# GEOconservationNEWSletter

Autumn & Winter 2020 issue

## *The Editor's Thanks and...*

**W**elcome to the delayed, having patiently awaited news of changes in the Government's approach to the pandemic for how it might impact on the future work and events of GCUK member groups, second issue of the newsletter for this exceptional year. With the various 'lock downs', now 'tiers', and changing advice/rules it's been a challenging, as it now seems it will be for much of the next, year for anyone trying to do any conservation work in the field. However, just like Christmas baubles, there's been much time for reflections on our work and just a little for doing something practical - that's ranged from site monitoring and scrub clearance to preparing interpretive materials and actually publishing new geotrails.

**A**s usual, a big *"thank you"* to everyone who remembered to mail in something for this issue, and also to those of you who didn't object too much to my gentle reminders. Additionally, it's been pleasing to see how many of our member groups' committee members have joined and posted on our Facebook page at:

https://www.facebook.com/groups/geoconservationuk

**I**t's been a really good way of keeping in touch and hopefully supporting each other; it's planned to broaden the possible membership in the near future. Meanwhile, don't forget to look at the GCUK web-site pages at: https://geoconservationuk.org/ - a few publications might be of some interest?!

**D**o distribute this newsletter to your colleagues, friends and even family. I'll close by wishing you all the best of seasonal greetings with the hope that 2021 will see you all safe and well, fully able to enjoy the UK's great geology across all the nations without hindrance.

*Tom Hose*

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## GeoConservationUK Update

**A**s we near the end of 2020 it is time to reflect on things. One of the more positive aspects has been the ability to attend more online lectures and meetings (usually free) than would have been possible otherwise, but, like most people, I miss face-to-face meetings and the ability to go out with groups to look at geological features and discuss these. We must just hope that 2021 will allow us to take forward the best aspects of virtual and real geology. One thing that I have been aware of is that a virtual platform allows us to communicate worldwide and the positive things that can bring. I have noticed that in many meetings there are large numbers of younger people which is fantastic.

**I**t has been a challenging year for the GCUK member groups and it has been good to see articles sent in from some detailing recent activity and there are some lovely reports on the Facebook page as well. The Executive Committee has managed to meet on a regular basis and the pandemic has made this easier by enforcing us to hold virtual meetings rather than in person. Virtual meeting are the way forward for an organisation like GCUK and I hope that this means that more of you will feel able to become more involved.

**A** sad note is that at the start of the year we lost Alan Cutler, a long time GCUK member and friend; furthermore, his enthusiasm and knowledge cannot easily be replaced. Alan also acted as Treasurer for GCUK for many years and that is a position on the Executive that needs filling - please let us know if either you or anyone else would consider taking on this role.

**L**ikewise, on another sad note we also lost early in the year Craig Slawson, our database expert and webmaster; his knowledge and expertise, and his contacts with the wider nature conservation movement, are also difficult to replace - so, if anyone...

**A**s you are aware, we generally hold our Annual General Meeting in the autumn. However, this year we unfortunately have had to postpone it until the spring of next year due to a range of factors (a lot of them due to an IT incident at my work and moving teaching online for some of us). Meanwhile, now it is time to plan for the future, learn from the changes 2020 has forced upon us, and ensure that we are moving forwards, not just standing still doing the same things with which we are all familiar and comfortable.

**W**ith that I am going to throw open some items to discuss and engage with the membership:

- **W**ould you like to join the Executive Committee and bring new expertise to it? The commitment is approximately four meetings per year (which can be virtual); most of the Executive Committee are due to 'retire' this year and are willing to stand again, but they really would welcome new people and ideas.
- **A**re there any national projects that you think GCUK should be helping to coordinate and get together funds for? In the past we have coordinated various projects on site condition and monitoring and designation which has brought some funds to all groups. Which aspects are important to you?
- **I**n Scotland the newly formed Scottish Geology Trust has charitable status, which sometimes helps for gaining funding; Is this something GCUK should look at?
- **W**hat one thing would you like GCUK, collectively, as the only whole-UK geoconservation body to aim for in 2021? Remember, GCUK is your organisation and it should meet your needs.

- **H**ave you any other thoughts?

**F**or several years, I have done a 'Winter walk on Winter Hill' for various groups which I guess this year will be a family group only - providing I am allowed to travel there. Look out for updates on the Facebook page. Hoping you have a good Christmas and New Year and are looking forward to 2021. *Lesley Dunlop (GCUK Chair)*

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## DIGS Conservation Activities: Summer and Autumn 2020.

**D**espite problems of COVID-19, the DIGS group has continued to carry out conservation work at various sites during the summer and autumn.

