



# Down to Earth *extra*

Issue 93 September 2020

## NEWS FLASH!

- Zoom into Autumn with a virtual course!
- Join us on a day trip this Autumn!
- Virtual Day Schools are coming to your home!
- Two Autumn residential field trips to choose from!
- 2021 Residential Field Trips are open & taking bookings!

*In times to come we can hopefully look back at 2020 and say that this was a low point for opportunities to see real field geology in the UK. This was my first look at rocks in the field, on Wednesday, August 19th. I'd like to say that the sun shone, but that would be a lie!*

*This is Permian dolomite in a mile-long cutting in the former LMS railway at Clowne in Derbyshire. The rocks are both faulted and jointed with the latter now solution pipes. (Photo: Chris Darmon)*

## From the Editor...

The cool and wet weather we are currently enduring, is a reminder, if we needed one, that Summer is almost at an end September sees the arrival of Autumn. It's traditionally a season that sees pupils returning to schools and colleges and students embarking on university courses.

But for the class of 2020 the educational experience isn't going to be like any that has gone before. School pupils being taught in 'year bubbles' with staggered start times and for university students, much of their time being taught online, For students of geology there won't be any fieldwork, at least in semester 1, and little or no practical laboratory sessions.

As for those of you for whom formal education is but a distant memory, things may have ground to a halt, or they may have gone off in new, and sometimes quite exciting, new directions! Many of us have discovered Zoom or Teams and have mastered the art (or is it the science) of the virtual meeting. As someone who has recently held a virtual summer school for 40 people, it can be very rewarding and enjoyable. At times, it can be frustrating, but if you stick with it, it can soon feel quite 'normal',

With my colleague now partially back from furlough, your editorial team is once again back to full strength. We are ready to deliver more online courses this Autumn. At the same time we are beginning to offer a couple of 'real' field courses, in places where we can offer social distancing of course and without the customary minibus!

May we encourage you this Autumn to take up some of the many offers that are available out there, both real and virtual, but stay safe!

*Chris Darmon & Colin Schofield*  
The Down to Earth editorial team

**See pages 7 & 8 for details of our Autumn events, both real and virtual!**



## news update

### Government supports Cornish mining venture pilot scheme...

*If you saw Countryfile on BBC1 on August 23rd., you'd have seen reference to the Cornish Lithium Project that has featured before in these pages. It seems that the project is moving ahead with more support announced from Government.*

*This is from the Cornish Lithium website:*

A £4 million project in southwest England has secured funding to help pilot the extraction of lithium for use in technologies such as electric vehicles and batteries.

In a statement earlier this week, (August 5) Cornish Lithium said the new funding would be used to support the construction of "Europe's first geothermal lithium recovery pilot plant." The amount of investment has not been disclosed.

Over the years, lithium has become an increasingly important cog in modern life: lithium-ion batteries, for example, are used in everything from laptops and cellphones to electric cars.

According to the British Geological Survey's Centre for Sustainable Mineral Development, MineralsUK, it can be extracted from two key types of deposits: minerals and brines. The methods used to extract lithium can range from the mining of hard rock deposits to, in the case of brines, pumping from wells.

Cornish Lithium's work is centred around the extraction of lithium from geothermal brines. It said its project would be trialling Direct



*Drill rig on site at the Cornish Lithium Project.*

Lithium Extraction, or DLE, technology and "its suitability to extract lithium from Cornish geothermal waters."

The company added that the "optimal DLE technology for Cornish waters" was still being selected, but said that "the processes being considered utilise technologies, such as nanofiltration, to selectively remove lithium compounds from the water, rather than relying on

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evaporation and other less environmentally friendly methods.”

The scheme is a collaboration with Geothermal Engineering, a company developing geothermal facilities in the county of Cornwall. It will be located at the United Downs Deep Geothermal Project near the town of Redruth.

Described by the U.S. Department of Energy as a “vital, clean energy resource,” geothermal energy refers to underground heat which can be used to produce renewable energy. The DOE adds that geothermal energy “supplies renewable power around the clock and emits little or no greenhouse gases.”

The funding for the Cornish project comes from a larger £14.3 million pot of cash provided to the Cornwall and Isles of Scilly Local Enterprise Partnership from the U.K. government’s Getting Building Fund, a £900 million initiative focused on job creation and the development of infrastructure and skills.

