GEOconservationNEWSletter

Summer 2021 issue

Looking to the late summer and those...

Welcome to the second of the three GCUK newsletters planned for this year. With the pandemic restrictions beginning to be eased the summer promises much for fieldwork and in-person meetings; a more welcome diet of activities than those generally reported herein - for which my grateful thanks to the many contributors who heeded the copy deadline.

For many member groups virtual committee meetings and zoom lectures have been the only way of keeping in touch with, and supporting, the membership from this spring through to summer. Of course, there has also been the GCUK Facebook Group; although this was nominally restricted to member groups' committee members it is due to be opened up to the wider membership by autumn.

All of us must be looking forward to getting on-site in working parties doing that very necessary scrub clearance and site monitoring work. Undoubtedly, even the limited opportunities this summer for us to showcase the UK's geoheritage, that we do so much protect and conserve, will be rewarding. Let's face it, it will just feel so good to be out there with friends and colleagues doing what we enjoy and in such much missed like-minded company! Do share this newsletter and encourage your members to send in articles for publication in the next one. *Tom Hose*

A News Catch Up from the Beds Geology Group

Last year started out positively, as for many other groups, with Bedfordshire Geology Group hosting a talk given by Dr Haydon Bailey about the impacts of HS2 and the Chilterns. Unfortunately, the Covid-19 pandemic then stopped a lot of the normal group events that are carried out across Bedfordshire, where people can share their geological interests and any finds they have uncovered.

Over the past year, we have had several enquiries via email for identification of various rocks and fossils discovered by people across Bedfordshire. These include an unusual pebble found along the banks of the River Ouse near Turvey and several items collected at Wrest Park which included the broken-off end of a belemnite, what could be a septarian nodule that had been cut in half, and probable limestone corals, along with a loom-weight carved from sandstone.

We also had an enquiry about some shells discovered near Kempston; the enquirer wondered if they were Jurassic shells, but they were freshwater mussels - that is, Swan Mussels much loved as a food source for birds like gulls and oystercatchers, but also for otters. If water levels nearby have dropped and, judging by the cracked mud in the photo received, it had, this exposes the mussels to hungry birds - accounting for the number of opened shells. They can only survive in clean water and, at Harrold, they thrive in the lakes. Incidentally, Swan Mussels sometimes have pearls in them!

Another find of interest was a piece of 'obsidian' found in Chicksands Woods, which turned out to be a piece of glass slag and a probable by-product of metal working.

An unusually large stone was discovered by a member on a walk near Steppingley which seemed out of place; it's probably Totternhoe Stone, a possible glacial erratic.

Bedfordshire's geology, however, was still being highlighted through work with Greensand Country Landscape Partnership which continued throughout 2020. A booklet entitled *"Earth Heritage of Greensand Country"* was produced and printed. It is available to download from the Bedfordshire Geology Group website and was distributed during the Greensand Country Festival in May 2021. The last details of the Western Geotrail were completed before the restrictions were enforced and a leaflet printed in the Spring. Plans to showcase this final geotrail of a series of three across Greensand **C**ountry were halted due to the pandemic restrictions but will be revived in the Summer of 2021. Another addition to the work under the Greensand Country Landscape Partnership umbrella was the development of new EarthCaches. This work carried out by Deb Badgery, a keen geocacher in the county, led to three new EarthCaches across Greensand Country.

Once restrictions were lifted in June 2020, Derek Turner, Secretary of the Bedfordshire Geology Group, along with Acting Chair and Local Geological Sites Manager, Anne Williams, led a socially-distanced walk in Barton Hills *(see below)*. About a dozen members

enjoyed the guided walk discussing the dry valleys and the chalk hills landscape.

Another Summer 2020 event was held in August when a small group of six were taken around Broom Quarry (South) to examine the gravel extraction works *(see below)* There were many reject piles to explore for fossils

and amongst those discovered where 'Devil's Toenails' (*Gryphaea*) and other bivalves, plus some trace fossils preserved as flint nodules. A selection of interesting gravel pieces was retrieved for addition to the ever-growing educational collection held by us.

During the autumn and winter of 2020 when restrictions were once again in place, Bev Fowlston ran a series of virtual get-togethers via Zoom. Some of the subjects discussed included the Leighton Buzzard earthquake, which was the highlight of the year, geologically! The 3.5 magnitude earthquake made headline news across the country.

Most reports were from towns, villages, and hamlets in the counties of Milton Keynes, Bedford, Central Bedfordshire, Luton, Buckinghamshire, and Hertfordshire and all from within 25 km of the epicentre. Typical reports describe, *"the house had one dramatic shake"*, *"all the windows rattled"*, *"there was a heavy vibration"*, *"felt like the whole house was shaking"* and *"it was like a large explosion"*. There is relatively little significant historical seismicity in Bedfordshire but an earthquake with a magnitude of 2.0 was recorded near Dunstable in 2010 and an event with a magnitude 2.2 occurred near Brackley, 30 km west of Leighton Buzzard, on 4th January 2020. Neither were felt by locals. The closest similar magnitude event, 3.4, was near Oxford in 1764 and was widely felt and recorded.

In October 2020, a new outcrop of the Woburn Sands Formation sandstone was discovered at Rushmere Country Park. The site was exposed by a small working party *(see next column, top:- L-R: Glynda Easterbrook, Bev Fowlston, Bernard Jones, Tony Baker, Janet Baker)* in June of 2021. It is a new unique feature of Bedfordshire's interesting geology.

At the end of the 2020 we became involved in a new and interesting project with The Geology Trusts and

Natural England. The Group were contracted to work on condition monitoring of several geological Sites of Special Scientific Interest (SSSI) across East Anglia but, due to Government restrictions, this had to be postponed until 2021. The project ended in March with nine SSSIs across Bedfordshire, Cambridgeshire and Hertfordshire being monitored, and their condition reported to NE via The Geology Trusts. We hope to receive more work of this nature in the future.

Since restrictions have begun to lift we have started to plan our events for 2021. We are very excited to be holding an Award Celebration in July at which the Group are being awarded a Certificate of Excellence for Geological Education *(see right)* by The Geologists' Association's Curry Fund; this was for our Greensand Project and a big thanks to every one of our members who helped bring this massive project to fruition.