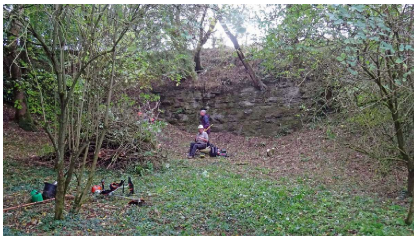
**D**uring July we spent time at our Poxwell site clearing vegetation *(see left)* facilitating access to the rock face in this former quarry as well as working on a nearby lime-kiln. Before the COVID-19 outbreak we were hoping to put an information board on this site, but this has been put on hold. There is a well-established path through the area covering the Poxwell anticline, for which a leaflet has been produced, and an information board will provide interest for passers-by. As a result of financial help in the past the group has a brush cutter which has proved extremely useful helping to keep the site accessible. Because of our conservation work this locality provided stone *(above left)* for conservation work *(above right)* on the riding house at Wolfeton House near Dorchester.

**A**gain, in July we spent a morning *(see left)* at our Chalk pit site at Kingston Maurward, east of Dorchester. This site had been neglected since 2016, so it was important to spend some time there.

**R**ed Lane Quarry, Abbotsbury also had been neglected since 2016. So we felt it was important to spend some time there *(see right)* on maintenance work. As with many other of our sites. it is a matter of clearing vegetation (especially in this case, ivy - but elsewhere scrub vegetation) so that the rock face can be clearly seen.

**A**nother site of much interest is Wanderwell *(below left)* on the outskirts of Bridport. Roger, one of our long term members - who lives nearby - has been working on the site for several years and with the help of other members *(above right)* has created a fine site including an information board *(see right)* designed by Roger's wife, Pat.


**I**n October we spent some time at our site in Poole at Whitecliff *(see right)* where gorse and brambles are a problem. This site is very accessible, and our conservation activities attracted the attention of several passers-by. Again, an information board helps to spread the word!



**W**e also returned to our site at Holt Farm *(see left)* where Forest Marble is exposed. Here we cleared nettles and moss that thrives on the north-facing rock face!

**S**o, a good selection of activities and with appropriate social distancing! We have been working on Crookhill brick pit SSSI, but more of that next time. Information on these and our other sites can be found on our web-site at:- https://dorsetrigs.org *Alan Holiday (Chair, DIGS)*

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***"…as I advanced the crags seem'd to close in, but discover'd a narrow entrance turning to the left between them. I followed my guide a few paces, & lo, the hills open'd again into no large space, & then all farther way is bard'd by a stream, that at the height of about 50 feet gushes from a hole in the rock, & spreading in large sheets over its broken front dashes from steep to steep, & then rattles away in a torrent down the valley. The rock on the left rises perpendicular with stubbed yew-trees & shrubs staring from its side to the height of at least 300 feet, but these are not the thing! It is that to the right under which you stand to see the fall, that forms the principal horror of the place. From its very base it begins to slope forwards over you in one black & solid mass without any crevice in its surface, & overshadows half the area below with its dreadful canopy."*** **(Gray in Robinson, 2001, p.121)**

WGCG
Hidden wonders in the landscape of Warwickshire

# Warwickshire GeoConservation Group

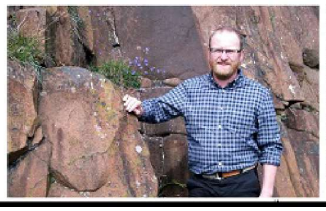
**A**s have many member groups, WGCG has had to postpone and then cancel activities. It's also had to run its lecture programme as an on-line 'Zoom' offering; this clearly hasn't impacted on the usual excellent range of topics - as can be gauged from some of their posters *(see below)* from July to December - and their delivery.

**WGCG evening talk Wednesday 8th July, 2020 at 7.30pm on Zoom**

***Contrasting islands: the geology of Eigg and Rum*** **by Angus Miller**

Abstract:

The Hebridean islands of Eigg and Rum are separated by just a few miles of sea, but could hardly be more different in their scenery, topography and land use. Of course this is due to the underlying geology. Both islands have a basement of sedimentary rocks (formed 800 million years apart!). Then, 60 million years ago, this area was a focus of volcanic activity: Eigg is mostly formed by the eroded remains of extensive basalt lava flows, whereas Rum was the site of a central volcano. It is a fascinating clash of rock types and morphologies that has formed two contrasting islands.



Angus has been leading Geowalks since 1998, including day walks, walking holidays and group excursions covering many aspects of the geology of Scotland. He's also been involved as a volunteer in Lothian and Borders GeoConservation, particularly in public outreach events and leaflets. He was chair of the Scottish Geodiversity Forum from 2011-2020, responsible for publishing and promoting Scotland's Geodiversity Charter, and is now Secretary of the new Scottish Geology Trust.