Famed for its beautiful coastline and picturesque scenery, Cornwall was once home to a large number of mines extracting materials such as tin and copper. The county’s last mine shut in 1998.

Cornish Lithium is not the only company looking to extract lithium in Cornwall. Another firm, British Lithium, drilled six “exploration holes” in the area around St Austell last year.

The CEO of Cornish Lithium, Jeremy Wrathall, said the newly announced funding would “significantly accelerate our work to demonstrate that lithium can be produced in a sustainable, zero-carbon manner and will enable us to fast-track similar projects in other locations across Cornwall once the plant has been completed.”

“We believe that Cornwall has the potential to become the ‘battery metals hub’ for the U.K., thus continuing a 4,000-year history of metal production and industrial innovation.”

*This is clearly considered to be ‘a runner’ by Government, but there’s still a long way to go for this to become reality. - Editor*

### Palaeontologist ‘stumbles’ across dinosaur bone on the beach of Scottish island...

The tiny island of Eigg lies in the Inner Hebrides and is most famous for a fine geological feature known as the Sgurr. This prominent edifice is a Tertiary pitchstone lava, but it has another geological claim to fame that goes back almost to the dawn of people studying geology



*This is the actual bone that was found on a beach in Eigg. (Image: Elsa Panciroli)*

in Scotland. It was here in 1844 that the Rev. Hugh Miller found a plesiosaur bone in the Jurassic strata.

Fast forward to 2020 and palaeontologist, Dr. Elsa Panciroli is running to meet up with her research team on Eigg and she literally tumbles over a dinosaur bone buried on the beach!

The bone is some 50cm long limb bone from a creature that was something like Stegosaurus. The rocks of Eigg are assigned to the Middle Jurassic and rocks of similar age on Skye have yielded rare bones and footprints from several dinosaurs, but they have never been found on Eigg previously.

Dr Panciroli, who works at National Museums Scotland, said: "It was a bit of a serendipitous discovery. It was the near the end of the day and I was running to catch up with the rest of the members of the team, who were quite far away.

I realised I had run over something that didn't look right. It wasn't clear exactly what kind of animal it belonged to at the time, but there was no doubt it was a dinosaur bone."



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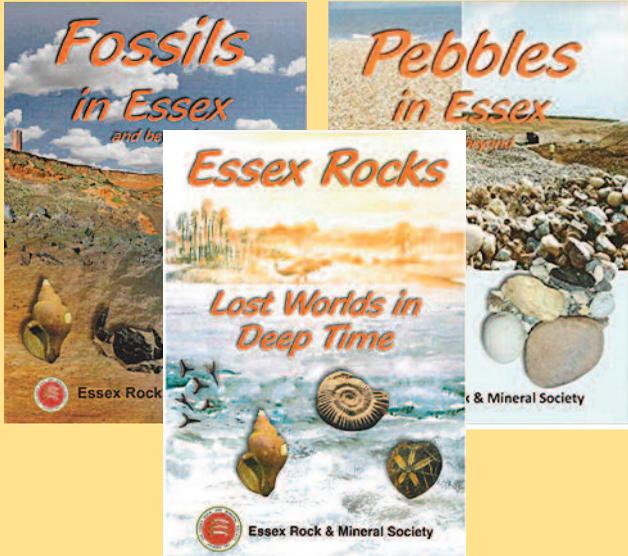
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Calcite with chalcopryite  
Cloud Hill Quarry  
Leicestershire

### And now there are three Essex posters...



The lovely people at Essex Rock & Mineral Society have now published another excellent fold out poster, This time it covers Essex Fossils. **Buy one of each for £7.00 including postage.**



**Palaeontologist Dr. Elsa Panciroli who found the dinosaur bone.**  
(Image: Steve Brusatte)

She said it was "hugely significant" find, adding: "Globally, Middle Jurassic fossils are rare and until now the only dinosaur fossils found in Scotland were on the Isle of Skye. This bone is 166 million years old and provides us with evidence that stegosaurus were living in Scotland at this time."

Dr Steve Brusatte, a palaeontologist at the University of Edinburgh, said: "Elsa's discovery of this bone is really remarkable. This fossil is additional evidence that plate-backed stegosaurus used to roam Scotland, which corroborates footprints from the Isle of Skye that we identified as being made by a stegosaurus."



