GEOconservationNEWSletter

Summer 2019 issue

A word and more from the Editor . . .

Welcome to the second 2019 issue of **GEONEWS** I'm thankful to the several contributors who, with my own edited gleanings, provide some indication of the diversity and commitment of GCUK's membership to protecting and enhancing the country's geoheritage. However, there is a pressing need for more of the membership to send in their stories, news and notices if this newsletter is to truly fully reflect the memberships activities and interests; it's amazing what 150-250 words and a couple of photos can convey in support of UK geoconservation.

I know about the challenge of writing even such brief contributions. I've been trying to finish several cyclist geotrails for the past few months, but something, often domestic or related to my other (of course, lesser!) interests, constantly diverts my attention. At least I've managed a few days of cycling and camping - particularly adding to my knowledge of Cambridgeshire's geology and topography; getting much further afield has been a challenge with the unseasonal weather and limited bus and train services.

My local railway cutting in the Chalk is now obscured by the erection of a new tall trackside substation to provide power for the electrification of the railway north of Bedford. The 6,000 or so dwellings, two electricity generating stations, and several large warehouses planned for my home area of Bedfordshire's (now former?!) Green Belt have been preceded by archaeological surveys, generally funded by the developers. Not a penny has gone to geological research projects or to geoconservation. Yet, there is a Chalk geological SSSI and interesting loess deposits within metres of these developments.

Anyway, do distribute **GEONEWS** to your colleagues, friends and even family members - they might actually enjoy the read and understand why geoconservation, even around railways, is necessary and it needs funding - here's hoping! *Tom Hose*

GeoSuffolk - Westleton's Pebbles Explained

In July, GeoSuffolk erected a geological interpretation panel at Westleton Common (near to Dunwich and Minsmere in Suffolk) - a big step forward in our contribution to the management of this County Geodiversity Site (CGS). Situated within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (SCH AONB) and managed by Westleton Parish Council, this disused quarry site is valued for its lowland heath habitat which has developed on its free-draining Norwich Crag gravels. The panel, designed and created by GeoSuffolk, illustrates and encourages the viewer to investigate the large, rounded cobbles which exemplify this 1.5-2 million year old marine deposit. It tells the story of their interpretation, starting with Sir Joseph Prestwich who named them the 'Westleton Sands and Shingle' in 1871.

Aware of the unique landscape (including some of the highest sea cliffs in Suffolk) which the Norwich Crag gravels give rise to, and their long history of academic study at this site, GeoSuffolk visited and recorded it in August 2009. Westleton Parish Council was informed and we visited the site with their representatives in July 2010. We designated it a CGS in March 2011 and our recommendations were included in the Parish Council Management Plan for the Common. Condition Monitoring was carried out in January 2012 – it was GOOD, with the caveat that the vertical faces should be kept clear. With this in mind, we asked the SCH AONB for help in 2015 when some of the faces needed to be refreshed and our clearance efforts were aided by a band of their volunteers.

Throughout this time investigative research into the origins of Norwich Crag gravels at this site and others in Suffolk has continued, with, for example, publications by James Rose, Richard Hamblin, Peter Allen and GeoSuffolk's Howard Mottram in our 10th Anniversary Volume, *'A Celebration of Suffolk Geology'* (edited by Roger Dixon in 2012). Now, funding from the Suffolk Naturalists' Society has enabled us to interpret the geology of this CGS for local people and visitors to the area. The

panel *(see above)* can also be viewed on the GeoSuffolk web site at:

http://geosuffolk.co.uk/index.php/geology-and-sites

Caroline Markham

Somerset Geology Group - Local Geological Sites Progress

Garry Dawson of Somerset Geology Group (SGG) reports that its project with Somerset Environmental Records Centre (SERC) to review the county's Local Geological Sites (LGS) is going well: "The re-designation of around 60 of our 230 LGS has been agreed by our LGS Panel. This is rather slower than we had originally planned, but we feel we are collecting a detailed and robust data set on our LGS."

Meanwhile, SERC recently received approval from its management board for a two-day per week, two-year paid Geological Assistant post; Wesley Harris, who has been volunteering on the project for the last year, has taken up the post. We have also recruited two post-graduate geologists who will be working on the review throughout the summer on a voluntary basis – and they were just completing their induction in early July.

We have almost completed work in the Quantock Hills Area of Outstanding Natural Beauty (AONB) and the Somerset part of the Exmoor National Park. We plan to concentrate our efforts on the Mendip Hills AONB and surrounding area during this summer. Having completed two year's work on the sites' review we feel that our procedures are well-tested and working well; we are happy to share our experiences with anyone planning a similar review.

The work has highlighted opportunities for numerous follow-on geoconservation activities such as site clearance, new sites, interpretation and geological trails most of which, unfortunately, will have to wait until our review is complete! For more detail see SGG's web page at:

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

There you can see its twice-yearly news - the last one for April includes a full report of the second year of the review project.

Wendy Lutley (for the Somerset Geology Group)

Grand Opening of the 'Wall of Geology'

Bedfordshire Geology Group (BGG) has successfully delivered an array of geoconservation projects for the Greensand Country Landscape Partnership (GCLP). BGG is one of a number of partners involved in raising awareness of the heritage of Greensand Country. Funding provided by the Heritage Lottery Fund has enabled the promotion of geology and geoconservation and the creation of a 'Wall of Geology' in Clophill. BGG held an event for the opening of the Wall of Geology and an interpretation board (see right, top) on 4th May. The wall is in the grounds of the Old St Mary's church beside the Clophill Ecolodges in Clophill.