**WGCG evening talk Wednesday 19th August, 2020 at 7.30pm on Zoom**

***Mining in North Wales*** **by Rob Vernon**

Parys Mountain Copper Mine, Anglesey

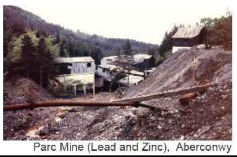
This talk will begin with an introduction to the geology of North Wales before discussing the most important minerals worked (copper, lead, gold, slate, coal and a few "miscellanea"). We will then take a round trip of the various mining districts, including perhaps the best known copper mine in Wales (at Parys Mountain on Anglesey), as well as the Parc lead and zinc mine at Abereonwy and the Gilfach copper mine in Caernarvonshire, among many others.

Register in advance for this meeting by going to this link:
https://us02web.zoom.us/meeting/register/tZwudOCvqDkvGtEXfjvdKvFrIgO90U308Nm7

Gilfach Copper mine, Caernarfonshire

***Rob Vernon*** *worked for 24 years in the U.K. Coal Mining Industry (deep mines) before embarking on research in archaeological prospection at Bradford University, where he presented his doctoral thesis on British Sites of Smelting. Since then he has written extensively on Mining History, especially of Wales and the Iberian Peninsula, and is currently investigating the history of British Mining Technology introduced into Japan during the Meiji Restoration.*

*Rob will be known to some WGCG members as the leader of a walk around the Bredon Hill outlier as part of last summer's field programme.*



Parc Mine (Lead and Zinc), Aberconwy

**WGCG evening talk Wednesday 21st October, 2020 at 7.30pm on Zoom**

**From Coprolites to Cholera – the extraordinary life of William Buckland**
**presented by Peter Lincoln**

William Buckland (1784-1856), Oxford's first 'Professor' of geology, was a central figure of the 'heroic' foundational age of geological investigation. Buckland was a meticulous scientist and a devout, if sometimes rather too down-to-earth, clergyman. A charismatic lecturer, his flamboyant delivery stimulated his admirers and scandalised his detractors and, as a result, he was both venerated and vilified in life and, since his death, his eccentricities have often been more remembered than his achievements. However, Buckland's foundational work in stratigraphy and palaeontology – his explanation of a hyena den at Kirkdale won him the Royal Society's Copley Medal – and his early acceptance of glacial theory put him firmly at the forefront of early nineteenth century geological endeavour. Equally at home with queens and quarrymen, William Buckland's humanity shone through in everything he did. Appointed Dean of Westminster in 1845, he did not hesitate to use his new position to advocate scientific solutions to the problems of famine and disease. In this talk I shall aim to restore the memory of this geological hero by describing his long and eventful life and outlining some of his many achievements, both in geology and in the wider world.

**Peter Lincoln** retired from careers in shipbuilding and school science-teaching to pursue his interests in the history of science.
A UCL MSc dissertation project on the foundation of Ipswich Museum lead to a fascination with the person and character of William Buckland, whose life and work now form the focus of his further studies towards a PhD at the University of East Anglia.

**WGCG evening talk Wednesday 14th October, 2020 at 7.30pm on Zoom**

***Fifty years of plate tectonics: past, current and future questions***
**presented by Marco Maffione**

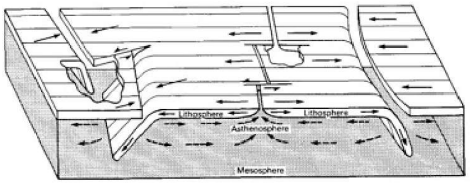
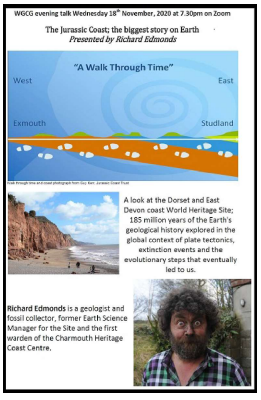
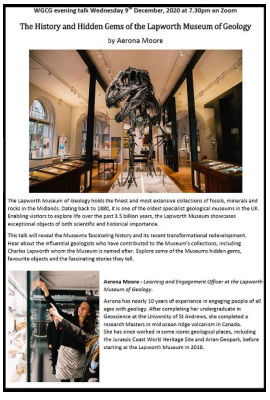



*Image drawn by Isacks et al. [1968] representing the first graphical description of how plate tectonics works.*

**Outline**
Plate tectonics is the most unifying theory in Earth Sciences and one of the top five most relevant theories in the Sciences. Plate tectonics is the simple and elegant explanation of how our planet has been, is, and will be shaped by the continuous movements and interactions of tectonic plates. I will guide you through the long journey of scientific discoveries that brought several scientists with different backgrounds to contribute to the birth of the plate tectonics theory, ultimately formulated just over 50 years ago. Since then we have understood much of how our planet works, which helped in the '90s to reach a new important discovery on how our oceans expand. Today we still have several questions about key processes, such as the formation of new subduction zones, which represent new challenges for the current and future generations of Earth scientists.