**The bone after it was excavated and transported to the National Museum of Scotland in Edinburgh.** (Image: N Larkin)

This find will encourage more people to study the Jurassic of this and other parts of the Inner Hebrides, to help build up a more comprehensive picture of the area during the Jurassic.

## Landslide identified as primary cause of fatal train derailment near Stonehaven in Scotland...

The 06.38 Scotrail train from Aberdeen to Glasgow derailed on a landslip just south of Stonehaven during bad weather on August 12th. It was the first fatality of a passenger on a British train for more than 13 years and the first fatal derailment caused by a landslide for more than 50 years.

The crash claimed the lives of the train driver and conductor and a passenger. Due to the partial lockdown then in force in Aberdeen, there were only a total of 9 people on the train. At the time of the accident, there had been torrential rain in the area for several hours with some 52mm recorded in the preceding hours.

Aside from the normal specific accident investigation, the UK Transport Secretary, Grant Shapps has also commissioned separate reports. Experts had been asked to improve the understanding and response to severe weather, and better manage its earthworks portfolio.

At the time of writing, the investigation on the ground is still ongoing. After that is complete the wreckage has to be recovered and then the infrastructure, including a bridge parapet have to be repaired and rebuilt. The line, which is part of the main line from Kings Cross, is expected to be closed for at least another two weeks. There are big engineering problems in accessing the site and particularly recovering the carriages and locomotives of the train. These will have to be moved for further investigations to take place.

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Understanding The Earth



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## **Field Trips for this Autumn**



**There's room for YOU in this picture! This is a dramatic aerial view of the Malvern Hills. We'll be there in October of this year.**

**We are continuing to take small steps towards bringing our field trip programme back to something like normal. This Autumn there will be two short residentials and a selection of day trips.**

**These will be small groups and we will not be offering the usual shared minibus. Daily activities will be close to our base allowing use of cars or public transport.**

**We welcome anyone to join us, but if you want to join either of the residentials, please contact us NOW. You can be assured that all monies paid are securely held in a client account. In the event that a trip is cancelled, full refunds are available in a timely fashion.**

**To view a brochure, go to our website at: [www.geosupplies.co.uk](http://www.geosupplies.co.uk) or Tel: 0114 245 5746**

**Booking forms are only available direct from us. Email: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk)**

## **Here's the complete Autumn 2020 field trip programme...**

**September 27 - October 1  
Wye Valley & Forest of Dean  
4-nights £525.00  
Why not come and join us for a day?**

**October 23-28  
The Malvern Hills  
5-nights £650.00  
Why not come and join us for a day in Malvern or Ledbury?**

**October 10  
Day Trip to Mountsorrel, Leicestershire**

**Further details can be found on page 7 of this issue of DtoE extra. Hope to see you soon!**

*As we head into Autumn the geological world is beginning to open up. Some organisations are holding virtual meetings by Zoom, whilst others are beginning to venture out into the real world!*

*If you tell us, we'll try to communicate your events to a wider audience. Email: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk)*

### Down to Earth to resume printing in November

It is our intention to resume printed copies of *Down to Earth* magazine with effect from the November issue. That is, of course, assuming that there are no major changes to the domestic situation with regard to Covid-19.

*We know that some geological clubs and societies may wish to still have electronic copies either instead of or in addition to printed copies. For this to happen, you MUST let us know with the email they are to be sent to. Email: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk)*

### News of national events...

**Bakewell Rock Exchange** - This popular event, normally held during October at Lady Manners School in Bakewell, Derbyshire has been postponed.

The following message is taken from the Rock Exchange website:

“As the venue would not comply with government safety guidelines we shall have to cancel this year’s fair. Next year, 2021, the fair will be held on the 9th and 10th of October.”

**Geologists’ Association Festival of Geology** - This annual event, normally held at University College London during the first weekend of November is going virtual for 2020.

*The GA Festival is FREE and open to people across the UK (and even abroad). The main day is Saturday, November 7th, with field trips on Sunday 8th. (see poster opposite for more details) or go to: [www.festivalofgeology.org.uk](http://www.festivalofgeology.org.uk)*

### Museums begin to open up...

**The Etches Collection, Kimmeridge, Dorset** - This excellent museum which featuring the fabulous fossils of Steve Etches, is now open again and has the ‘good to go’ kite mark. It’s open 10.00 - 5.00 daily and there’s no need to pre-book.