Bev Fowlston (BGG) opened the event with an introduction to the Earth Heritage of Greensand Country and work that BGG had done in building the Wall with support from the GCLP. The event included an official ribbon-cutting ceremony *(see below)* performed by Nick Pierpoint, the President of the Geological Association.

There was a good representation by BGG members, Greensand Trust officials and volunteers, Clophill Heritage affiliates and the public. Geological activities were arranged for children and a colourful display of rocks and fossils engaged the adults in much discussion (including exhibits of the best of the Woburn Sands).

As this was both GeoWeek and the GCLP Festival Week, the BGG invited Nick Pierpoint to do the official ribbon-cutting. Nick applauded the efforts of BGG and praised our endeavours to make this site easy for the public to understand. He also acknowledged the hard work done in making the Potton Scout Hut Quarry accessible to those less abled by providing wheelchair ramps and railings.

As is typical of any May Bank Holiday weekend, we had four seasons in four hours. Thankfully, the staff and volunteers at the EcoLodge café provided much needed refreshments and shelter from a heavy hailstorm.

The 'Wall of Geology' shows a schematic of Bedfordshire geology, made from the four major rock types in our county. (From NW-SE; Jurassic limestones, Oxford Clay, Woburn sands, Gault clay and Chalk. These were inlaid into the reconstructed wall which used some fine examples of the reddish-brown Greensand. The interpretation board explains the geology of the wall and surrounding views *(see above)* in text and map formats.

Behind the wall sits the beautiful 10th century Old St Mary's church, now a ruin but with its outer walls restored now standing proudly on the hilltop surrounded its old cemetery. The old tower has also been restored and provides an extra excursion for the fit. It's well worth climbing the narrow staircase for the magnificent views it provides of the surrounding countryside.

The BGG would like to express our thanks to Tarmac who sponsored the construction of the wall, the builders, the GCLP and the Heritage Lottery Fund. *Bev Fowlstom*

A Cautionary Note and The Programme

WGCG
Hidden wonders in the landscape of Warwickshire

John Crossling, in his Chairman's notes, in the Warwickshire GeoConservation Group's latest newsletter makes some points that probably all of GCUK's member groups need, and probably are already trying, to address in the coming years: *"We still have our hard core of dedicated and enthusiastic volunteers with many years of experience and they will continue to be involved. They do however recognise that they will not be able to help forever, and we wish to ensure the future of the group by succession planning. This means gradually bringing in some new people with fresh ideas and energy – especially the latter! Anyone who steps forward will be helped and supported and can act as a shadow if they wish.*

***W**e held a special meeting on 6th March. [at which] We were able to take a few names and contact people who are able to offer some support, particularly in the area of social media, which will be very beneficial. We do need to plug some other gaps, however. Taking on board some of the comments that were made, we are extending an invitation to anyone who just wants to see what the management team does; to come along as an observer – we just need you to contact us in advance so that we can ensure there is a chair for you! We will also give a brief report on what the management team have been making decisions on at the open meetings, so that we are more transparent than in the past. We will continue as before for the time being, but we will have to review the situation regularly as we may have to start to reduce our programme of activities without some fresh blood in to help."*

Of course, the Group is still running a packed programme of walks over the second half of the year, which can be summarised:

- 22nd June (Saturday) - Bredon Hill (led by Rob & Boo Vernon / Deborah Overton); jointly held with the BCGS & use will be made of apps.
- 12th July (Friday) - Malvern Hills (led by Dick Bryant).
- 13th-16th September (w/e) - Dorset Coast; an invitation from the BCGS.

Likewise, talks which can be summarised:

- 18th September: Andy Howard (Yorks.GS) on "Jurassic Sedimentation in Yorkshire".
- 16th October: Annual General Meeting.
- 20th November: Haydon Bailey on "The Real value of Microfossils".
- 11th December: Christmas Social.

Meetings are held on Wednesdays (usually, on the third of the month) and start at 7.30 p.m. in St Francis Church Hall, 110 Warwick Road, Kenilworth, CV8 1HL unless otherwise stated. Tea / coffee & biscuits are available beforehand from 7.00 p.m.

"But the scope of geology has no bounds in time. It begins with astronomy and will end only with the end of time... All the time geological processes are going on, and the activities of so restless a creature as man have a profound effect on the course of nature. The clearance of forests, the draining of swamps and stream valleys, the digging and ploughing of the hills, all these are geological processes." *W.J. Arkell*