We will be following this event by holding a members' talk evening with Paul Hawkes explaining *'The Structural and Stratigraphic Evolution of the Wessex Basin, Southern England'*. This will be followed by our Annual General Meeting; at this we hope to attract new committee members as we move forward with our small but enthusiastic team of amateur and professional geologists exploring and conserving Bedfordshire's geology. Please contact us for more information either via our website at:

www.bedfordshiregeologygroup.org.uk

or, by emailing our secretary on:

secretary@bedfordshiregeologygroup.org.uk

We are looking forward to a busy and productive summer and autumn. *Bev Fowlston (Treasurer and Projects Officer)*

Cambridgeshire Geological Society

The Society's 2021 PROVISIONAL FIELD TRIP PROGRAMME

Assuming that the Covid pandemic allows, we are hoping to run in the coming months the following local area field visits:

LOCATION	WHAT TO SEE	PROVISIONAL DATE	DURATION
East Pit chalk quarry in Cherry Hinton. A Local Geological Site	Meeting at Giant's Grave crossroads in Cherry Hinton: Have a look at the springs emanating from the Chalk bedrock then cross carefully up to the East Pit quarry to see the cliffs of Cretaceous chalk (ZigZag Chalk to Holywell Chalk Formation). These include the Plenus Marl and Melbourn Rock horizons. The attitude of the bedding planes can be seen by tracing some red and ochre stained layers – highlighting faulting in places. Walk back though Lime Kiln nature reserve. The Robin Hood pub can offer evening refreshments	24th July 18:30	Around 1.5 to 2 hours Access by car or public transport. Although some hills, **much of it is accessible by wheelchair**
Nine Wells LGS (South of Addenbrookes campus)	Nine Wells Chalk spring is the source of Hobson's Brook, just to the south of the Addenbrookes campus. It is emanating from the fractured base of the Totternhoe Stone – a hard Chalk band that runs SW / NE through eastern Cambridgeshire, which is resting on a more impermeable marly layer below. The augmentation scheme to increase spring flow has been Cambridge Water's response to the general problem of over-abstraction and the historical reduction of stream flow.	Friday 13th August	18:00 Accessed by cycle or on foot (~20mins) from public transport hub at Addenbrookes
Building Stones of Cambridge	A walking tour around the city centre to spot the variety of building stone used in its construction. Many of the ancient University buildings used a variety of fairly local building stones – eg clunch, Barnack and Weldon Jurassic limestones. Other more exotic stone can also be found.	11th September	10 -12:30 am Around city centre. **Mostly accessible by wheelchair**
The Fen Edge: Walk from **Swaffham Bulbeck to Reach** – celebrate UNESCO Geodiversity Day	Starting at the NE edge of Swaffham Bulbeck, this route takes you along the Fen Edge escarpment formed by the harder bands of Chalk through some very attractive local villages. It approaches Reach by swinging round an extensively quarried hill (Totternhoe Stone), then along the catchwater lode, to enter Reach through its Roman port. The walk ends by catching a view of the quarry floor. There is a bus that can return you to Swaffham Bulbeck just in time for refreshments at the Black Horse	6th October 09:30	Around 3 hours Accessed by car or N0 11 Stagecoach bus from Cambridge or Newmarket

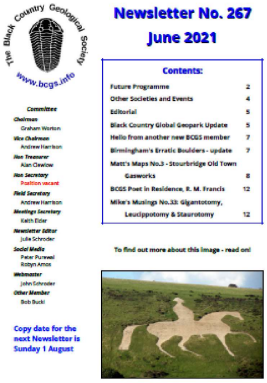
Unless otherwise stated, travel to and from the start point is the responsibility of the participant. There will be limits on numbers. There is no charge for members, but we do charge non-members £3 (numbers, of course, allowing). Please contact us at info@cambsgeology,org to express an interest in any of these events.

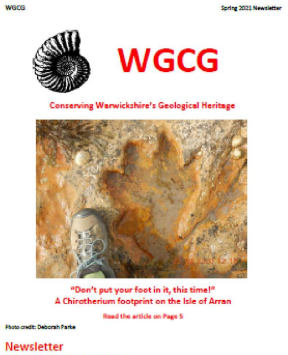
Geo Street Names in Needham Market, Suffolk

GeoSuffolk member Howard Mottram discovered this street and 'Belemnite Close' – named for fossils in the Needham Chalks Pit – in part of the housing development in the old quarry.

Caroline Markham

Some group newsletters





More from DIGS

Following the change in restrictions related to Covid the DIGS group has restarted its site conservation programme. We look after a site at King Barrow Quarry on Portland which is a Dorset Wildlife Trust (DWT) reserve. Recently I visited and found the access path very overgrown and in need of some serious pruning which was carried out later. The importance of the site from the geological point of view is that there is an exposure on early Purbeck strata similar to the Fossil Forest at Lulworth *(see left)*. The Lulworth site has been closed for around three years until recently because of the risk of rock falls so the Portland site is important due to good accessibility, an easy walk from the A354, the main road through Portland.

Our conservation work is limited due to the presence of important limestone grassland which is important for the DWT interest. During earlier conservation work we removed brambles and other 'weeds' and during the most recent visit we were pleased to see a number of pyramidal orchids flowering so there was a doubled benefit for DIGS and DWT.

Swanworth Quarry

Swanworth Quarry at Worth Matravers, Purbeck is a working quarry *(see below)* and a DIGS site. Each July an open evening is organised by the owners (Suttles). It was originally owned by Tarmac but it was sold to Suttles (a local quarrying company) due to limited demand. The open evening attracts various groups, local councillors, Dorset Wildlife Trust, CPRE as well as local residents. Simon Clabburn, Suttles Director of Quarrying, walked round the site with the group looking at various aspects of quarrying, such as the crushed stone store *(see below left)* and planned extension of the quarry as well as conservation work.

The extension of the quarry towards the Kingston to Langton Matravers road is still in the planning stage but Simon is hoping to get things sorted by the end of next year. If they do not get the permission then there will be a problem of sourcing stone suitable for aggregate in Dorset. Although the stone exploited at the quarry is Portland Stone, it is not suitable for use as dimension stone similar to that exploited on Portland. The stone at Swanworth is more fractured and therefore rather different to the Freestone from Portland. On the latest visit there was a specimen of the ammonite Titanities on view proving it is Portland Stone!

In the long term, it is planned that the quarry will be returned to nature, with the first part involving some back-filling and grading works *(see above left, top)* with an exposure of the geology remaining – which includes the Portland Stone and Lower Purbeck Beds. The restored area of the quarry on the south of the site *(see above left, bottom)* has a well-established limestone grassland with many flowers including *(see above right)* pyramidal orchids.