**Profile of Dr Marco Maffione**
Marco is a Lecturer in tectonics and structural geology at the University of Birmingham, where he studies large-scale tectonic processes at plate boundaries using structural geology and palaeomagnetism. He is author of 30 publications in the field of global tectonics and is currently leading a £200k project focused on understanding subduction initiation processes.

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## More Discontinuity!

We held a virtual Committee Meeting in June to discuss our indoor meetings. The Committee decided that we did not want to hold indoor meetings at a different venue, so we would wait until we have firm news about the re-opening of the University before finalising the Winter Programme.

The Committee decided that all field meetings should be suspended until it was known whether our Public Liability Insurance is still valid during the Coronavirus pandemic; we asked the Geologists' Association (which arranges the insurance for us and several other geology clubs) for clarification.

Our picnic at Mappleton, on the evening of 30th June, had to cancelled. Our field meeting to Skipsea, on 4th July, also had to be cancelled. The field meeting to Barmston and Fraisthorpe in September was postponed. Finally, in November, the Committee was forced to postpone all lectures and other indoor meetings until Easter 2021, because of the COVID-19 pandemic. We still hope to be running a few field meetings within Government guidelines, and we will offer members some virtual meetings; their details will be posted on the Society's web-site.

Hopefully we can get back to normal next summer!

*Mike Horne* (Secretary)

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## Castle Spring and Carter's Pit, Burwell: Two New Local Geological Sites

The Society is very pleased to announce that its latest proposal for two new designations of Local Geological Sites (LGS) was recently (October, 2020) approved by the Cambridgeshire County Wildlife and Geological Sites Panel. Both are in the village of Burwell.

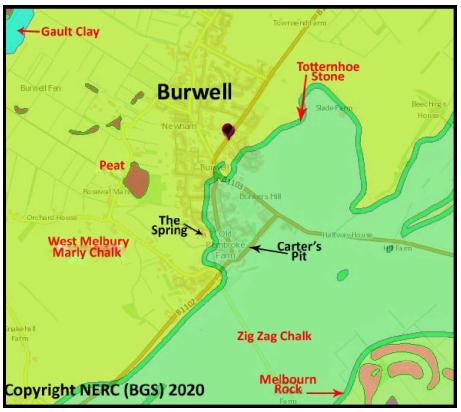
Burwell lies north-east of Cambridge *(see map, below left)* on the eastern chalk escarpment demarcating the edge of the Cambridgeshire fen. It has a long history of settlement and geological exploitation – in particular the harder chalk bands known as "clunch". The Burwell LGSs join the other two others to the southwest of Cambridge that are also associated with the chalk.


The two sites are a


mere 400 metres apart *(see map, left* and are linked by the presence of the Cretaceous Grey Chalk Totternhoe Stone horizon – a famous and ubiquitous East Cambridgeshire building stone. The new sites have been chosen due to their importance, both to the area and to the understanding of the local geology.

### The Area's Geology

The village of Burwell gently slopes from the High Town area around St. Mary's church down to the fen level at North Street (NNW extent). The bulk of the bedrock *(see geology map, below left)* is Grey (Lower) Chalk, younger than 100 million years old, and the village straddles the Totternhoe Stone horizon; this is a very recognisable horizon, approximately 6 metres thick, roughly in the middle of the Grey Chalk It's harder than the rest of the Grey Chalk and its position on the ground is typified by springs emanating near to its base; the Totternhoe Stone is more fissured than the less pervious marl below, giving rise to the springs. The Totternhoe Stone is locally termed Burwell Rock or Clunch and has been extensively quarried in the past from the southeastern part of the village.




In terms of lithology *(see stratigraphy table, below)*, the West Melbury Chalky Marl is a buff/grey, soft, clayey chalk

GENERALISED STRATIGRAPHY OF CAMBRIDGESHIRE

| EPOCH | AGE | GROUP | LITHOLOGY | FORMATION/GROUP |
|---|---|---|---|---|
| QUATERNARY | Holocene 0.011Ma | | | Fluvial mud / silts, Intertidal, Peat |
| | Pleistocene | Anglian | | Glacial and Fluvial deposits |
| 66Ma | | White Chalk Group | | Holywell Nodular Chalk |
| CRETACEOUS | Cenomanian | Grey Chalk Group | | Zig Zag Chalk |
| | | | | Totternhoe Stone ← Burwell Pit |
| | | | | West Melbury Marl ← Burwell Spring |
| | 100.5Ma | | | Cambridge Greensand |
| | Albian | Gault Formation | | Gault |

with some traces of glauconite: the high clay content makes it impermeable. The Totternhoe Stone is a grey, harder chalk which has comminuted fossil fragments to

give a slightly "gritty" nature. The highest layer seen, the Zig Zag Chalk, is a slightly purer grey/off-white chalk, blocky in appearance; this latter makes up the quarry wall in Carter's Pit.