An Invitation to attend the inaugural

WEALDEN GEOLOGICAL ASSEMBLY

for all those interested in Geology/Earth Science in Southeast England

Saturday 30 November 2019 in the Exhibition Hall of Worthing College

on the northern outskirts of the town, BN14 9HD, with ample free parking

Programme

9.00-9.50	Registration and Welcome
9.50-10.25	Will Richardson (Hastings and District Geological Society) 'Extinctions at the Eocene/Oligocene Transition at 34 Mya'
10.25-11.00	Alison Ure (Open University Geological Society--Southeast Region) 'Volcano or Impact Structure at the Greek/Turkish Frontier?'
11.00-11.30	Coffee and Biscuits
11.30-12.20	Susannah Maidment (Researcher of Dinosaurs) Natural History Museum 'Jurassic Dinosaurs of the Morrison Formation, Wyoming, USA'
12.20-12.55	Simon Penn (PhD student at Portsmouth University) 'Palaeoenvironments of the Wealden strata in the Wessex Sub-basin'
12.55-2.05	Buffet Lunch
2.05-2.40	Wealden Dinosaurs, based on Mantell's discoveries: a) Joe Bonsor (PhD student at the NHM) '*Iguanodon* and other Wealden iguanodontids'
2.40-3.15	b) Tom Raven (PhD Student at the NHM) '*Hylaeosaurus* and other Wealden anklyosaurs'
3.15-3.50	Tea and Biscuits
3.50-4.25	Mark Eller (Mole Valley Geological Society) 'Relationship of English Vineyards to Wealden Strata'
4.25-5.00	Jonathan Ikpere (PhD Student at Portsmouth University) 'Resilience of 'Cob' Structures to Regular Environmental Changes'

Conference Organiser: Anthony Brook email: anthony.brook27@btinternet.com

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Registration Form

Name_____

Address_____

_____ **Tel:**_____

Email:_____

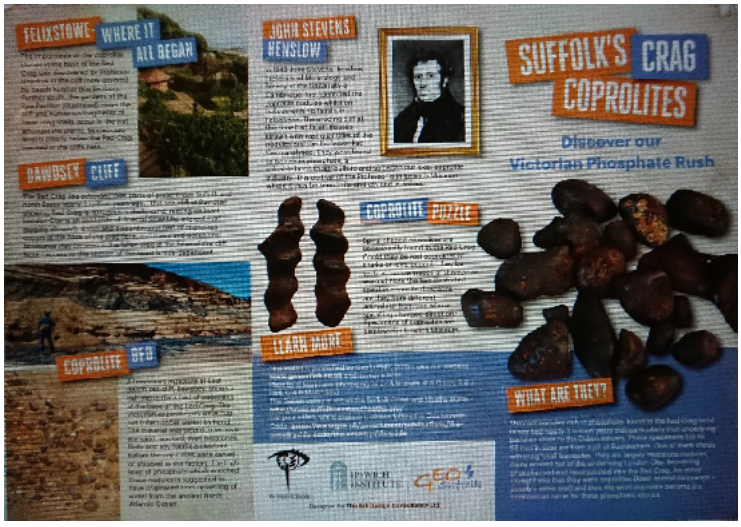
Conference Fee for the WGA is **£30**, which includes coffee/tea/biscuits, buffet lunch and Conference publication. Please make your cheque payable to *Anthony Brook* and forward, with this completed Registration Form to Anthony Brook, 15, Cambourne Court, Shelley Road, Worthing BN11 4BQ

Conference Fee for Full-time Students is only £25

Suffolk's Crag Coprolites

Nodules rich in phosphate *(see below left)* are found in the Red Crag sand, particularly that underlying the parishes close to the Deben estuary. An initial thought was that they were coprolites (fossil animal droppings – possibly some are!) and thus the word coprolite became their commercial name. Their discovery at Felixstowe in 1843 gave rise to Suffolk's Victorian phosphate rush as they were 'harvested' for the fertiliser industry, which helped to feed a growing population. They were brought to Ipswich to be turned into superphosphate in the mid-nineteenth century – the factory is long gone, but the name remains; Coprolite Street on Ipswich's Waterfront is a 'must visit' for geological 'selfies'!

GeoSuffolk has just published a leaflet *(see below)*, written by Bob Markham, which chronicles the quirky history of Suffolk's long ago coprolite industry, with places to visit for evidence of its existence. It includes photographs of some of the fossils found with the coprolites and suggests locations where you can see the coprolite beds in the Red Crag today. Thanks to funding from the Ipswich Institute and Ipswich Society, it is available free-of-charge at a variety of outlets in the Ipswich / Woodbridge / Felixstowe area. It can also be downloaded at:



http://geosuffolk.co.uk/index.php/archive/geosuffolk-leaflets

Caroline Markham

Another Fen Edge Trail Walk

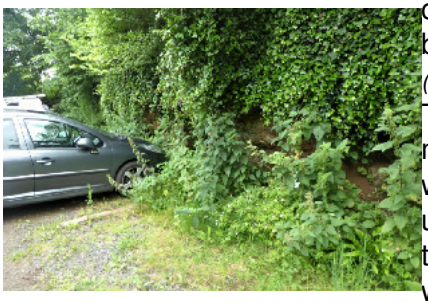
The latest walk leaflet *(see next page, top left)* on the Fen Edge Trail, from Witcham to Sutton, is now published and available to download from the Society's website at:

http://www.fenedgetrail.org/ely-island

This is the first of the walks on the Isle of Ely and provides excellent views across to the Cathedral on the walk down to the Ouse Washes from the high (clay and glacial material) ridge on which Witcham and Sutton both sit. Half-way along, near Mepal, is the New Bedford Level (drain/river) which has a convenient pub on the riverside. Even if you don't fancy the whole walk, it's an interesting area to visit especially on a pleasant summer's day - which we'll no doubt have very soon?!!

Red Lane Quarry working party

Three volunteers spent the morning, although one stalwart stayed until 3.30 p.m.) of 17th June undertaking clearance work at Red Lane Quarry, Abbotsbury. Good progress was made on cutting back the vegetation obscuring much of the site's rock faces; this can can seen from the before *(see left)* and after *(see below right)* photos. There is still scope for more conservation work, particularly higher up the site further from the road. **T**he Quarry was cut in the late 19th century to exploit iron ore. It provides a superb section in the Kimmeridge Clay Passage Beds, and Abbotsbury Iron Ore of Jurassic age. The Ore is a unique deposit of an iron rich oolitic clayey sandstone. The Ore is in the form of chamosite, but it had too much silica to be economically viable.



