



Down to Earth

extra

Issue 74 February 2019

SPOTLIGHT

- New date for Congleton Day School
- Summer School 2019 open for booking
- First 2020 information
- Dinosaur footprint find in East Sussex



*Winter in the Mount Teide National Park on the Canarian island of Tenerife. This is a volcanic neck close to the dormant volcano that is Mount Teide.
(Photo: Chris Darmon)*

From the Editorial team...

As the new year begins in earnest, it's the time that we begin to think about our 2020 field season! There was a time when locations came around every two or three years. Now, however our repertoire of trips both within the UK and abroad is so extensive that the cycle of repeats occurs every four or five years.

Each year, it gets harder and harder to find suitable hotels for our groups. The number of small family hotels is diminishing as every year passes. At the same time the chains of budget hotels such as Travelodge and Premier Inn keep on expanding. Whilst these establishments are fine for individual travellers and families, they aren't ideal for our groups, so our task gets harder and harder.

At the same time as going back to places we've visited before, we also seek out new locations that we hope you will find interesting and with Brexit looming we were keen to continue to sample the geology of other European countries. With this in mind we're looking at the Arouca Geopark in Northern Portugal. If there's anybody out there who has been to this area, please can you get in touch with us?

Other places on the 2020 'bucket list' are: Rum and Eigg, Norway, Raasay and Skye, the Lake District, Pembrokeshire, the Dingle Peninsula of Ireland, Arran, the Shetland Isles, Great Malvern, the Yorkshire Dales and the Wye Valley. For our 2020 Summer School we are looking at the Bristol area. What's so exciting for us is that these islands in particular continue to offer such an amazing array of possibilities for us! All we need now is for you to continue to support us in our efforts on your behalf.

Chris Darmon & Colin Schofield
The Down to Earth extra Editorial team

Take a look at our upcoming Day Schools - now is the time to make that booking!

news update

Were the dinosaurs off to a dino-party or was it a dino-convention in East Sussex?

Scientists from the University of Cambridge, working at a site near Hastings, have discovered what they describe as a 'treasure trove' of dinosaur footprints that include at least 85 individual prints representing at least seven different species. It's the largest such hoard found in Cretaceous rocks anywhere in the UK.

The footprints were identified by University of Cambridge researchers between 2014 and 2018, following periods of coastal erosion along the cliffs near Hastings. Many of the footprints, which range in size from less than 2 cm to over 60 cm across, are so well-preserved that fine detail of skin, scales and claws are easily visible.



The cliffs near Hastings where the footprints were found. (Image: Neil Davies, University of Cambridge)

The footprints date from the Lower Cretaceous period, between 145 and 100 million years ago, with prints from herbivores including from the iguanodontian family, an ankylosaur, an unknown species of stegosaur, possible examples from the sauropod group (which included *Diplodocus* and *Brontosaurus*), as well as meat-eating theropods. The results are reported in the journal *Palaeogeography, Palaeoclimatology, Palaeoecology*.

Over the past 160 years, there have been reports of fossilised dinosaur footprints along the Sussex coast, but no new major discoveries have been described for the past quarter century and the earlier findings were far less varied and detailed than those described in the current research.

The area around Hastings is one of the richest in the UK for dinosaur fossils, including the first known Iguanodon in 1825, and the first confirmed example of fossilised dinosaur brain tissue in 2016. However, trace fossils such as footprints, which can help scientists learn more about the composition of dinosaur communities, are less common in the area. It's usually fossilised bones that make the headlines more than humble trace fossils!

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“Whole body fossils of dinosaurs are incredibly rare,” said Anthony Shillito, a PhD student in Cambridge’s Department of Earth Sciences and the paper’s first author. “Usually you only get small pieces, which don’t tell you a lot about how that dinosaur may have lived. A collection of footprints like this helps you fill in some of the gaps and infer things about which dinosaurs were living in the same place at the same time.”