Alan Holiday

"The landscape you will see on this cycle tour had its origins 500 million years ago - and it is still evolving through a combination of natural processes and human activity. By exploring the hills and dales and spotting the clues in the landscape you'll discover a fascinating story of molten rock, tropical seas, vast deltas, steaming rainforests, precious minerals and thick ice sheets" (Elizabeth Pickett, 2006, p.4)

Somerset Geology Group: a Progress Update

The Somerset Geology Group is continuing to make good progress with its Review of Somerset's Local Geological Sites (LGS) in partnership with Somerset Environmental Records Centre (SERC) – despite the Coronavirus pandemic. The project is now in its fifth year and focusing on South Somerset. The text below is derived from its April 2021 report on Year 4 of the project, revised to give you an up-to-date picture; see SGG's page on the SERC web site for the full April 'Update' at:

http://wp.somerc.co.uk/specialist-groups/somerset-geology-group/

South Somerset

We have continued to make good progress in recent months adding to that achieved in 2020/21, although we have once again been unable to recruit SERC-based graduate volunteers to assist over the summer season.

Back in June 2020 SERC won a grant offer from South Somerset District Council's (SSDC) Community Fund to assist with our review in South Somerset. We made an excellent start, with 17 of the 50 LGS in South Somerset ready to be considered by the Panel in April 2021. The remainder are our main focus for this current year.

Those of us from SGG signed up with SERC as volunteers on the project have continued with desk work and gathering reconnaissance information and increasingly now with site visits. We have kept in regular touch with Bryony Slaymaker, SWT's Volunteer Coordinator, to make sure that we are up-to-date with its Covid-secure procedures.

Wesley Harris, our temporary two-day per week LGS Project Officer at SERC, is working from home and has been approaching landowners for permission for formal site visits. Garry Dawson (my SGG Co-coordinator) is allocating the sites to the team, which comprises: John Kirby, Doug Robinson, Sheila Alderman, Dee Edwards and Dave Williams; with myself helping with contextual information, for example, on the nationally important Geological Conservation Review (GCR) sites (Earth Science SSSIs) and desk input.

Our LGS Review is also timed to help with SSDC's Lottery bid for its Ham Hill Country Park. In September 2020, Dee, Dave and myself met with Rachael Whaites, the country Park's Manager, and the consultants appointed to help develop this second-stage proposal. We provided initial ideas, information and contacts on how best to integrate the geological interest and have now provided a completed assessment form for Ham Hill LGS, which adjoins a GCR site, also in the Country Park area. **W**e have tried to emphasise the way that the geology underpins the other interests of the Country Park: its geomorphology and hilltop views; the location of the Iron Age hillfort; the calcareous soils that support a rich flora and fauna; the local history interest of the quarrying Ham Hill Limestone over centuries; and the national importance of the building stone. Meanwhile, of course, the Country Park team have been dealing with very heavy recreational use during the pandemic.

Somerset's Building Stones

Garry and Peter Wright have also been continuing their work on a separate voluntary project (under the auspices of the Somerset Heritage Centre) to map the building stones used in Somerset's towns and villages - and further work is underway. See the web-site at:

https://swheritage.org.uk/historic-environment-service/built-heritage/traditional-building-stone-research/

where there is also a link to Mike Barr's, 2017: *Building Stone Inventories for Devon* (2 volumes - which includes western parts of Somerset and Dorset).

Wendy Lutley (SGG Co-Coordinator)

Our 2021 Summer Programme

Our society's field meetings should not now be affected by the Covid restrictions, but we ask people not to attend field meetings if they feel ill and to take precautions at the meetings. Field trip leaders are volunteers and it would help them plan their event if you let the Society know if you plan to attend. Whilst every effort is made by leaders to assess the safety of field meetings, members and guests attend meetings and accept lifts at their own risk. Meanwhile, we have planned the following field trips and lectures:

Wednesday 2nd June:- Zoom talk by Paul Hildreth about Middlegate Quarry, South Ferriby entitled ***'The good, the bad and the beautiful'*** at 7.30pm. *Booking required a week before.*

Saturday 12th June:- field trip lead by Arthur Speed to examine the Quaternary glacial deposits at Barmston. *Booking required.*

Wednesday 28th July:- Zoom Seminar chaired by Mike Horne, starting at 7.30pm – the Topic is ***'Reading the Landscape'***. Members are invited to contribute short slide-shows and talks about how the landscape provides clues to the underlying geology and to take part in the discussion. *Booking required a week before.*

Wednesday 25th August:- Zoom talk by John Connor about ***'Old-fashioned seismic in Mesopotamia'*** at 7.30pm. *Booking required a week before.*

Sunday 29th August:- Morning Walk: ***'Rocks in a Hull Cemetery'*** (about 90 minutes) led by Mike Horne. *Booking is required.*

Tuesday 21st September:- Field meeting at Mappleton led by Mike Horne. *Booking is required.*

To book an event follow a link from our website at:

http://www.hullgeolsoc.co.uk/hgmeet.htm

Mike Horne (Hon. General Secretary)