**Sheffield Museum, Western Park** - The Museum is open but hours are reduced and pre-booking is essential.

To find out more go to:

<https://www.museums-sheffield.org.uk/museums/weston-park/planning-a-visit/>



*Meet Spike, Western Park’s very own woolly rhinoceros. He’s getting into the swing of Covid-19 by wearing his own Coronavirus face mask, made for him by museum staff!*



**ROCKWATCH**  
SATURDAY 7<sup>TH</sup> NOVEMBER  
From 10:30 am

**VIRTUAL FESTIVAL OF GEOLOGY**

Enjoy the **FREE** virtual Festival of Geology from the comfort of your home

Join us at [www.festivalofgeology.org.uk](http://www.festivalofgeology.org.uk)

**SATURDAY 7<sup>TH</sup> ACTIVITIES**

- An exciting virtual Discovery Room featuring live workshops, experiments, downloads and the Passport Challenge!
- Discover cutting edge Earth Science by joining in with the live talks held throughout the day.
- Uncover hidden gems in the vendors’ and traders’ stalls.
- Explore the exhibits and festival activities from societies, universities and museums from all across the UK.

**SUNDAY 8<sup>TH</sup> ACTIVITIES**

Come along to a real Festival Field Trip or enjoy a virtual field trip from the comfort of your sofa.

Background Image credit: Graham Bull

### Down to Earth readers welcome!

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## Taking our first steps out in the field again...

We welcome you back to fieldwork with a small number of day trips during this Autumn. Trips are limited to small numbers, and everyone will be required to adhere to social distancing measures. Please make your booking as soon as possible.

**Tuesday, September 29**

### Forest of Dean, Glos.

Join us for a day in the Forest of Dean. This is an area of beautiful scenery and superb geology. It's mainly Carboniferous and Devonian geology, with many sites of interest.

*Meeting point: Lydney railway station at 10.00 Cost £10.00*

**Saturday, October 10**

### Mountsorrel Heritage Centre, Leicestershire

Tarmac operate one of the country's largest granite quarries at Mountsorrel on the edge of Charnwood Forest. However this isn't a Precambrian rock and it isn't strictly speaking granite! We begin here and then go on to other Charnwood sites.

*Meeting: Mountsorrel Heritage centre at 10.30 Cost £10.00*

**Sunday, October 26**

### The Malvern Hills

Come and join us for a day as we take a look at the varied Malvernian rocks of the Precambrian. This will be a day spent getting up close and personal with these rocks.

*Meeting: Malvern Hills Geocentre The Wytch at 10.00 Cost £10.00*

**Tuesday, October 28**

### Rocks and scenery around Ledbury

For this day we'll be taking in some of the Silurian strata around Ledbury as well as casting our eye over the landscape in search of the clues that indicate the course of meltwaters from the Quaternary.

*Meeting: Ledbury railway station at 10.30 Cost £10.00*

## Why not join us on a residential?

*The venues we have chosen offer safe and Covid secure accommodation and we will not be using a minibus on any of these trips. Instead we have chosen places where the geology is either close by or can be accessed easily by car or public transport.*

**September 27-31 (4-nights) £525.00 (£650.00 single)**

### The Wye Valley & Forest of Dean

Based in the small Welsh town of Cheston this trip will allow us to explore the local Devonian and Carboniferous geology. There are great local spots such as Symonds Yat and also a former iron mine at Clearwell Caves, and a working colliery.

**October 23-28 (5-nights) £650.00 (£750.00 single)**

### The Malvern Hills

The Malvern Hills give us some of the best landscape in England, rising as they do around 300 metres from the Midland Plain. Great geology is literally a short walk away from our base in this Victorian spa town.

*Contact us NOW at: [downtoearth@geosupplies.co.uk](mailto:downtoearth@geosupplies.co.uk) for all these trips or ring us on: 0114 245 5746*

## Zoom into a virtual Autumn with one of our distance learning courses...

*Building on the success of our Virtual Summer School that saw almost 40 people taking part in an exciting week, we're offering 'more of the same' this Autumn!*

*You can choose from:*

### Where there's muck - the economic geology of the British Isles

This is Part 1 of a course that will continue into the new year. This Autumn there's 8-weeks that will look at topics including Metal mining in Southwest of England, Iron mining around Britain, a failed Wolfram mine in the Lake District and mining in the Peak District.

### Time Traveller's Britain Special Edition - the best of British!

In this course we've chosen 10 of our best geological areas to tell their story. Including: the Lake District, beneath London, East Anglia, the Isle of Raasay, the English Riviera and the Lizard.