Footprints this clear are hard to miss! Part of the Sussex treasure trove. (Image: Neil Davies, University of Cambridge)

Anthony and his co-author Neil Davies were naturally interested in why there was such species diversity in the footprints recorded. They conclude that this may have a lot to do with the possibility that there may have been water nearby. Was it perhaps close to the site of a Cretaceous water hole? The fact that fossilised plants and invertebrates have also been found, tend to support that idea that water was close by.

It’s likely that there are many more dinosaur footprints hidden within the eroding sandstone cliffs of East Sussex, but the construction of sea defences in the area to slow or prevent the process of coastal erosion may mean that they remained locked within the rock.

The research was funded by the Natural Environment Research Council (NERC).

Read more at: <https://www.cam.ac.uk/dinotracks>

Cornish Lithium secures additional funding...

Cornish Lithium, a start-up company hoping to lead the development of an industry for the battery metal in the UK, has secured a further £1 million from its existing investors, which will allow the firm to expand its ongoing drilling work in the ancient mining region of Cornwall, in south-west England.

A year ago, the company said it needed about £5 million to develop its project, which aims at extracting lithium from hot water brines below the surface that have welled up in the county’s historic tin and copper mines.



Former mines, such as South Crofty, shown here, could be revived.

The company will also begin exploring for lithium in hard rock form for the first time, having discovered evidence that it was mined in the area during World War II. Lithium bearing veins have been discovered in South Crofty Mine, near Redruth.

Over the past year, the company has expanded and consolidated the areas over which it has rights to explore for lithium and other minerals. The company says its team has assembled a vast amount of historical data and reconstructed this in 3D digital format, enabling a totally new understanding of the geological potential of Cornwall’s mineral deposits.



Show Dates

February 16 & 17 Rock, Gem ‘n’ Bead Show
Pavilions of Harrogate, North Yorkshire

March 2 & 3 Rock, Gem ‘n’ Bead Show
Kempton Park Racecourse, Sunbury on
Thames, Middx.

March 9 & 10 Rock, Gem ‘n’ Bead Show
Exeter Racecourse, Devon

March 16 & 17 Rock, Gem ‘n’ Bead Show
Brighton Racecourse, East Sussex

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>**

Such knowledge includes delineating many of the various mineral ownership structures in Cornwall that have complicated exploration efforts in the past.

“We believe that Cornwall has significant potential as a ‘lithium province’ given the widespread presence of lithium-enriched granites,” chief executive Jeremy Wrathall said in the statement. “It also offers great potential to source many of the metals required for batteries that are becoming crucial in modern technologies.”

Source: www.mining.com

Meanwhile at the other end of England, there’s under a week to show support for West Cumbria Mining...

Public consultation on the West Cumbria Mining’s scheme to produce high quality coal from beneath the sea off Whitehaven is due to end on January 28th. The Company’s website is urging members of the public to show their support ahead of the deadline in a bid to sway the planners.



This is an area with very high unemployment levels and also one with a rich mining heritage in the form of iron, coal and even an anhydrite mine. The original proposals would have made use of the drift from the former Marchon anhydrite mine to gain access to rich seams of anthracite below the sea just offshore from St. Bees. However in the latest planning application this has been abandoned in favour of new tunnels down to the coal, thus avoiding issues surrounding the pumping of old mine water from the Marchon tunnels.

West Cumbria Mining is seeking to mine this coal and transport it by rail to steel plants around the country and to export it to Europe and beyond. There’s a worldwide shortage of anthracite and prices are currently good.

Fossil tree root finally sees the light of day thanks to local volunteers...

Thanks to financial support from Natural England, Museums Sheffield, The Geologist’s Association and the Sheffield Area Geology Trust, a long lost Carboniferous tree root (or a cast of it) has gone on display near to where it was originally found at Middlewood in the northern outskirts of the city.

The story began in 1872 when builders digging the foundations of Middlewood Hospital found the remains of a group of large fossilised tree stumps. They were preserved in hard local sandstone and it was decided that they should be preserved within the fabric of the building. (Your Editor has a vague recollection of visiting them around 40 years ago.)