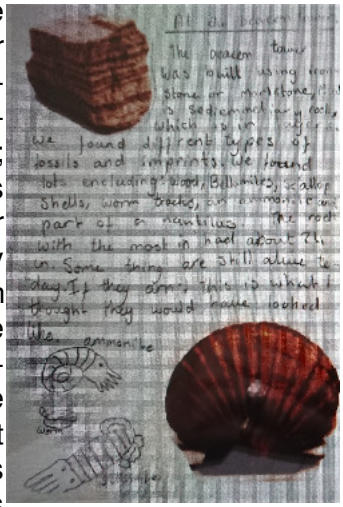
The Quarry's rocks contain fossil wood, bivalves, worms and brachiopods; they suggest deposition in a shallow-water nearshore environment, such as a sub-tidal barrier bar as can found in large river estuaries where they can impound a lagoon. The section is irreplaceable and, of course, it shouldn't be hammered.

WGCG
Hidden wonders in the landscape of Warwickshire

Reaching out to Warwickshire Schools

Primary Schools

Since 2014, Warwickshire GeoConservation Group (WGCG) volunteers have been undertaking geological fieldwork with Year 6 pupils from Warwickshire schools. The Burton Dassett Hills have provided opportunities in summer for pupils to tackle practical tasks relating to their geology. Sessions can be tailored to the ability and previous knowledge of the pupils; for some, the lesson takes place near the start of their topic whilst others are already quite knowledgeable. Coach transport and expenses have been underwritten by the Holloway Award, which likewise funds prizes for the best follow-up work *(see right)*; this can well exceed expectations in terms of geological understanding and presentation skills and always reflects the children's enthusiasm.



So far, Esme and I have led 12 sessions in five Warwickshire schools. These are an hour-long and based on 10 sets of rock specimens, with two, thee or four pupils sharing each set. Blocks of red sandstone (from Bridgnorth), basalt and Wenlock Limestone (from the West Midlands) were broken into small pieces. Pieces of slate came from a Morrisons car park, but pieces of marble and granite were more difficult to obtain, even with the help of a local stonemason.

At the start of the session, the pupils have to group their set of six rocks by their own criteria, often 2 X 3, 3 X 2 or a 4 and a 2. Their observations, always praised for being open-minded, are usually based on the rocks' surface nature, colour and lustre. Many notice fossil fragments in the Wenlock Limestone. They are then encouraged to become 'rock detectives' by assessing grain size (large, medium or small) and to decide whether the grains are interlocked crystals or bits stuck together. They then select a specimen to draw and write about using a simple worksheet. Cards are then placed with each set of rocks and the pupils match six descriptions with the six rocks *(see above right)*. Most or all pupil groups complete this exercise correctly. A little help is given to pupils with mistakes before it's time to turn over the cards to reveal each rock's correct name.

The 'Rocks' section in Year 3 is the only one of its kind in the National Curriculum programmes of study. The only other aspect of geoscience in Key Stages 1 and 2 science is a reference to fossils in Year 6 under 'Evolution and inheritance'; this only recognises that living things have changed over time and that fossils provide information about those that inhabited the Earth millions of years ago. There is a section on 'Earth and space' in Year 5. The programmes of study for geography, however, do contain a section in which pupils are expected to be taught physical geography - including rivers, mountains, volcanoes and earthquakes and the water cycle; there are plenty of teacher resources on these topics.

This year, WGCG has been asked to provide input at the primary school we took to Burton Dassett in 2018. Its Year 6 pupils are studying 'Evolution and inheritance'. The idea was to start the lesson with a short PowerPoint presentation on how William Smith recognised that the fossil record can be described in methodical detail based on geological time. Pupils are then given fossil specimens of the ammonite *Liparoceras* and the bivalve *Gryphaea* to investigate how they relate to modern-day creatures. The session ends with another short PowerPoint presentation taking the dating of rocks further and looking at the value of fossils to science. Squeezing all this into three 40-minute slots with pupils proved challenging. As expected, the pupils particularly enjoyed handling fossils and seeing the extra collection taken around the tables while they were working.

Secondary Schools

In secondary education, opportunities to include geology are even slimmer than in the primary years. For Key Stage 3, science is divided into biology, chemistry and physics. The only geoscience in these first three years is within chemistry in the 'Earth and atmosphere' section; this requires the study of: the composition of the Earth; the structure of the Earth; the rock cycle and the formation of igneous, sedimentary and metamorphic rocks. Secondary schools can pay scant attention to the topic with a descriptive approach but with sufficient enthusiasm and expertise by staff, could develop an interesting topic. Except for a small section, on the composition and evolution of the Earth's atmosphere since its formation and anthropogenic climate change, there is no Key Stage 4 geoscience content; a far cry from the original National Curriculum when it was introduced in the late 1980s. Science then was more integrated, and geoscience formed over 10% of the study content. The traditionalists with their three sciences tribalism have regained prominence with geology, astronomy, science and society, etc. now very much marginalised.