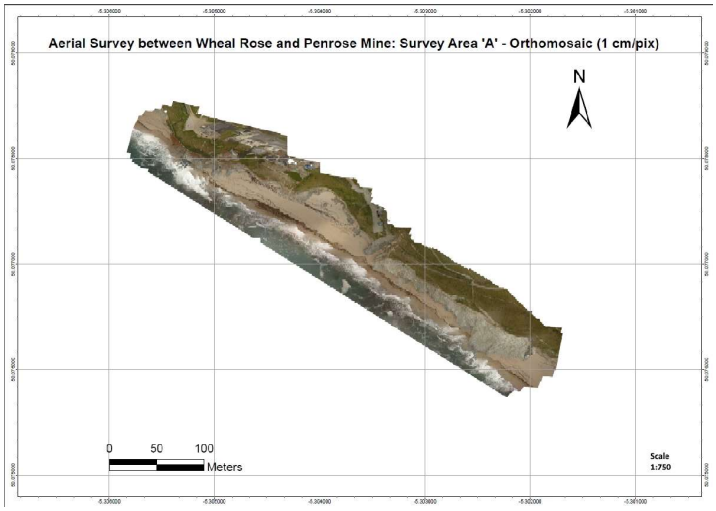
CGG at the Remarkable Lizard

Cornwall Geoconservation Group

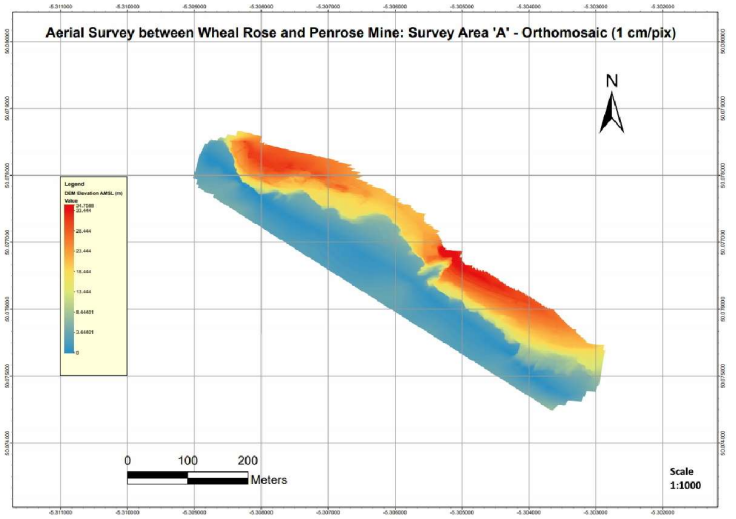
The Lizard peninsula is a remarkable part of Cornwall with both fascinating and unique geology characterized by a rare ophiolite sequence, and a world-famous coastline stretching all the way from St Michael's Mount SE around Mount's Bay to Lizard Point, then NE to Falmouth. Wheal Penrose, a mine on the coast between Porthleven and Loe Bar, was worked during the Victorian Cornish mining boom but had been previously worked in the 17th century, and its history might even go back to Roman times.

The main ore was galena, with minor pyrite, and siderite, but blende (sphalerite) is also found in the dumps and nearby Cornish hedges. Members of the Cornwall Geoconservation Group identified this mine, and its neighbour (a County Geology Site), as a suitable area for a drone survey as miners' excavations have weakened the cliff significantly and led to more recent problems with infrastructure. Disused shafts, drives, and adits are now exposed in the cliff face and add to erosion, in addition to the structural features such as faults that are NW-SE trending – one fault has even been eroded to form a geo. A 40-minute drone survey (with permission from the land-owners, the National Trust, and the nearby air-base, RNAS Culdrose) was conducted to quantify and assess the extent of erosion along the coastal section, and possibly predict future trends.

Over 720 images were correlated to produce a 3D model and a topographic map. A small sample of the



data shows a true-colour detailed image *(see above)* and a 'heat-map' *(see next column, top)* showing by the use of hot and cold colours the height of the ground. Porthleven is to the northwest, and Loe Bar (the survey did



not quite reach as far as the Loe (Loe is pool in Cornish) is towards the southeast relative to the map. To see more of these images, plus some technical detail, please visit the website at:

www.cornwallgeoconservationgroup.org.uk

The road from Porthleven to Loe Bar has been used within living memory of CGG members but it is now truncated and unusable. The South West Coast Path running parallel to this road has also had repeated diversions inland to keep up with the pace of erosion. Coastal erosion is a major problem for SWCP, and under new legislation the England Coast Path (of which the SWCP is part) has provision for roll-back. The coast path SHOULD be along the coast – it was the preventative officers' daily route to look for smuggling! Unfortunately, bits have been privatised so in places the route is diverted inland.

Mount's Bay has been notorious for embaying ships and has links to Henry Trengrouse's invention of the Rocket Apparatus (a life-saving apparatus) – first tested across Porthleven harbour in 1808. In 1807 Trengrouse had watched, helplessly, with many others, as passengers and crew on the HMS Anson drowned. The ship had been driven hard for the beach – intentionally… but was then swung broadside by the sea as she grounded. Many ships have been wrecked in the bay, with several of the reefs and stacks being particularly notorious.

Mark Vickers

Hills and rivers have a symbiotic relationship; water is chanelled by land but then carves into that land over time." (Tristan Gooley, Vaughan Basham, 2011)

Buckinghamshire Geology Group – *forthcoming events*

Cost: *Unless otherwise stated, all events are FREE to members. Non-members will be asked to pay a charge of £3.00 for attending field meetings and indoor events.*

Booking: *Booking is usually required for all field meetings and indoor events. This avoids meetings from becoming oversubscribed and allows the organiser to contact attendees with any last minute changes.*

Clothing: *Some trips, especially quarry visits, may require protective clothing such as helmets and high-vis jackets. Please enquire with the event leader or see event flier nearer the time for details.*

Attending Zoom talks: *Members will be emailed links to Zoom talks one week prior to the event. Simply click on the link and follow the instructions. If you are not a member please request the link via bucksgeologygroup@gmail.com. To avoid talks becoming oversubscribed please do not share the link.*

Saturday 19th June, 10.30am to 2.30pm **Field visit to Coombs Quarry** with Jill Eyers. A beautiful walk to the quarry from the Thornborough Bridge picnic area car park. The quarry has well displayed Jurassic rocks and fossils. We can enjoy a picnic lunch in the quarry before strolling back through the meadows. Contact Jill at bucksgeologygroup@gmail.com for further details.

Saturday 10th July, 10.30am to 4.30pm **Field visit to the Vale of the White Horse** with Jill Eyers. This beautiful walk will take in both geology and archaeology, including the Ridgeway, Wayland Smithy Neolithic burial chamber, Uffington Castle hill fort, Dragon Hill, the famous White Horse along with the all-encompassing geomorphology. A five mile slow paced walk on the flat in the morning but a steep climb in the afternoon to the hillfort. Picnic lunch. Parking in National Trust car park (free to NT members). Full handout provided. Contact Jill at bucksgeologygroup@gmail.com to be added to the list and receive further details nearer the date.

Wednesday 21st July, 3.30 to 5pm **Great Linford Rocks and Fossils** with Jill Eyers. As part of the MK Parks Trust's **Festival of Archaeology** Jill will be on hand at Great Linford Manor with tabletop display of local fossils and guidance for a DIY geological tour of the nearby stone circle and quarry (see www.bucksgeology.org.uk/great_linford.html for more information on these sites) The event is free but booking is required – see the MK Parks Trust website at www.theparkstrust.com/events/festival-of-archaeology-2021-family-archaeology-afternoon-2021-07-21 for further details.