Local school children examine the information board set up in front of the cast root, at Middlewood in Sheffield.
(Images: Sheffield Area Geology Trust)

In the early 2000s, Middlewood Hospital was demolished and the area was redeveloped as Wadsley Park Village. The tree stumps, which by this time had been given SSSI status, were buried for their own protection and today form a green feature within the village.

The fossils are similar to those found elsewhere in the country, in Glasgow, Manchester and Edinburgh, but are unique in terms of being somewhat earlier in age and being in situ. Whilst the perfect solution would have been for them to be preserved in a building where they could be seen, this is the next best thing. Nothing would have happened, were it not for the efforts of local people in the Sheffield Area Geology Trust. Now everyone can appreciate their local fossil heritage!

37th Annual ESSEX GEM & MINERAL SHOW



Polished ammonite (photo Jeff Seward)

Saturday
23rd February
2019
10am to 4pm

TWO HALLS of: Gemstones, Fossils, Minerals
Jewellery, Books

North Romford Community Centre

Clockhouse Lane, Collier Row, Romford, RM5 3QJ

Free Parking . Refreshments Available

Adults: £2 Accompanied Children: Free

For more information about:

- The Show: the.erm.s.show@gmail.com
- The Society and a map: www.erm.s.org

Organised by:

THE ESSEX ROCK & MINERAL SOCIETY



Winter face-to-face classes have just started!

You can still join any of our classes, you've only missed one week!

Each of our classes are open to all and include people with a wide range of interests, background and geological experience. They are also friendly, welcoming and informal.

All the classes will be studying the same subject material, under the title "World Geological Adventures". We'll be examining the geology of places as diverse as Iceland, New Zealand, The Grand Canyon and The Canary Islands. The classes will include video material as well as some hands on work with specimens. Everyone is encouraged to also enrol on the distance learning course that will be running concurrently. Access to the online course is available for a nominal fee to anyone who enrolls on the face-to-face class.

This course is already proving to be popular and we've several new learners at our classes!

Sheffield Classes

Southwest Sheffield: Totley Rise Methodist Church, commencing Monday January 21st 2.30-4.30

North Sheffield: The Commercial, Station Road, Chapeltown, commencing Thursday January 17th 10.-15 - 12.15

Chesterfield Classes

Newbold Village: Eyre Chapel, commencing Thursday January 17th 2.00 - 4.00

The class fee is £65.00 for 10-weeks, or £8.00 per session.

To enrol go to: www.geosupplies.co.uk and enter the online shop or ring us on: 0114 245 5746

Winter Day Schools

A reminder of our programme of Winter Day Schools. Several are close to being fully booked! There's also an additional course since we last told you - in Congleton, see February 8th. REVISED DATE

These courses normally run from 11.00 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.

Saturday, January 26

St Pancras YHA, Euston Road, Central London

"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. **£45.00 including lunch.**

Saturday, February 2

Commercial Union building in central Newcastle upon Tyne

"Fossils for everyone" - a great mixture of practical hands on with specimens and some real fossils, some great images and also some sound basic teaching. Fossils aren't just for the super keen palaeontologist, they are for everyone!
£25.00 including light refreshments

Wednesday, February 6

Lapworth Museum, University of Birmingham

"All the time in the world" - a look at the vast expanse of geological time. How do we know the age of rocks? How is time divided up? Who were the people behind geological time?
£20.00 including light refreshments.

