out of action. We will be offering the following courses in the Autumn "How the Earth works" and "British Isles geology" as supported self study course on Moodle, our easy to access learning platform.

"How the Earth works" is a 10-week course that examines the fundamental workings of our planet. What it is made of, what volcanoes and volcanic rocks tell us about the composition of the continents and ocean floors. Above all, it takes you through the various discoveries that eventually led to the formulation of plate tectonics theory and the impact that has had on our understanding. Cost: £75.00 by Moodle/Email, or £100.00 by post.

"The geology of the British Isles" is a 13-week course that takes you through the geological history of the British Isles in a logical and structured way from the earliest rocks of the Archaean to the last Ice Age into the modern era. It's a story that is full of unexpected turns that take fragments of continent and ocean floor and weld them to make what we call the British Isles. By the end of this courses you will appreciate why our landscape is so interesting and complex! Cost: £75.00 by Moodle/Email, or £100.00 by post.

Finally, for those of you looking for a beginners' course in geology, we're delighted to be able to inform you that our popular 'Steps towards the rock face' course is now available 'on demand', at any time of the year. It allows you to access the materials at any time for a period of 6 months on our Moodle site, or to receive them in printed form. See below for more details.

"Steps towards the rock face" - our popular course for those new to geology and the Earth sciences. It covers a wide spectrum of basic materials on rocks, minerals and fossils and much more besides. This course has been specifically designed with adult learners in mind. It does not require you to submit homework and you can do it electronically or by post to suit your requirements. Cost: £75.00 by Moodle/Email, or £100.00 by post.

*For further information or to enrol, go to: www.geosupplies.co.uk
Or for more information email: downtoearth@geosupplies.co.uk*

Residential Trips 2019, book now...

Believe it or not, we already have 120 confirmed bookings for our 2019 field trips. That said, there's still room for more!

El Hierro & Tenerife, February 23 - March 2 - a few places
Norway, April 5-14 - enquire about late vacancies
Isle of Jersey, April 20-27
Oban & Colonsay, May 11-19 - sorry fully booked
The Far North of Scotland, May 31 - June 8
Eastern Lakes & Howgill Fells, June 11-16 (New dates)
Southwest Scotland, June 28 - July 6
Peak District Summer School, July 20-27
Southeast Cornwall, September 7-14
Northumberland Coast, September 22-27
Llyn Peninsula, October 12-17
The Hastings Area, October 22-27

Can we tempt you with these selections? Jersey, Channel Isles April 20-27

Come and spend Easter with us on the fabulous Island of Jersey! Come and enjoy a bit of French geology! There's a basement of igneous and metamorphic rocks that date back 2 billion years, along with some more recent sedimentary formations.

The scenery, along with the beaches make for an excellent backdrop to our studies. Add in a good quality, family run hotel, and the hoped for warm weather that is so characteristic of the Channel Isles and we are set for a great week! If you want to join us - make that booking without delay!

Eastern Lakes and Howgill Fells, June 11-16

The title of this trips says it all - you are sandwiched between the Lake District in the west and the Yorkshire Dales in the East and right there in the middle lies our base at Shap Wells and the nearby Howgill Fells.

The Shap Wells Hotel has been welcoming geologist for more than a hundred years, including some of the people who mapped the area. It provides us with the perfect base form which to explore the local area.

Brochures for all these trips can now be viewed on our website: www.geosupplies.co.uk

To obtain a booking form for any of the above trips, please contact us by email: downtoearth@geosupplies.co.uk or telephone us on 0114 2455746



**Become a Club Class
or Club Class Duo
member for 2018**

**CLUB
CLASS**

We are once again offering 'Club Class' for 2018. 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 2018 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 course in 2018 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 or day trips.
- 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 ordering.
- 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 or ring us on: 0114 245 5746

*To book go to: www.geosupplies.co.uk
or ring us on 0114 245 5746*



All of our 2019 residential trips are now on sale!

New venues revealed for the Autumn period!



The unstable cliffs of Lower Cretaceous, Hastings Beds at Hastings

We've now released all of our 2019 programme for you to book with the addition of a Peak District Summer School in July and a great Autumn line up.

September sees us breaking new ground in Southeast Cornwall and on the Northumberland Coast. In October, we're taking in the Hastings area, and the Llyn Peninsula.

Apart from the Summer School, single rooms are limited so early booking is advised. At the moment, we have availability on all trips, but this can change very quickly!

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

Tel: 0114 2455746

Email: downtoearth@geosupplies.co.uk

The complete 2019 field trip programme...