Saturday 21st August, 10am to 2pm **Fossil Hunting – a MK Parks Trust event.** Did you know there are fossils at Great Linford Manor Park? Come along and hunt for them under the expert guidance of Dr Jill Eyers, our resident geologist or rock expert. Dr Eyers has identified that rocks at the Manor Park are over 170 million years old, that's older than some dinosaurs! At this outdoor event, learn how rocks form, what a fossil is and how to identify them in the local park. Suitable for all ages. 'Rock' up from 10am - 2pm. See www.theparkstrust.com/events/fossil-hunting-21-aug for more information

Saturday 18th September, 10.30am to 12.30pm **Visit to Northmoor Hill**, near Denham. Followed by picnic lunch. Geological walk around the nature reserve to see geology and landscape stretching from the Cretaceous period to the Anglian glaciation. Nature included where it turns up! Bring picnic lunch. No loos on site. To put your name down & get more information contact Jill at bucksgeologygroup@gmail.com

Saturday 9th October *(Event awaiting confirmation)* **Site visit and clean-up to South Lodge Pit (Taplow).** A rare opportunity to visit this Site of Special Scientific Interest. Event pending confirmation – watch this space

Thursday 14th October, 7.30 to 8.30pm **Hertfordshire Puddingstone, Formation, Occurrence, Quarrying and Use**. A Zoom talk by Chris Green of the Hertfordshire Geological Society

Sunday 7th November, 10.30am t 12 noon **Hidden Aylesbury.** A town centre walk to discover the geology of Aylesbury hidden beneath the surface and the source of its very varied building stones. A view of Aylesbury that is a bit different! Led by Jill Eyers with guide notes to follow. It will take us to c. 12 noon and then can have lunch in town if wanted. For details and to be put on the list contact Jill at bucksgeologygroup@gmail.com

Children, Finding Fossils and... Some Advice

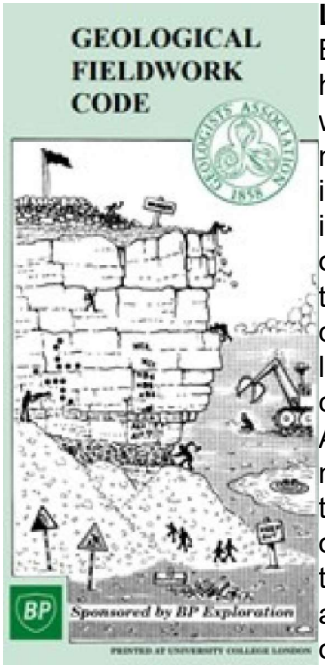
The Group's latest newsletter has some lengthy sound advice, written by Mike Palmer, on children and finding fossils, a much edited version of which follows:

One of the commonest enquiries sent into Bucks Geology Group usually starts along the lines of *"My son / daughter / grandson / granddaughter is really interested in fossils. Where can I find fossils in Buckinghamshire?"*

In some parts of Britain such as the Dorset and the North Yorkshire coast, the answer to this question would be easy. There, the fossil-rich coastal rocks are repeatedly battered by the sea, releasing a steady supply of fossils on the shore – just there for the observant collector. Unfortunately, Buckinghamshire is over 70 miles away from the sea! There are plenty of fossils beneath our feet, they just don't come to the surface often.

Away from the coast, some of the best fossil collecting areas are working and abandoned quarries. These days, however, it is far harder to gain permission to access working quarries. Unfortunately, many abandoned quarries have either been all-collected-out, or, worse still, used for landfill.

But fossils are found in Buckinghamshire, as our newsletter can attest. In recent issues I have included images of fossils that have been sent in for identification. One lucky person even found a marine crocodile. It has to be said, however, that these finds are usually found by people just out for a walk , metal detecting or digging a pond, rather than a dedicated fossil hunt. But with a bit of knowledge, the chances of finding fossils can be increased.



Local groups, such as the Bucks Geology Group, have local knowledge which they share with members on field meetings. Not all their meetings, of course, are based on fossil collecting but those involving access to quarries are certainly likely to offer a good chance of finding fossils. Anyway, individuals are more likely to gain access to a quarry as a member of a geological group, and they should follow the advice found in the Geologists' Association's 'A Code for Geological Fieldwork' available *(see above left)* on the Group's website at:

www.bucksgeology.org.uk/pdf files/GA geological field work code.pdf

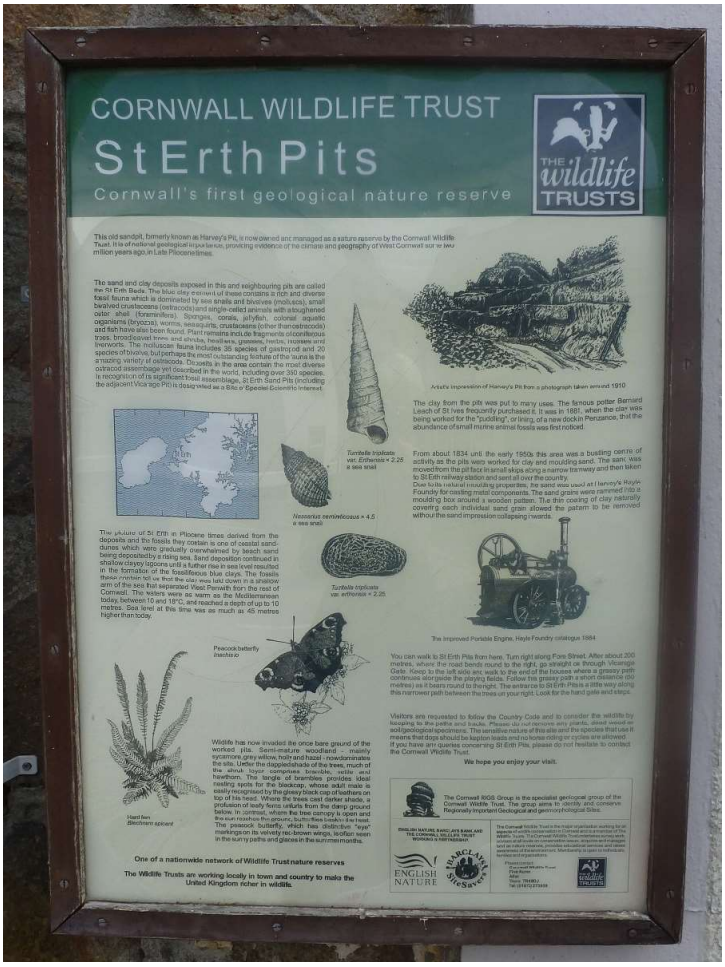
If you have a child or grandchild who is interested in fossils and geology, Rockwatch (www.rockwatch.org.uk) is a nationwide geology club for children sponsored by the Geologists' Association.