Friday, February 8 REVISED DATE

Chappell Centre, Congleton, Cheshire

"Every picture tells a geological story" - our popular hands on session with geological pictures and specimens. They all tell a story and the fun is interpreting them and matching the specimens and pictures. Suitable for all. **£35.00 including lunch**



*Devizes
Conservative
Club
Wednesday,*

February 20

Conservative Club, Devizes, Wiltshire

"Geological Jigsaws" - our brand new fun day comes to Wiltshire - join in the fun of our latest mind-bending exercise involving specimens, pictures and a map, all designed to stretch your knowledge! **£35.00 including lunch buffet.**

Saturday, March 9

The Commercial, Chapeltown, Sheffield

"Every picture tells a geological story 2" - a repeat of our popular day school, using 30 brand new images, accompanied by some super specimens. This is always good fun as you seek to match up the specimens to the images. Some are easy but others will stretch you!
£35.00 including a 'Commie' buffet lunch.

Wednesday, March 13

Lea Valley YHA, Cheshunt, Hertfordshire

"All the time in the world" - takes a long look at geological time and how we divide it up, through the medium of selected geological locations, specimens and maps. We'll also learn about some of the pioneers of our subject. **£35.00 including lunch.**

Saturday, March 23

The Bridges Centre, Monmouth

"Every picture tells a geological story" - our popular hands on session with geological pictures and specimens. They all tell a story and the fun is interpreting them and matching the specimens and pictures. Suitable for all. **£35.00 including lunch.**

To book for any Day School go to: www.geosupplies.co.uk or ring us on: 0114 245 5746

Day Schools take a break now until the Autumn of 2019. We'll be revealing our programme of day trips for the intervening period in our March issue of Down to Earth extra.

We hope to see you on one of our events soon!

Distance learning courses - you can still enrol!

We have just begun our brand new course entitled "World Geological Adventures" - 10 great geological stories.

We'll also be offering the following courses: "How the Earth works" and "Time Traveller's Britain: Part 1" as supported self study course on Moodle, our easy to access learning platform.

"World Geological Adventures" - 10 great geological stories is a 10-week course that will take a look at some of the world's finest geology. It begins with a look at Iceland and how our interpretation has radically changed in the last few years. Also covered are: The Channel Isles, The Himalayas, fabulous fossils from China, Cyprus, The Grand Canyon, The Rockies and Montserrat.

Cost: £75.00 by Moodle/Email or £100.00 by post.

"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.

"Time Traveller's Britain Part 1" is a 10-week course that takes a close look at some of the British Isles most treasured bits of geology, along with some of the giants of Earth science. Included in Part 1 of the course are: James Hutton, The Isle of Raasay, Mary Anning, the Highland Controversy, Roderick Murchison and County Antrim.

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.

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

We've still got some great locations available for 2019 field trips...

Spend Easter in 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 from which to explore the local area.

Summer School, Derbyshire Peak District, July 20-27

For our third annual Summer School we're heading for Britain's first National Peak in the beautiful Peak District of Derbyshire. Our base, in the village of Calver, is Cliff College where we will be well looked after in en suite single (and a few twin) rooms. During a packed week we'll be taking in a superb limestone cavern in Buxton, an ancient copper mine in the Manifold Valley and a world heritage bone cave in Nottinghamshire - just to name a few! We'll also have a programme of indoor talks and activities for the evenings, as well as a choice of field excursions on several days. Now all we need is for YOU to make a booking!



Mam Tor in the heart of the Peak District National Park.

The Northumberland Coast, September 22-27

Come and join us as we visit a new section of the Northumberland Coast, this time the section from Seahouses down to Sunderland. You'll be able to see fine sections in the Great Whin Sill as well as sedimentary rocks from the Carboniferous and the Permian. This is an area where you can come to expect the unexpected as we take you to see some excellent rocks and some fine structures. Top of the list are the cannonball limestones of Seaham, where there will definitely be more questions than answers!

The beautiful Llyn Peninsula, October 11-16

The remote Llyn Peninsula sits between Anglesey in the west and Snowdonia in the east, but its geology is different to both places. Come and enjoy great Welsh hospitality and excellent rocks and scenery. We can offer you serpentines, basalt pillow lavas, granodiorites as well as slates and some really exotic rocks, the like of which you may not have seen before! All of this on a fine stretch of coastline that's completely unspoilt. This trip is already proving to be popular, so book up early so you're not disappointed.