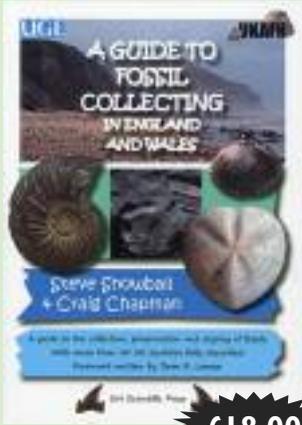
- El Hierro - February 23 - March 2
- Jersey, Channel Islands - April 20-27
- Oban & Colonsay - May 11-19 - sorry full
- The far north of Scotland - May 31- June 8
- Eastern Lakes & Howgill Fells - June 11-16
- Southwest Scotland - June 28 - July 6
- Summer School, Peak District - July 20-27
- Southeast Cornwall - September 7-14
- 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
We look forward to hearing from you!



Featured books August - October

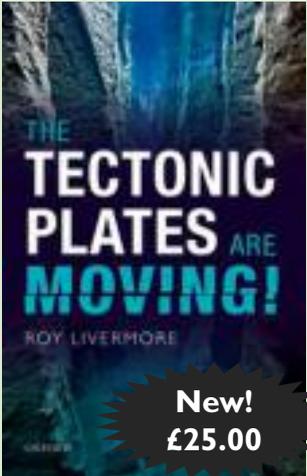
In each issue we are pleased to be able to introduce you to a range of featured books. Where they are being offered at reduced prices, these will be current to the end of the month shown above, provided that stocks are available. Please note, all prices include UK postage.



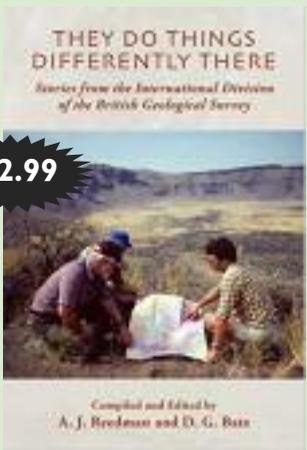
£18.00



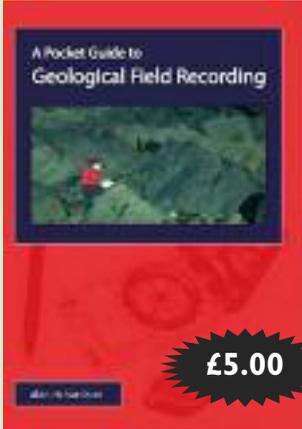
**New!
£20.00**



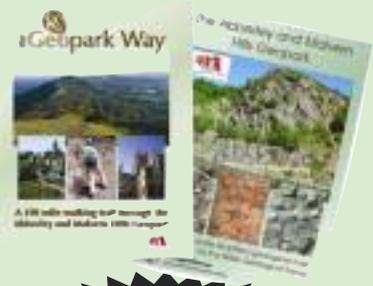
**New!
£25.00**



£12.99

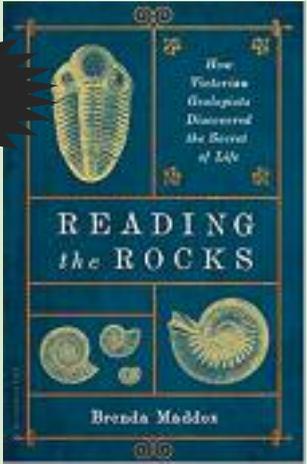


£5.00

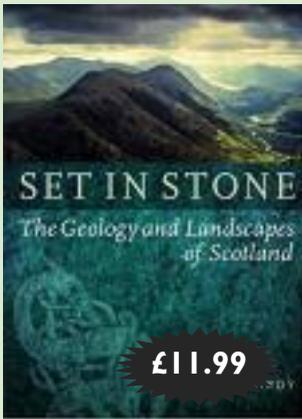


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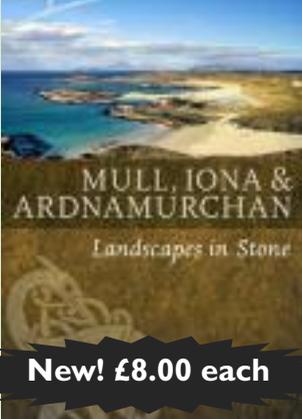
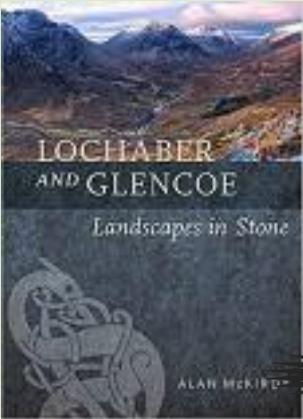
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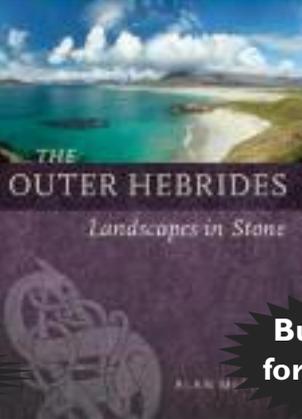
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