**The Spring:- T**he junction of the Totternhoe Stone (aka Burwell Rock) or Clunch) can be seen *(see below right)* on top of the West Melbury Marly Chalk. As this latter rock is much more clay rich than the overlying Totternhoe Stone, it acts as a natural spring line throughout the Eastern Fen Edge of Cambridgeshire (see Nine Wells LGS). Springs like this occur all along the Fen edge escarpment on this eastern side of Cambridgeshire. This is one of a few places where the water can be observed emanating from the bedrock which can also be examined *(see below)*. The spring site has been

settled from pre-Roman times – no doubt the availability of the water was a prime driver. The spring feeds a chalk stream (the Burwell Brook) which meanders its way along the western boundary of the village to merge with Burwell Lode – an historic transport route.

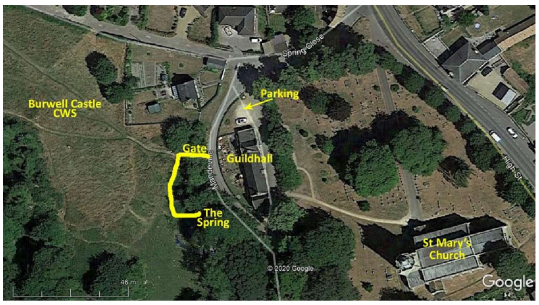
**Carter's Pit:- T**his worked-out quarry *(see below right)* at the eastern edge of the village is rare in that accessible quarry walls are still visible. The pit was dug *(see below left)* to win the Totternhoe Stone, but this has been exhausted


and the quarry backfilled so that the Zig Zag Chalk *(seen in the quarry's back wall, above right)* is the main horizon visible. The harder Totternhoe Stone layer forms the spine of the marked escarpment that runs SW / NE along this eastern Fen edge of Cambridgeshire. There are a

string of villages nearby built upon the chalk ridge forming the higher (drier) ground. The stone was used in local buildings as well as the more "famous" Cambridge University colleges and Ely Cathedral. Again, it is rare to have exposed bedrock accessible and visible to the general public.

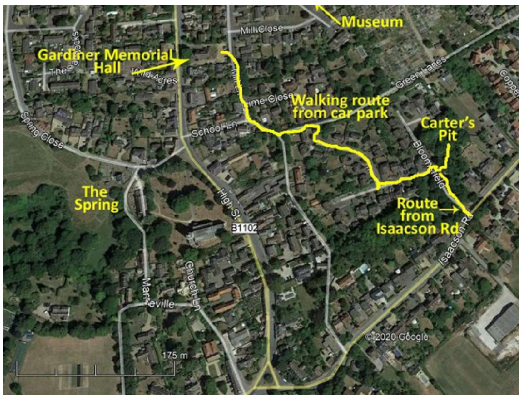
## How to Get to the Sites

**The Spring:- T**his is reached *(see map, below)* by entering the Spring CWS site from Mandeville Lane (behind the Guildhall). Once through the gate, bear to the left down into a hollow. Keep to the left and the spring is in front of you. Some parking beside the Guildhall may




be available or the Stagecoach 11/11a bus service from Cambridge/Newmarket (check website for schedule).

**Carter's Pit:- T**his is accessed *(see map, below)* from down a housing estate road (Bloomsfield) off Isaacson Rd. At the bottom of the hill there is a sewage pumping station + yellow grit bin on the right – turn right along a path into the woodland. A short flight of steps leads to the current quarry floor and a view of the exposed cliffs. Parking is best in the car park of the Gardiner Memorial Hall on the High Street and then walk through Mill Lane at the back into the Bloomsfield housing estate as per the map above. Alternatively, take the Stagecoach 11 / 11A bus from Cambridge / Newmarket which stops on the High Street (best to check their web-site for schedule!).




*Chris & Reg*

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***"The new mine, Devon Great Consols, was the richest copper mine in Europe and counted among its investors the mother of William Morris. Vast fortunes were made: £1 shares soared to hundreds of times their original value. The copper lode was over thirty feet thick, and there were forty miles of underground levels. On the surface, the muddy scar across the landscape covered 140 acres."*** **(Goodhall, 2007, p.86)**

## A Cancellation and LGS Progress

We had to cancel the outdoor meeting, provisionally planned for Monday 5th October, at Ham Hill Country Park; it will not now take due to the pandemic situation. We now hope to work towards something similar, on-site or on-line, for next year.

### Review of Somerset's Local Geological Sites

The good news is that we have been able to continue with desk-work over the last few months for our project with SERC - and revised SWT risk assessments and procedures will shortly enable us to start again with site visits. Wesley (Wes) Harris, our temporary two-day per week LGS assistant at SERC, is working from home, with remote access to SERC; meanwhile, Garry Dawson (my SGG Co-coordinator) has set up Google Hangout meetings, so that Wes, he and myself can coordinate our activity.