The geography programmes of study in Key Stage 3 have at least preserved much of their physical geography (geomorphology) content. In it, pupils should be taught physical geography: relating to geological timescales and plate tectonics: rocks, weathering and soils; weather and climate, including the change in climate from the Ice Age to the present; and glaciation, hydrology and coasts. In Key Stage 4, GCSE Geography courses are now largely human geography based.

Between the 1960s and 1980s, there was a growth in the numbers of students taking 'O' Level, CSE 16+ and then GCSE Geology, as well as 'A' Level Geology in the sixth form. With the introduction of the National Curriculum integrated science for Key Stage 4, GCSE geology numbers plummeted. Numbers at 'A' Level have also declined since then, often due to competition from newer subjects (Computer Studies, etc.). There was a false dawn with the introduction of 'AS' Levels, as students were required to study extra subjects rather than 3 straight 'A' Levels, but the recent reforms have reversed that welcome change. The numbers taking 'A' Level Geology in 2015 were 2,115, compared with 62,250 for Biology and 81,553 for Mathematics. Geology is no longer listed separately in official Government statistics and comes under 'other science'. According to the latest review by the Earth Science Teachers Association, Geology is popular in the schools that teach it, but there are now very few of them.

So, we continue to have generations of citizens poorly educated in the workings and history of the planet they live on. Some aspects, such as basic Earth history, how rocks are dated and how to read geological maps, have never been part of mainstream education. Much of the growth in geology examinations in secondary schools was down to the enthusiasm of geography teachers who, in recent decades, have had to cope with their subject going in and out of favour at the whim of politicians. With human knowledge expanding exponentially, the curriculum getting tighter and subjects such as business studies appearing to be more 'useful', many schools that once taught geology have dropped it. Which, if any, Warwickshire secondary schools still teach geology to examination level is unknown. Therefore, the prospect of WGCG offering future support in secondary schools appears to be very limited.

Norman Dutton

"Now the reason that Heaven and Earth call creative force the soul of things is because they set up curious forms and shapes, and produce the complexities of landscape. An artist with penetrating thoughts and high ideals, whose brush is excellent and whose ink is good, can paint these complexities." Shan Shui Sung Shih Ke (c. 540s?)

A Continuing Varied Programme!

The Black Country Geological Society's programme, for the second half of the year, is as varied as ever:

- Saturday, 15th June (Field Meeting): Lydney Cliffs, Gloucestershire, led by John Moseley (Gloucestershire Geoconservation Trust). Offers views of River Severn and south to Aust Cliffs, the Lydney Cliff section to examine Pridolian sequences. After lunch a visit to Meezy Hurst for part of the Westphalian succession, giving an indication of the intra-Carboniferous unconformable contact with the more steeply folded underlying dolomitic limestone at Howbeach Slade.
- Sunday, 28th July (Field Meeting): Nottingham's Sandstone Caves, led by Tony Waltham. (Engineering geologist and karst specialist). A roughly 90-minute tour followed by a walk through the town to the Tunnel and Castle Rock, with a possible walk via the Church cemetery, time permitting.
- Saturday, 17th August (Field Meeting): An Introduction to Castle Hill. Led by Ian Beech (Wren's Nest Nature Reserve); a walk from the wardens' base to Castle Hill via Bluebell Wood visiting managed and unmanaged sites, looking at outcrops and logging areas with any geological findings.
- Friday to Monday, 13th - 16th September (Field Meeting): Dorset, led by the Dorset Geological Society.
- Monday, 16th September (Indoor Meeting): 'How and why Earth's land ice cover is changing' by Dr Nicholas Barrand (Lecturer in Geosciences, University of Birmingham); the talk will explore the impact of these changes on global sea levels and downstream systems, utilising airborne and satellite remote sensing tools.
- Saturday, 5th October (Geoconservation Day): Saltwells Local Nature Reserve.
- Monday, 21st October (Indoor Meeting): 'A Geological Grand Tour of the Solar System' by Andrew Lound; a tour of the solar system from the Sun to the far outreaches of the Solar System - illustrated with the very latest images and supplemented by music.
- Saturday, 2nd November (Geoconservation Day): Details to be confirmed.
- Monday, 18th November (Indoor Meeting): 'Minerals of the English Midlands' by Roy Starkey; the talk explores the area's rich mineralogical heritage, setting this into a regional, historical and economic context, and tracing the development of mineral exploitation from earliest times to the present-day.
- Saturday, 7th December (Geoconservation Day).
- Monday, 16th December (Indoor Meeting): Members' Evening and Christmas Social; the annual chance for members to share their geological experiences in a sociable atmosphere with a Christmas buffet provided by the Society.

GEONEWS needs...

***Your* contributions so** that it fully reflects the membership's activities and interests - **do send in your stories!**

GeoWeek 2019
Active Geoscience 4-12 May

Background to GeoWeek

GeoWeek is a collaborative project initiated by the Earth Science Education Forum (ESEF). It launched in 2018 with the aim of promoting 'active geoscience' via a 'week' of field-trip activities taking place across the UK and Northern Ireland during an early week in May. It's managed by the 'GeoWeek SuperGroup'. GeoWeek partners include the:

- British Geological Survey (BGS)
- Earth Science Teachers' Association (ESTA)
- Geologists' Association (GA) and its regional groups
- Geological Society and regional groups
- Scottish Geodiversity Forum
- GeoconservationUK
- Geological Society Northern Ireland (GSNI)
- Petroleum Exploration Society of Great Britain (PESGB)

GeoWeek is a community driven initiative that does not carry any funding. This year, the BGS offered its staff time funding for events at Keyworth, Belfast and Edinburgh. BGS has also supported ESEF since c.2000 by providing secretarial support. John Stevenson of BGS is the current (since 2014) ESEF Secretary and also leads on GeoWeek for the BGS; the GeoWeek SuperGroup is most grateful for this strong BGS support.