The quality of Mike's writing is typical of what can be found in GCUK member groups' newsletters. It's just a pity they aren't widely shared. Perhaps their editors should more freely exchange issues, after due time to avoid compromising membership matters, amongst themselves in order to gain inspiration and fresh insights into communicating with their various readerships. *TAK*

Trouble with Vandals? Put the Information on the Pub Wall!

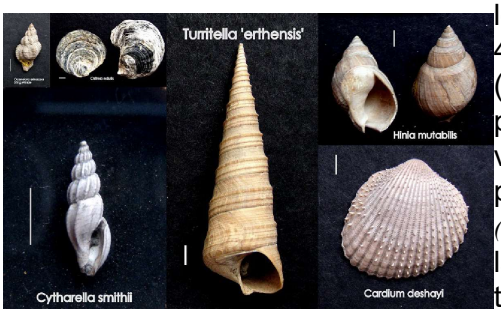
Cornwall Geoconservation Group

The Cornwall Geoconservation Group, back in the days when it was the Cornwall RIGS Group, were very happy to get the first geological nature reserve in Cornwall; back in 1996! Since the RIGS Group and the Geoconservation Group are part of the Cornwall Wildlife Trust, management of the reserve, St Erth Pits, was taken care of by the Trust. Except that it was not; a local youth found the new information board and the fencing ideal material to vandalise. After the replacement board was also vandalised the group asked the local pub, the Star Inn, down in the centre of the village, if they would be happy to have the board somewhere. *"Why not on our outside wall?"* …where it is still *(see below)*, 25 years later,



completely undamaged. We are pleased to report the pub is still undamaged too! Inside it is still a traditional pub, but it does now have a pizza oven in the garden (a very useful addition in pandemic times!). Dave Horne, Professor (Emeritus) of Micropalaeontology at Queen Mary College (University of London), very kindly pointed out a glaring error in July 2021. Maybe in the group's 30th anniversary year of unbroken existence we can make a corrected – and updated! – panel. And, just maybe, there will be a few style changes too!

Geology? You want some geology? Okay. It's a Lower Pleistocene sand and clay deposit, formed when sea level was around 40 metres higher (a submarine pub!). It has a very rich and well preserved fauna *(see left)*, particularly ostracods in the St Erth Beds.



The sand was used for moulding by Harvey's of Hayle, which company made machinery for the mines, and the clay was used for many things including puddling in the new Penzance dry dock in 1834, and in the twentieth century by Bernard Leach, the potter, in St Ives.

John Macadam

Suffolk's County Geodiversity Sites

Suffolk is most fortunate to have large areas of land with public access – a particular asset to its population during our months of the pandemic. GeoSuffolk has designated 29 public County Geodiversity Sites (CGS) and recently we have started to re-monitor their condition, reporting back to both Suffolk County Council and to the landowners.

We have visited seven CGS so far this year: Christchurch Park and the Pocket Park in Ipswich; Bridge Wood and Nacton Cliff in Nacton; Spa Gardens in Felixstowe; and the Cliff and Ness in Thorpeness. All except the Pocket Park retain their 'GOOD' rating. The sarsen stones in the Pocket Park are 'GOOD DECLINING' due to their graffiti – see the Ipswich Society website for RM's article on this CGS. With this exception, all are looking fabulous and all are well worth a visit – see Geology and Sites (geosuffolk.co.uk); for example Thorpeness Cliff CGS, as seen this month *(see below)*, which shows Norwich Crag sands (including clay beds), with cryoturbated till above.

Caroline Markham

Field Trips are Back!

We're starting close to home with three short evening trips to re-connect with our local geology: Wren's Nest NNR, Saltwells NNR and Bumble Hole. The meetings should all end around 8.45 - 9.00 pm with a proposed pub stop after that for those who feel comfortable to carry on discussions.

Please note that numbers are limited to 25. First priority will be given to BCGS members. It is necessary to register for these trips with the Field secretary, Andy Harrison, at:

fieldsecretary@bcgs.info

One week before the event any remaining places will be available to visitors on a first come first served basis; please register your interest as for BCGS members, and you will be put on a waiting list. The planned trips are:

Wednesday 7th July:- ***'Rediscovering Black Country Geology and its Impacts on the Landscape 1: Wren's Nest NNR'***, led by Graham Worton and Andy Harrison. Meet at 6.45 at the wardens' base (SO937921). Park on the roadside of 'Fossil View'. Starting with our oldest local geology, this will be our first in-person meeting since the pandemic. Finish at 8.45 - 9.00 pm followed by an optional visit to a local pub to socialise and continue discussions.

Wednesday 21st July:- ***'Rediscovering Black Country Geology and its Impacts on the Landscape 2: Saltwells NNR'***, led by Graham Worton and Andy Harrison. Meet at 6.45 at the main reserve car park (SO933869). At Saltwells we move up the geological column and introduce some Industrial Revolution themes. Finish at 8.45 - 9.00 pmfollowed by an optional visit to a local pub to socialise and continue discussions.

Wednesday 11th August:- ***'Rediscovering Black Country Geology and its Impacts on the Landscape 3: Bumble Hole'***, led by Graham Worton and Andy Harrison. Meet at 6.45 at the old 'Dry Dock' pub car park near the visitor centre at Windmill End (SO953880). The final walk in this series explores the landscape and industrial heritage around Bumble Hole. Finish at 8.45 - 9.00 pm followed by an optional visit to a local pub to socialise and continue discussions.

Birmingham Erratic Boulders Project

Back in December 2019 I gave an enthusiastic introduction to the Birmingham Erratic Boulders project in which I am representing BCGS on the Steering Group, You may be forgiven for wondering whether this project fell by the wayside during the pandemic, but I can assure you that it is still very much alive, and I'm pleased now to be able to bring you a progress report.

My introductory article gave a time-scale of two years for the project, starting in July 2020 subject to receiving funding from the NLHF. Following an encouraging response from the NLHF to the enquiry form the Project Leader, Ian Fairchild, was almost ready to submit the full application form when the Covid shutters came down and the NLHF was closed to new applications until November 2020 at the earliest.