We do still have a couple of places in twin rooms where the person is seeking to share with another person - see the next page for details.

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



All of our 2019 residential trips are now on sale!

Twin room shares and singles available!

The beauty and tranquility that is the Llyn Peninsula of North Wales.

We have availability for people willing to share a twin bedded room on some of our trips. This can be helpful for single people. We'll put you in touch with the other person ahead of the trip. We've also got a couple of trips where there are still some single room vacancies.

Single vacancies on: Summer School, Llyn Peninsula, Southeast Cornwall.

Twin share available on: Eastern Lakes (male), Far North of Scotland (male), Southwest Scotland (male & female).

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 - sorry full
- 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 11-16
- 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!

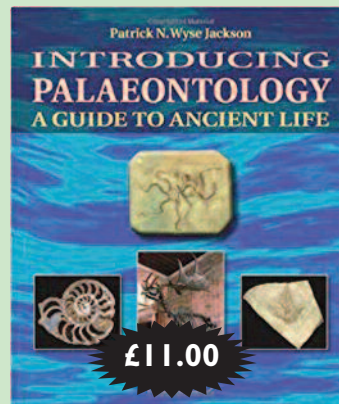
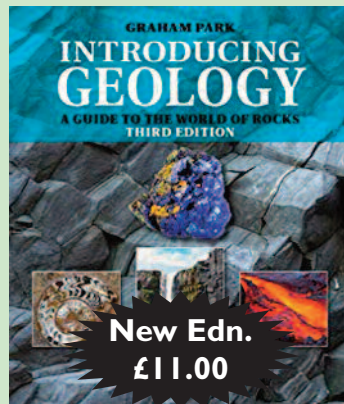
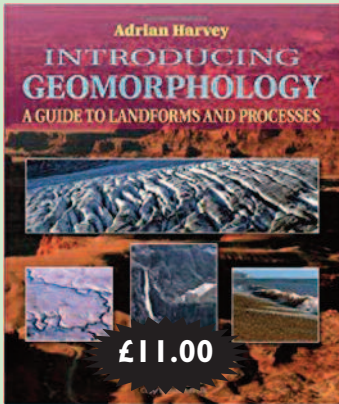


Featured books February - April

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 April 2019, provided that stocks are available. Please note, all prices include UK postage.

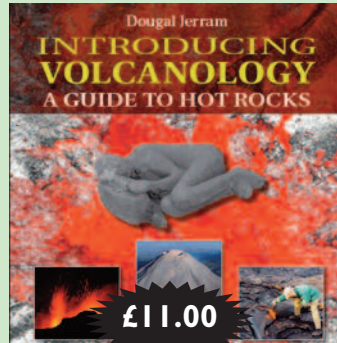
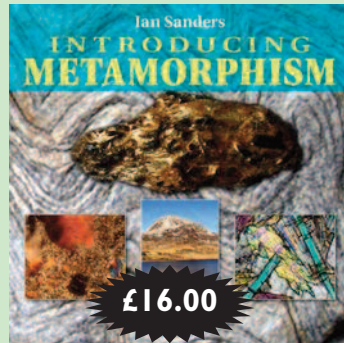
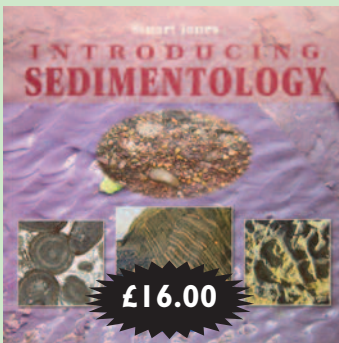
We're focussing exclusively on the excellent Earth Science books published by Dunedin. Enjoy these special prices for a limited period of time!

The foundations...



Buy all 3 titles for £29.00

Introducing rocks...



Buy all 3 titles for £38.00

Not forgetting...



Buy all 3 titles for £42.00

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