Communications Objectives

GeoWeek aims to promote awareness of how geology affects our lives by helping the public better understand how it has shaped the landscape and influenced the industry of a local area. GeoWeek also aims to encourage people to be active and explore their local area. In this way, GeoWeek aims to bring geology and the geologist's profession closer to society. An attempt to measure increased awareness of these aims is gathered via both participant and organiser feedback.

GeoWeek aims to emulate the success of the Spanish Initiative 'Geolodays'. Since 2005, Geolodía (geoloday, the day of geology) has grown its public participation to 56 geological routes in most of the Spanish provinces and Islands. Public participation in Geolodía is estimated to be in the excess of 10,000 people. GeoWeek plans to emulate Geolodía, by increasing its audience to 10,000 people within ten years. GeoWeek also aims to achieve a national coverage of events across the UK and Northern Ireland within seven years. In Spain, this target is measured by an event in each province; in the UK, this could be measured by an event in each region.

Intended Audience

GeoWeek aims to encourage people of all ages and socio-economic backgrounds to be active and explore their local area's geology.

Much Success, but...

In 2019, 76 events were ran across England, Scotland and Northern Ireland with an estimated (extrapolated from survey figures) 2,200 participants; a 135% increase compared with 2018 (including Earthcaches). Events included 'Stone Stacking' *(below, top)* on the Lecale Coast, County Down (in Northern Ireland), an 'E-bike Geotour of the Vitrified Fort' *(below, middle)*, Lochaber (in Scotland), and *(below, bottom)* a Tour of Nottingham's Sandstones' (in England).

The geographical coverage of GeoWeek *(see next page, top)* shows a good general coverage. However, there are

some surprising gaps in the location of events, such as much of Central Southern England, the Welsh Borderland, and the North Sea Coastal regions - opportunities, or challenges, for next year?!!

Pleasingly, there was much positive feedback from the organisers of GeoWeek events; Most (95%) of the organisers rated their organising experience as either 4 or 5 (5=very good) and they included comments like:

"It definitely makes you feel fulfilled in your job when the public you are communicating to are engaged and leave informed about geoscience. Outdoors is the best learning and communicating environment in my opinion!"

"It always amazes me how interested people are. The landscape and rocks beneath Britain are so varied that it is easy to captivate people and to surprise them with facts like England and Scotland were once separated. Also helping them to realise how useful rocks and minerals have been (and still are) whether that's for storing water, supplying building materials or for future geothermal energy."

"It shows the value of Earthcaches (and GeoWeek that gave me the impetus) and how we can teach Earth Science to a class even when we are not there!"

Positive feedback was also recorded from participants; they were, for example, asked to provide feedback on what really stuck in their minds about their trip; some selected comments are:

"How Ireland was formed!"

"Variety of building stones. Inspired to look at buildings."

"Fabulous demo of oceans closing and creating folds."

"Variety of Somerset geology..."

"The series of lava flows and how they interacted with the landscape of the time."

"How Sgurr of Eigg was formed when the Atlantic opened."

The Future

The next GeoWeek is scheduled for 9th–17th May 2020. For 2020, we are aiming to increase the number of events and further spread their gegraphical coverage. To achieve this we need your help, so please do plan an event for next year, adding the detail to the GeoWeek website at:

https://www.bgs.ac.uk/geoweek/participate.html

Do also advertise the event locally; our 'publicity toolkit' should help; it's on the GeoWeek website at:

https://bgs.ac.uk/geoweek/toolkit.html

Then, of course, run the event (and, if you can, collect feedback from participants. Please also complete the organiser questionnaire at:

https://www.bgs.ac.uk/geoweek/evaluation.html

Finally, do sit back afterwards and contemplate a job well done! By working *together* we can being the GeoWeek experience to a much wider public in the future.

Chris King (Chair, ESEF)

GEOTUR 2019 Conference

Conference Themes: Geotourism, Mining Tourism, Sustainable Development, Environmental Protection.

Conference venue:
EA Hotel Kraskov, Starý Dvur, Czech Republic.

Conference Web-site: https://geotur.tuke.sk/conference/index.htm

Preliminary Conference Program

- 23rd October, 2019 - Presentations
- 24th October, 2019 - Presentations
- 25th October, 2019 - Field trip

Important Dates

- 1st September, 2019 - Abstract submission
- 10th September, 2019 - Conference Registration
- 25th September, 2019 - Fee payment

The official conference languages are English, Slovak, Czech and Polish. Authors do not need to register for the conference prior to submitting an abstract; following acceptance into the programme, at least one of the paper authors must register by 10th September, 2019.

Field Trip Report (Saturday, 15th June) Lydney Cliff SSSI and Mallards Pike Lake, Gloucestershire

Lydney Cliff

Cool, cloudy and wet conditions greeted our visit to Lydney Cliff on the Bristol Channel. We met the walk leader, John Moseley (Gloucestershire Geology Trust), at the eastern end of Harbour Road, Lydney Docks at 10.30 prior to walking to the cliffs *(see below)*. Our first stop was a red-brown and greenish-grey mudstone exposure, the Raglan Mudstone of Pridoli age that sits at the very top of the Silurian. It was deposited in an intertidal setting with rivers flowing into it. This is not too dissimilar from what we can see happening today in the adjacent Bristol Channel, except that the Raglan Mudstone was deposited on a much grander scale along a more extensive coastline. Overlying the Raglan Mudstone is a greyish-white and dark purplish-red fossil soil, or calcrete.