John Kirby, Dee Edwards and Dave Williams have started desk preparation and reconnaissance to review some first LGS in South Somerset. Doug Robinson has continued desk-work on Mendip sites. Saranne Cessford, Phil Parker and Garry have been completing desk-work for some LGS in the Taunton area. I have been desk reviewing LGS in the Devon part of Exmoor.

We held the LGS Panel in April as an email consultation, when we reconfirmed c 30 LGS, and will be organising a further Panel consultation for November. Wes has also been working on postPanel processing from earlier meetings.

Our next Update - with more detail on progress with our LGS review - will be April 2021. See our last Update, available on our web page at:-

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

for geo-event organisers relevant to Somerset and our data protection policy.

Anyway, our thanks to everyone from the Group who is helping with the LGS project. It is supported by contributions from: the Curry Fund of the Geologists' Association; the Pat Hill-Cottingham Memorial Fund of Somerset Archaeological and Natural History Society; Exmoor National Park

Authority; the Quantocks and Mendips Areas of Outstanding Natural Beauty; South Somerset District Council; Wessex Water; and Geckoella geological consultancy; with help in kind from many others, including the Mendip-based Somerset Earth Sciences Centre and advice from Natural England.

### South Somerset

We were delighted to hear in June that SERC has been awarded a grant from South Somerset District Council's (SSDC) Community Fund to assist with our LGS review in South Somerset – with the understanding that progress will be slower than originally hoped, as we have not been able to appoint graduate volunteers this summer. SSDC has also won first-stage funding to develop a Lottery bid for its Ham Hill Country Park over the next 18 months. We hope to provide advice and contacts to ensure that geology is fully integrated into the project. Our LGS project focus on South Somerset is timed to help with this.

### Planning

In May we wrote to Somerset County Council to request that information on the LGS at Barnclose Quarry in the Mendips be included in considering an application for screening of proposed development there. We had become aware, from the Mendips planning web-site, of the lack of information on the LGS in the submission,

Barnclose Quarry worked shattered and very variable limestones from 1931. it was operated by Western Trinidad Lake Asphalte (a subsidiary of Limmer and Trinidad) held under lease. Inactive from 1946 to 1954, the site was purchased by Hobbs Quarries Ltd. in 1968, a group based at Backwell near Nailsea. Hobbs and Wimpey merged quarry interests and later became part of Tarmac. Barnclose finally closed in the mid-1970s.

*Wendy Lutley* (Coordinator)

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## The Fens Biosphere Proposal and Conference on 13th January, 2020

The CGS is represented on the Steering Group of the proposed Fens Biosphere. A Biosphere is a special status awarded by UNESCO to a unique and valuable landscape. They connect people, economies and nature to create a secure sustainable future; they're about developing new ways of living, exploring new ideas and working together.

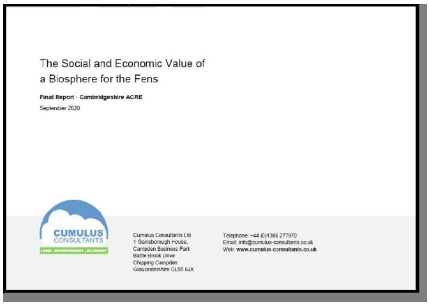
From a geological perspective, the Fens area is unique in the UK due to its Quaternary deposits, including the peat, marine silts and clays, together with numerous collections of glacial and river gravels. In addition, the underlying Jurassic and Cretaceous bedrock has a wealth of interest from world-renowned fossils to numerous industrial resources. The geology forms the basis for the iconic landscape, amazing wildlife and rich culture. Hopefully, the Biosphere designation proposal will go forward next year.

To that end, in summer 2020, the Fens Biosphere Partnership commissioned a report to demonstrate the benefits to an area of gaining Biosphere status. Produced by Cumulus Consultants, it drew on information from other Biospheres, Local Authority strategies and plans, and socio-economic data to explain how a UNESCO Biosphere can add economic value to the

Fens, and enable the area to become a leader in sustainable growth and development. The opportunities identified included:

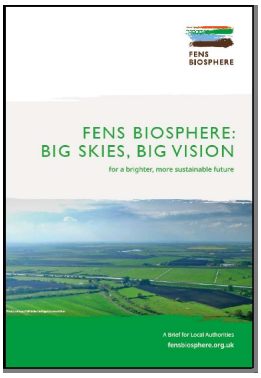
- Accelerating the transformation to sustainability in farming, adding value to agriculture and safeguarding Gross Value Added (GVA);
- Society-wide commitment to managing water and other natural resources responsibly;
- Building a Biosphere brand that signifies sustainability, a high quality environment, and a place to visit and re-locate;
- Diversification of the economy;
- Leveraging in investment and achieving better returns on investment;
- Building international profile and reputation, thereby generating additional investment.