Steering group meetings resumed in November 2020 to face a new set of criteria imposed by the NLHF reflecting the social changes caused by Covid-19. It was decided that we should reduce the time-scale of the project to fifteen months, and increase the staff time for project coordination and the management of volunteers. This meant that a new enquiry form had to be submitted, and this was duly sent in March this year. The feedback was encouraging, and the full application was submitted at the beginning of April. If all goes according to plan, the project will run from July 2021 to September 2022, but at the moment we are still waiting for the NLHF decision.

This project has great potential, perhaps as a starting point to encompass the erratics, such as that seen at Calcott Hill *(see left)* on the proposed erratic cycle trail, of the West Midlands. It could perhaps add another dimension to the proposed West Midlands National Park, a project led by Professor Kathryn Moore from Birmingham City University who will be coming to talk to BCGS about the project in January 2022. We're keeping our fingers crossed for a positive outcome from the NLHF application.

In the meantime, Ian Fairchild gave a very informative talk to the West Midlands group of the Geological Society; you can catch up with this on YouTube at:

https://www.youtube.com/watch?v=NCbbFH-r3k8

I hope there'll be more to report in the next issue of the *BCGS Newsletter*.

Julie Schroder

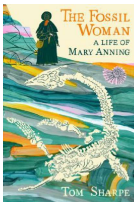
WGCG
Hidden wonders in the landscape of Warwickshire

A Zooming Summer

The Warwickshire GeoConservation Group held two excellent Zoom summer meetings, on:

Wednesday, 19th May:- Angus Miller on ***'Iapetus No More – the continental collision that shaped Scotland'***. and:

Wednesday, 16th June:- Tom Sharpe on ***'Mary Anning, the fossil woman'***; this was the last WGCG evening talk until they restart in the coming September.



GeoWeek 2021 – *'Net Zero by 2050'*

Introduction

Our overarching theme for GeoWeek 2021 was *'Net zero by 2050 – what will it mean for our region?'*. The plan was to encourage people across the country to not only follow up and expand on the 76 GeoWeek events run in 2019, but also to add some 'Net-zero' field trips across the UK. We planned to ask leaders to take members of the public to areas with views and rock exposures, and there to discuss the impact on the local area that the Government's targets to reduce carbon emissions to 'net-zero' by 2050 (2045 in Scotland) might cause. This would provide a useful backdrop to the COP26 climate discussions planned for Glasgow in November this year. To this end, we planned a launch event, where the British Geological Survey's Director, Karen Hanghøj, would speak, followed by a panel discussion.

We realised that, like many of us, potential field leaders might only have a partial knowledge of what impacts on the local area might be from strategies to mitigate and adapt to climate change. For this reason, we developed a series of information sheets and 'thinking activities' to be published on the *Earthlearningidea* web-site for teachers, that could also be used by field leaders. The sheets have been prepared and will all be published as part of the Earthlearningidea normal two-weekly publication schedule, but meanwhile, they can all be accessed pre-publication at:

https://www.earthlearningidea.com/home/Net_zero.html

They include an introduction, 20 sheets on climate mitigation, from solar farms to 'blue' hydrogen and from pumped storage schemes to enhanced weathering, and four sheets on adaptation, from landslide management to agricultural responses – 25 sheets in all.

In the event, the Covid outdoor 'rule of six' regulations operating in early May meant that, while we were able to run the launch event virtually through zoom, we were not able to advertise any national 'in person' events through the GeoWeek website at: https://earth-science.org.uk/geoweek/ since such national advertising might encourage more than five people to join a field leader, so breaking the Covid regulations. Instead, we encouraged groups across the country to add to the GeoWeek map examples of their self-guided geological walks (that people could try during Covid times). We also planned a few locally advertised 'in person' 'net-zero' events that we added to the GeoWeek map retrospectively. Described below are some of these experiences:-

1. The 'Net-zero' experience of Elizabeth Devon

Three groups of five people met at the Halidon Hill viewpoint *(see next column, top)* over-looking Berwick-upon

Tweed. In front of us were Carboniferous sedimentary rocks, (sandstones, mudstones and limestones) with the andesite lavas and granite of the Cheviot Hills in the distance. We could see as far as Lindisfarne where the Whin sill outcrops on the island, and also inland. The area is good agricultural land so large-scale solar farms were not thought appropriate. Similarly, using land for growing biofuel crops was not considered worth-while. Everyone agreed with the latest developments in biofuels, where the waste cellulose from agriculture and forestry is used. Trees have been planted on some of the marginal land in the area and participants were keen to encourage local communities to plant trees on waste land.

Participants were open to the idea of offshore wind farms, possibly with green hydrogen production alongside. Much of the coastal area is AONB and the Cheviot Hills are in the Northumberland National Park so it was felt that onshore wind farms were not appropriate.

A possible tidal barrage across the Tweed was discussed but it was felt that the returns would not justify the initial costs, or the initial high carbon emissions from construction. There is not a large tidal range here.

Geothermal power could be considered, making use of the Cheviot granite but it was felt that the restrictions of the National Park and the relatively low population density would make the construction costs uneconomic, but it was agreed that it could be done.

Torness nuclear power station (an old Advanced Gas-Cooled Reactor) is on the coast about 20 miles north of there. Some people were interested in the new Small Modular Nuclear Reactors being developed but no-one was keen on a GDF (Geological Disposal Facility) for radioactive waste in the area; the geology is not suitable anyway being too faulted and folded.

The basalt from the Whin sill complex in the south of the area is already being taken from quarries here to spread on agricultural land further south for fertiliser and enhanced weathering.

There are some small old coal mines in the area but it was felt these were not deep or extensive enough for use for hot water geothermal energy.

Part of the coast has already been protected by sea

walls and rip rap and it was agreed that these measures would have to be increased to cope with rising sea levels. The Elizabethan ramparts around the town would not be sufficient.

Excellent feedback was received from the two zoom talks on the topic with many views expressed in the zoom chat and by email.

2. The 'Net-zero' experience of Peter Kennett:-

I discussed the possibilities for zero carbon in the city region of Sheffield with two geologist colleagues, standing at a stone-built viewpoint *(see below)*, above the west-

ern suburbs of the city, at the head of the Porter Valley. From it can be seen the middle ground consisting of Coal Measures rocks, with the Permian scarp on the horizon. Six coal-fired power stations are named on the pointer dial, installed in 2005, and in the far distance, on a really superb day, the Humber Bridge 52 miles away, can be seen. Some days later, the two one-hour sessions for a total of nine people from local interest groups were held in wet, cold and windy weather and the views had to be imagined in the swirling cloud! Of the six power stations, now only Drax is operational – and coal has largely been replaced by 7.5 million tonnes of wood pellets being imported from North America each year!