With the tide out, we took a soggy walk along the edge of the Bristol Channel, looking at the cliff exposures. Underlying the calcrete and mudstone are contorted brown micaceous sandstones containing fish scales. These sandstones belong to the underlying Downton Sandstone Formation, also Silurian in age. The strata within the Lydney Cliff exposures are faulted and tilted north-south on a vast anticlinal limb hinting at tectonic forces working over geological time. Cyclic repetitions (cyclothems) within these strata indicate fluctuating climate changes over similar long time periods.

Mallards Pike Lake

The morning rain stopped, and conditions began to improve, as we walked back to our cars for our lunch and a drive to our afternoon stop. About 7km north-west of Lydney, Mallards Pike Lake is a woodland park with paths cutting through it surrounding an artificial lake. These are a legacy of historical mineral extraction and mineral railways. Today, walkers and cyclists have replaced the heavy machinery that once exploited this area.

We followed a track into the woods and stopped at an exposure of thinly and thickly bedded deep brown sandstone beds with a shallow dip (approximately 10°). Closer examination revealed plant impressions and black plant fragments. These beds belong to the Trenchard Group Sandstones that form part of the Westphalian D, Upper (unproductive) Coal Measures. These form the edge of the Forest of Dean Coalfield.

Continuing along the track we passed over a hidden unconformity and stopped at a quarry containing steeply dipping dolomitic limestone belonging to the Carboniferous Main Limestone. Dolomitic rhombs of magnesium carbonate give this rock a sandy texture which make it sparkle in the right light. The Main Limestone forms the edge to the Forest of Dean basin that dips steeply in the east where it encounters the Malvern Axis, and less steeply in the west. Sections across the Forest of Dean show the Coal Measures syncline sitting unconformably within the eastern half of the Forest of Dean basin.

As we walked, conditions continued to improve and the sun came out! We finished around 4.00 with tea in the Mallards Pike Lake visitor café. *Andy Harrison*

Charles Lyell's Notebooks - The Appeal

The notebooks and manuscript collection of the renowned Scottish geologist Sir Charles Lyell (1797-1875) recently have been privately sold by an heir to an unnamed foreign buyer. Lyell was a key figure in the history of geology and science. He is probably best known for writing the 'Principles of Geology', still in print, which presented the idea of uniformitarianism.

The 294 notebooks and manuscripts contain Lyell's conversations with fellow scientists including his transcribed correspondence with Charles Darwin; Darwin once wrote *"I always feel as if my books came half from Lyell's brains"*. The archive also contain Lyell's notes for his printed works; they record his developing ideas about the uniformity of nature including early ideas on climate change, extinction, and biodiversity. This invaluable geo-historical resource is at risk of going abroad, and might well then be lost from public view or broken up in a subsequent resale, unless a UK buyer can be found.

The Reviewing Committee on the Export of Works of Art and Objects of Cultural Interest recommended that the necessary export licence be deferred until 15th July 2019, now extended up to 15th October 2019. Fortunately, HMRC and other parties have agreed a Private Treaty Sale, which with the tax removed has reduced the original purchase price of £1,444,000 to £966,000.

The University of Edinburgh is fund-raising to purchase and conserve the collection; it will then make it available on-line to the public for free. Over 800 private pledges, together with the University's contribution, has seen over £610,000 raised, almost two-thirds of what is needed. Pledges, only redeemed if the University's bid is successful, can be made via the website:

https://www.ed.ac.uk/giving/save-lyell-notebooks/pledge-to-save

GCUK's Executive Committee recognises the collection's importance and supports this fund-raising initiative.

Xth International ProGEO Symposium [in Segovia (Spain), 8th-11th June 2020]

This symposium is an international event open to scientists, students, educators, professionals, decision-makers and anyone involved in geoconservation. The symposium is organized in conjunction with several geoconservation organizations also hosting their meetings in Segovia during the same dates. These include:

- a Workshop of the IUCN WCPA Geoheritage Specialist Group (GSG),
- the 1st Workshop on Geoheritage of Volcanic Islands,
- the 4th Meeting of ProGEO's Southwest Europe Regional Working Group,
- a meeting of the African Geoconservation Group of the EU-funded PanAfGeo project, and
- a meeting of the Geoherithage Commission of the Association of Iberoamerican Geological and Mining Surveys (ASGMI).

Symposium website:
http://www.igme.es/patrimonio/Xprogeo2020/

The Symposium will provide the opportunity to discuss the new challenges and threats in global geoconservation. The knowledge and experience acquired within ProGEO during the last decades at national, European and global levels projects this scientific organization as the international leader in geoconservation. Recent developments include issues such as methodologies for the inventory of Geological Sites of Interest, geoconservation in natural protected areas, benefits and impact of rural development and geotourism in geoparks, legislation and management in a global conservation framework. The Symposium will promote communication and collaboration amongst the different stake-holders and actors in modern geoheritage conservation from all over the world present at the various joint meetings taking place at Segovia.