**C**opies of the consultant's report:




can be downloaded at:-
https://www.fensbiosphere.org.uk/wp-content/uploads/2020/10/Social-and-Economic-Value-of-a-Biosphere-for-the-Fens-Final-Report.pdf

**A** summary version for Local Authorities:




can be downloaded at:-
https://www.fensbiosphere.org.uk/wp-content/uploads/2020/11/Fens-Biosphere_Leaflet_Oct2020_lowres.pdf

FENS BIOSPHERE

Fens Biosphere Conference 2021
Big Skies, Big Vision

Register now and join us on Wednesday 13 January 2021
for our online event

**M**eanwhile, an on-line conference *(see masthead above)* is to be hosted by Cambridgeshire ACRE - one of the first Rural Community Councils in the country, established in 1924, its work is about engaging communities to consider a sense of place, encouraging local distinctiveness and drawing upon local assets and social action. The conference in intended to raise awareness of the potential UNESCO Fens Biosphere designation with those living and working in the proposed Biosphere area. It's an opportunity to get and record a wide range of local viewpoints, expertise and experience to help create a balanced design for the Fens Biosphere - one that reflects the need and ambitions of local people. It's obviously particularly important, with the significant underlying geology, that the geoconservation viewpoint is represented.

**T**he conference will be launched by Dame Fiona Reynolds, Master of Emmanuel College, Cambridge and former Director-General of the National Trust. She's an ambassador for the Fens Biosphere and will talk about her vision for the area. A series of presentations will follow, explaining what a Biosphere is, introducing the Fens Biosphere and looking at its potential benefits.

**T**he morning will conclude with an interactive discussion session, where an expert panel will field questions from the audience and this promises to be a lively session. In the afternoon, attendees can opt to attend one of four workshops aimed at exploring why a Biosphere is a good idea. The workshops will focus on: Water; Food & Farming; Wildlife, Green Space & Well-being; and Culture, Identity & Visitor Economy. All workshops will feature expert speakers, video case-studies and plenty of opportunity for questions and answers.

**I**n addition, there will be an on-line networking lounge where participants can drop in and chat on-line with other delegates and there will be an exhibition hall of on-line booths to visit. Cambridgeshire ACRE has brought together several organisations working in this field to showcase what they do. Using the technology, participants will be able to chat to their representatives, pick up leaflets and information and interact almost as if they were meeting them face-to- face. The Conference promises to offer a new experience for most participants. Its draft programme can be downloaded at:-
https://mcusercontent.com/706946ca5d155b3d4f76be096/files/57a22717-a1ab-4042-94ce-9b116c5dba99/Conference_Programme.pdf

**A**ttendance is free and the demand for places is expected to be very high, so signing up early is recommended at:- https://www.smartsurvey.co.uk/s/fb2021/

Feedback regarding the Biosphere proposal can be given at:- https://www.smartsurvey.co.uk/s/FensBiosphere/

**A**ny conference enquiries should be addressed to Rachael Brown at Cambridgeshire ACRE either by telephone (01353 865037) or by email (rachael.brown@cambsacre.org.uk). So, please do get involved if your local to the area or have an interest in geoconservation in Cambridgeshire.

*Chris Donnelly (CGS Geosites team) & IAH*

## Notes and Musings

**S**ome gleanings from recent editions our newsletter give an idea of our activities from summer through to autumn during these exceptional times.

**Ten Years of the Pliocene Forest:- W**e continue our focus on Pliocene flora with a note on *Pinus coulteri* from Barry Hall. This specimen has done well in our Pliocene Forest at Rockhall Wood SSSI - created with reference to the Coralline Crag pollen record - and is one of the tallest trees now. The Coulter pine, or Big Cone pine, is an evergreen coniferous tree, growing up to 24 metres with a single trunk and horizontal to upswept branches. It is native to the coastal mountains of northern Mexico and southern California. Isolated groves can be found as far north as the San Francisco Bay area. Its natural habitats are dry rocky slopes, flats and chapparal at 300-2100 metres, preferring a poorer, well drained sandy soil with a neutral to acid pH. It is sun loving, drought tolerant and therefore suitable for problem areas such as Sutton Knoll! Planted in November 2011 at a height of 50 cms our specimen is now in excess of 8 metres although it is still probably a bit young to bear cones. Leaves are needle like, a glaucous greygreen in colour and in bundles of three. However, its outstanding characteristic are the large spiny cones, 20-40 cms in length and weighing 2-5 kilograms; they're the largest cones of any pine species. However, the timber is light, weak, coarse-grained and rarely used except as fuel wood.