### World Geology - the pick of the geology from far and wide!

In this course we bring you 10 well chosen areas from around the world and present their geology in a vivid and dynamic way. Including: Iceland, New Zealand, the Rockies, the Grand Canyon and fossil discoveries from China.

*Have these courses your way! You can have them electronically, by email or Moodle or you can have printed sheets sent by mail.*

*Everyone is invited to a weekly live Zoom meeting for a presentation. Courses begin week beginning September 21st.*

*Each of these courses costs £40.00 per person electronically, or £60.00 if you'd like printed materials. If you are studying jointly as a couple the cost is just £20.00 extra.*

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

## Join us at a Virtual Day School this Autumn

*We're replacing our usual Autumn programme of Day Schools that we run around the country with virtual events that we are holding in your home! They take place on Wednesdays throughout the Autumn and are suitable for all! Each will cover the chosen topic in a lively and interesting way and will give you the opportunity to study further at home. Your day begins around 10.00 and ends around 4.00 with live Zoom meetings.*

**September 23**

**The Geology of the British Isles in a Day**

**October 14**

**Metamorphism and metamorphic rocks**

**November 4**

**The ups and downs of the fossil record**

**November 25**

**How the Earth works - plate tectonics**

**December 16**

**Pioneers of geology - Christmas special**

*Virtual Day Schools cost £20.00 each or you can enrol on all 5 for just £80.00. If you'd like printed papers for each they are £5.00 extra. For further details go to: [www.geosupplies.co.uk](http://www.geosupplies.co.uk) (Booking can be done through our online shop)*



## **Zoom into a virtual Autumn with one of our courses...**

Following the success of our Virtual Summer School, we're combining good old fashioned teaching with the latest in easy-to-use Zoom technology to bring you an exciting Autumn!

There's three 10-week courses to choose from:-

- **Where there's muck - the economic geology of the UK**
- **Time Traveller's Britain, Special Edition - the best of British!**
- **World Geology - the pick of the best geology from far and wide!**

All these courses are offered at the bargain price of £40.00 by email with access to Moodle or £60.00 with printed sheets sent by post. All courses give the opportunity to join live weekly Zoom meetings at no extra cost.

## **Join a Virtual Day School this Autumn!**

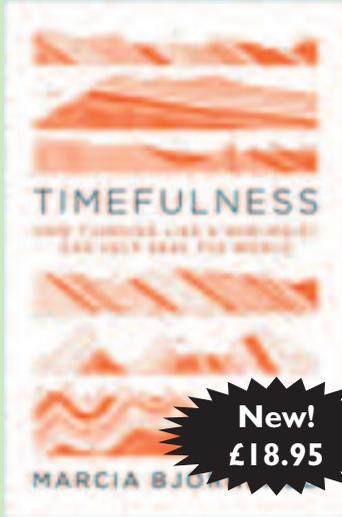
During Autumn and Winter we normally go 'out on the road' and deliver Day Schools around the country. This year Wednesday Virtual Day Schools are coming to your home, at the bargain price of £20.00!

- **The Geology of the British Isles in a day (September 23)**
- **Metamorphism & metamorphic rocks (October 14)**
- **The ups and downs of the fossil record (November 4)**
- **How the Earth works - plate tectonics (November 25)**
- **The pioneers of geology - a Christmas special (December 16)**

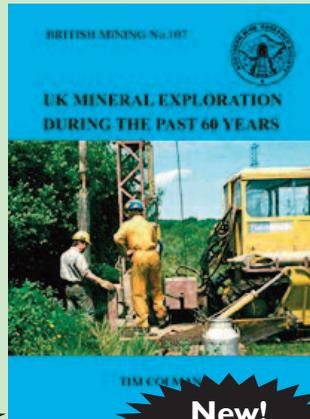


# Featured books August - October

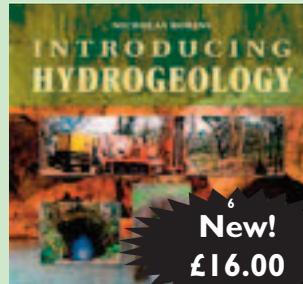
In each issue we are pleased to be able to introduce you to a range of featured books. Where they are being offered at reduced prices, these will be current to the end of the month shown above, provided that stocks are available. Please note, all prices include UK postage.