Fieldtrips

Three optional fieldtrips are planned:

PRE-SYMPOSIUM FIELDTRIPS

Geoconservation and public outreach in Molina-Alto Tajo UNESCO Global Geopark
Convener: Luis Carcavilla Urqui. Researcher at Spanish Geological Survey (IGME)

Geoheritage in protected areas of central Spain
Convener: Enrique Díaz-Martínez. Researcher at Spanish Geological Survey (IGME)

POST-SYMPOSIUM FIELDTRIP

Flysch & Karst experience in Geoparkea/Basque Coast UNESCO Global Geopark.
Convener: Asier Hilario, scientific director of the Geoparkea/Basque Coast UNESCO Global Geopark.

Important dates

2019	
15th October	■ Opening of on-line registration ■ Opening of abstract submission
2020	
15th February	■ Deadline for payment of early registration fees with reduced rates ■ Publication of 2nd circular
1st March	■ Deadline for abstract submission
15th May	■ Deadline for on-line registration and regular payment of registration fees
SYMPOSIUM	
6th - 8th June	■ Pre-symposium fieldtrips (optional)
8th June	■ Intensive course on Geoheritage Interpretation (optional) ■ Registration and icebreaker party
9th - 11th June	■ Technical sessions 10th June ■ Half-day intra-meeting itinerary: *Urban geoheritage in Segovia* 11th June ■ ProGEO General Assembly ■ Farewell dinner (optional)
12th - 14th June	■ Post-symposium fieldtrip (optional)

Humphry Davy Notebooks Project

Sir Humphry Davy (1778-1829) was one of the most significant and famous figures in the scientific and literary culture of early 19th century Britain, Europe, and America. His scientific accomplishments include: conducting pioneering research into the physiological effects of nitrous oxide (commonly called 'laughing gas'); isolating seven chemical elements (magnesium, calcium, potassium, sodium, strontium, barium, and boron) and establishing the elemental status of chlorine and iodine; inventing a miners' safety lamp; developing the copper sheeting electro-chemical protection of Royal Navy vessels; conserving the Herculaneum papyri; and writing an influential text on agricultural chemistry. He was a founder member of the Geological Society and delivered a series of public geology lectures at the Royal Institution in 1805. Davy was also a poet, moving in the same circles as Lord Byron, Samuel Taylor Coleridge, Robert Southey, and William Wordsworth.

The Davy Notebooks Project has recently launched on *Zooniverse*, the world's largest and most popular platform for people-powered research. The notebooks selected for this pilot run of the Davy Notebooks Project reveal how Davy's mind worked and how his thinking developed. Containing details of his scientific experiments, poetry, geological observations, travel accounts, and personal philosophy, Davy's notebooks present a wide range of fascinating insights. Many of the pages of these notebooks have never been transcribed before.

By transcribing these notebooks, more will be found out about the young Davy, his life, and the cultures and networks of which he was a part. All you need to contribute is a *Zooniverse* account - you can sign up today at:

https://www.zooniverse.org/projects/humphrydavy/davy-notebooks-project

Any questions can be sent to:

humphrydavyzooniverse@gmail.com

Alternatively, they can be posted on the *Zooniverse Talk* boards. Project updates will be posted to the Twitter account at:

https://twitter.com/davynotebooks

"The Geological Society's Proceedings for the decade include multiple reports from F.W. Simms, the resident engineer directing the South Eastern Railway's progress through Kent. On occasion Simms took his excavations beyond what was strictly necessary, purely in order to clarify a stratigraphic problem. In 1853 geology even acquired a railway martyr, when the distinguished amateur Hugh Strickland [see the vignette, middle right] was hit by a train near Retford in Nottinghamshire. On his way back from a meeting of the British Association, Strickland had stopped off to examine the rocky cuttings near the mouth of Clarborough Tunnel. Notebook in hand, he stepped away from the rails to avoid a coal train. An express on the other line then burst from the tunnel, killing him." *Simon Bradley (2015)*

Hugh Edwin Strickland (1811-1853)

Strickland read a joint paper with Murchison to the Geological Society *'On the Upper Formations of the New Red Sandstone System in Gloucestershire, Worcestershire and Warwickshire'*. He published on the Vale of Evesham's geology and described the Bristol Bone-bed near Tewksbury and the Ludlow Bone-bed at Woolhope. He also published on the *'drift deposits in the counties of Worcester and Warwick, drawing particular attention to the fluviatile deposits of Cropthorne in which remains of hippopotamus, &c., were found'*. He co-edited with Buckman the second edition of Murchison's *'Outline of the Geology of the neighbourhood of Cheltenham'*. In 1850, to cover Dean Buckland's illness, he was appointed Deputy Reader in geology at Oxford University.

Advance Notice of the 2019 Annual General Meeting of GeoConservationUK

It is planned to hold the next GCUK AGM on Saturday, 19th October, 2019 to coincide with the Geologists' Association 2019 Annual Conference; this will be held at the University of Manchester and the Manchester Museum. Further details will be forwarded in due course to GCUK's Principal Contacts. The GA Conference details can be found at:

https://geologistsassociation.org.uk/conferences/

General information about the Manchester Museum can be found at:

https://www.museum.manchester.ac.uk/

It is hoped that the Manchester location will suit a large number of GCUK member organisations and individuals, some of whom - as at last year's AGM in Birmingham - will be attending the GA Conference. For those not attending the conference itself, the Manchester Museum will provide an excellent diversion, much as the Lapworth Museum did last year.

Copy for the next GEONEWS issue, due out in November 2019, must be with the Editor by 27th October 2019 at the very latest.

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

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