Some of the measures outlined in the *Earthlearningidea* activities are already visible, for example: the city's incinerator that provides district heating for many city centre buildings; several small windfarms; solar panels on buildings; and the farming of sheep, providing wool for insulating buildings. The BGS section of the rocks beneath our feet showed suitable structures for the sequestration of carbon, and a micro-hydro water wheel could be installed at the site of a former mill dam below us, although the potential would be much better in the lower River Don. The possibility of extracting geothermal heat from the many flooded coal mines in the region caused excitement, but nobody thought it likely that a tidal power station would be constructed in the Humber Estuary.

Very thoughtful feedback was received by email, including from one person who pointed us to a long-term building site where carbon sequestration by enhanced weathering might have been going on as we spoke. Coincidentally, a report on how Sheffield might achieve "zero carbon" had just been produced by Arup, on behalf of Sheffield City Council:
https://www.arup.com/perspectives/publications/research/section/pathways-to-zero-carbon-in-sheffield

3. The 'Net-zero' experience of Chris King and Doug Robinson

Our visit was to Sand Point *(see below)* overlooking the Severn Estuary near Weston-Super-Mare in Somerset. We ran a pilot visit in April, inviting members of our U3A geology group to join us in groups of four for a 2.5 hour visit, one in the morning and a second in the afternoon. The pilot ran well and generated much interesting discussion, so we repeated the plan during GeoWeek.

We discussed the 5m raised beach – on which the group in the photo is standing. We considered how this had formed by sea-level rise caused by climate change due to natural processes, and how a 5m higher sea level might impact the estuary's coastline. We explored whether a tidal barrage across the estuary in the distance might be built and what its impact might be. The Carboniferous limestone exposed on the beach in the flank of an anticline was investigated as a potential site for carbon capture and storage (CCS) (not possible). The basalt outcrop on the beach was also considered as a source of material for enhanced weathering. Meanwhile the wind turbines on the Welsh coast in the distance and the windy weather prompted debate on wind energy, whilst the Hinkley Point nuclear power station being constructed (not quite visible) promoted discussion on the potential of the area as a geological disposal facility (GDF) for nuclear waste (not possible).

We used graphs and diagrams to discuss the geological background to climate change, the 'net zero' targets, and the potential of a wide range of other strategies to contribute. Fortunately the feedback from the two U3A groups and the two GeoWeek groups was excellent – prompting our thinking about how this could be repeated for larger groups in the future.

We hope the accounts of some of the experiences of this year will inspire you to join us to lead GeoWeek 'net-zero' and a range of other events next year. GeoWeek 2022 will run for the nine days of 7th–15th May; the launch event will be on the evening of Thursday 5th May 2022.

Chris King

Our Last Summer Zooms!

Cambridgeshire Geological Society

The Society's last summer 2021 zoom meetings were:

Monday, 14th June:- ***'Île De La Réunion: Pitons, Cirques, Ramparts and Volcanoes'*** by Steve Thompson

Île De La Réunion sits atop its very own, Indian Ocean hot spot, being the top of two massive mid-ocean volcanoes - the dormant Piton des Neiges and the very active Piton de la Fournaise. Piton des Neiges has undergone caldera creation and subsequent collapse and, aided by the wet tropical climate, severe erosion, to produce a stunning topography of Pitons (Peaks), Cirques (steep basins), and Ramparts (near vertical crater walls). Le Parc National de la Réunion, which encompasses both volcanoes and covers 42% of the island, was elevated to World Heritage Status by UNESCO in 2010.

Monday, 28th June:- ***'Arabian Adventures: Geological Mapping in the United Arab Emirates'*** by Dr Andrew Farrant (British Geological Survey)

Between 2006 and 2012, the BGS was tasked with creating new geological maps and other geological datasets for the United Arab Emirates. This talk provided an overview of the geology of the UAE, its geohazards and discussed some of the subsequent 3D modelling work around Abu Dhabi.

2021 MEETINGS and CONFERENCES

Except for the September meeting, all of these will be held virtually. Admission to all on-line meetings is free to HOGG members via an exclusive weblink for claiming a ticket at the *Eventbrite* web-site. A link for each online meeting will be emailed out to members. Registration and ticket booking is via the *Eventbrite* web-site where an outline of each event can be found. Guests are welcome to attend meetings for a small admission charge. For membership enquiries please email:

pfriches@hotmail.com

Wednesday, 12th May (11.00 to 16.00):- ***'The Geological Society's Map: understanding George Bellas Greenough and his 1820 map project'*** conference. Registration (and tickets for admission) via *Eventbrite* at:

https://www.eventbrite.co.uk/e/the-geological-societys-map-understanding-greenough-and-his-1820-map-tickets-140831515855

Free for HOGG members and former/present members of the Greenough Club/Society (UCL) – via a members' exclusive code.

Thursday, 17th June (13.00 to 14.00):- ***'Treasures from the Archive of the Sedgwick Museum'*** with Sandra Freshney.

Thursday, 29th July (13.00 to 14.00):- ***'Geology and Medicine'*** with Dr. Chris Duffin (full title tbc).

Friday to Sunday, 10th to 12th September:- ***'Malvern Rocks: Geology in a Victorian Health Resort'*** HOGG field meeting with Tim Carter. This is in Malvern to look at how the complex geology of the Malvern Hills and their surroundings was investigated and came to be understood during the nineteenth century. Geology and fossil collecting were additional attractions for visitors to what was a premier resort, with its famous 'water cure', based on the springs flowing from the hills. The event is being planned to enable social distancing, should this still be required. Booking is available from 12th May at: https://www.eventbrite.co.uk/e/hogg-field-meeting-malvern-rocks-geology-in-a-victorian-health-resort-tickets-146144854193

"The extensive layers that make up the Chiltern Hills were formed from countless billions of minute marine organisms, making this soft sedimentary limestone termed chalk. The Cretaceous Period of the calcium carbonates lasted 70 million years..." (Vaughan Basham, 1999, p.88)

Now, this white space was just waiting for your little news snippet or announcement!

Copy for the next GEONEWS issue, for November 2021, must be with the Editor by 15th October, 2021 at the very latest!

This newsletter is published by GeoConservationUK and is sponsored by *Rockhounds Welcome!*

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