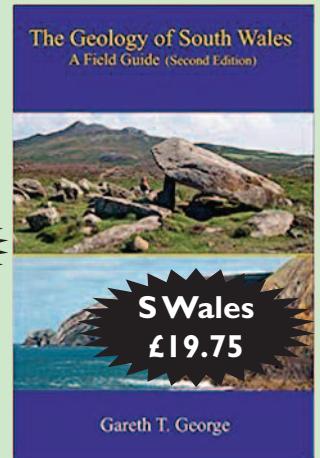
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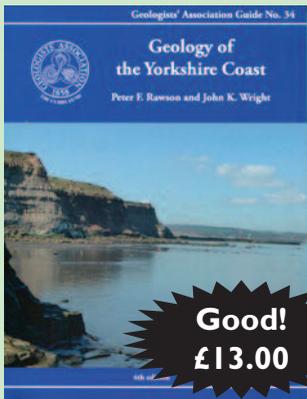
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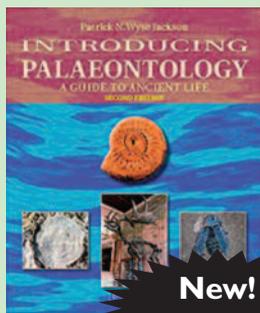
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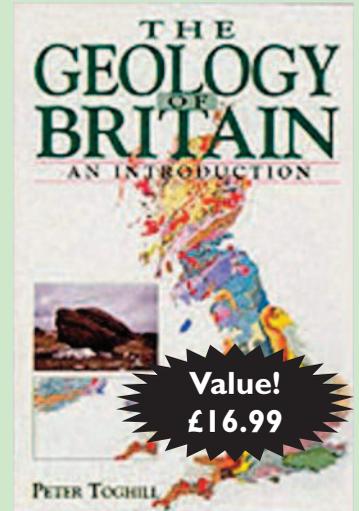
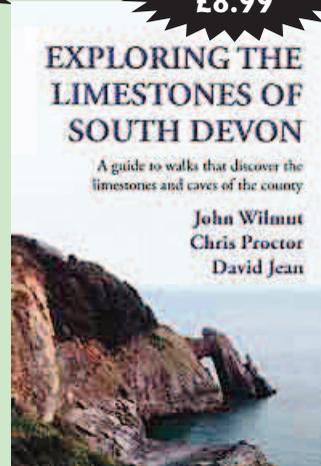
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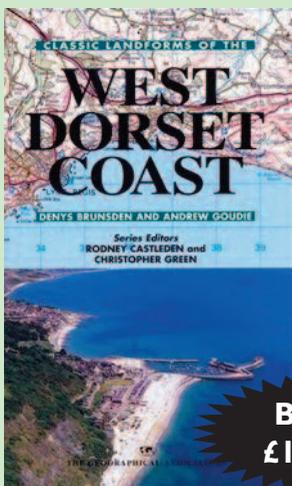
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£13.00



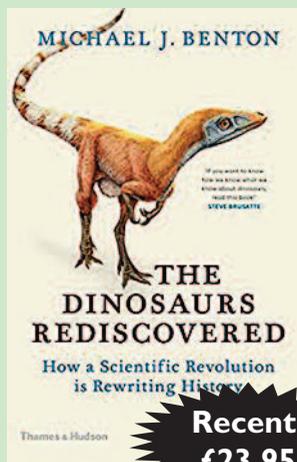
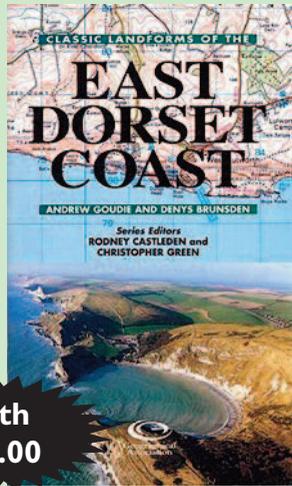
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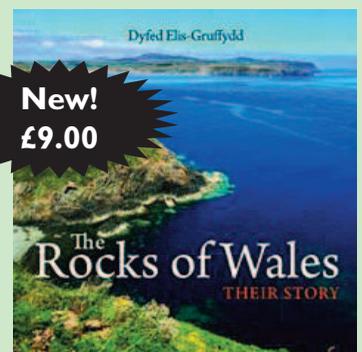
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