**The Suffolk Dragon:- W**ith our new-found freedom this summer, GeoSuffolk's latest leaflet, hot off the press, gives a variety of ideas for exploring the geology of our coast. Written by Caroline and Richard Markham with funding from Suffolk Coast & Heaths AONB, it covers localities from Corton to Bawdsey (photo below). We have sent copies to libraries along the coast and will make it available at other venues as they open up to the public. Meanwhile, it can downloaded from our website:-

www.geosuffolk.co.uk

**An Erratic at Little Blakenham:- W**e have been using these times of Covid-19 restrictions to check up on Suffolk's many geosites. Whilst walking past the Chalk pits at Little Blakenham, a large stone *(see right)* next to the footpath was discovered; it displays striations and an ammonite – identifying it as an erratic of late-Jurassic age limestone.

**Suffolk Coast and Heaths AONB Work Parties:- T**he next geological Work Party was planned for 1st December. A recent visit to Melton Old Church revealed that the grave of Searles Valentine Wood – author of 'The Crag Mollusca' of 1848 – remains in good condition since clearing by GeoSuffolk and the AONB Work Party in 2015.

Details of. and how to register for, work parties can be found at:- https://www.suffolkcoastandheaths.org/volunteering/volunteer-opportunities/ and keep an eye on our web-site for news of the venue.

**Staying safe on the Coast:- E**ast Suffolk Council has launched a campaign on the importance of staying safe on the coast. *The East Anglian Daily Times* (02.10.20 online) featured the headline: 'Warning issued after people seen climbing rapidly eroding cliffs', with photographs of Bawdsey cliff and beach. Showing Red Crag on London Clay, they illustrate how fortunate we are to have such world-class scientific, educational and heritage sites, giving us a glimpse of the upper part of our planet's crust.

*Caroline Markham*

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## Plans Just Approved for Sutherland Exhibition Centre to Display World-Renowned Geology Collection

**P**lans for a new exhibition centre and visitor attraction to display one of the foremost collections of rare stones, minerals and fossils, have just been approved by the Highland Council. They were put together by the Scourie Development Company (SCDC) for a new community-managed facility *(see below left, for image of the proposed building)*, in Scourie, Sutherland, to display the Donald Shelley Collection.

**N**eil Macdonald, chairman of SCDC, and a member of the Scourie Community Council, said: *"Scourie Rocks will have a huge impact in the area, providing employment, education opportunities and much needed community facilities. We are delighted it has been approved and we can now look forward to progressing the plans and developing funding package for the centre. The SCDC would like to thank all our consultants who assisted in the development of Scourie Rocks with special thanks to our architect, Catriona Hill - now of Oberlanders."* An application to the Regeneration Capital Grant Fund is currently with the Scottish Government. There's also a submitted application for other funding to allow the project to get to building warrant stage and for tender documents to be created. If, these are successful, when the full funding package is in place, the project will go out to tender - hopefully, some time next year.

*Mike Browne* & *Helen Houston*

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***"In the early eighteenth century, John Conyers, an apothecary and antiquary of London, discovered the body of an elephant as he was digging for gravel at Gray's Inn Lane. Nearby lay a flint implement. Today we might well call his elephant a 'mammoth' and refer the implement to the 'Palaeolithic'; in 1715, however, Conyers's beast was dated to the reign of Claudius, the Roman emperor."*** **(O'Connor, 2007, p.1)**

## More Zooming in on Geology.

Like all GCUK member groups, the BCGS has had to run its lecture programme as an on-line 'Zoom' offering; this clearly has not impacted on the usual excellent range of topics. The meetings are hosted by its Meetings Secretary, Keith Elder, and managed by Ray Pratt, and shares access to 'Zoom Pro' with the Warwickshire GeoConservation Group. The Autumn 2020 to Spring 2021 lecture programme is:

**2020 Meetings**

21st September:- AGM (postponed from 16th March) followed by *'Glacial Change and its impact on sea levels'*. Speaker: Dr Lucy Clarke (Senior Lecturer in Physical Geography, School of Natural and Social Sciences, University of Gloucestershire). *Lucy will describe and discuss some of the glacial change research she undertook in Antarctica and the impact of glacial change on sea levels.*

19th October:- *'The Bob King Mineral Collection'*. Speaker: Tom Cotterell (National Museum of Wales). *The collection, now held at the National Museum of Wales represents one of the finest British mineral collections assembled* during the Twentieth Century.

16th November:- *'Saltwells and Wren's Nest - Dudley's SSSIs for Geology'*. Speakers: Alan Preece (Saltwells Warden) and Ian Beech, (Wren's Nest Warden). *Details TBC.*

14th December:- *'Algae, fish and climate change: the last 3.5 million years'*. Speaker: Matt Sutton (DPhil student, Department of Earth Sciences, University of Oxford). *Phytoplankton form the base of ocean ecosystems. They play a vital role in the climate system, the composition of the atmosphere and, ultimately, the health of humanity. Anthropogenic climate change is predicted to cause substantial changes in phytoplankton abundance over the coming centuries. Using the sedimentary record of the deep sea, Matt will be quantifying changes in the abundance of phytoplankton and fish microfossils across the Plio-Pleistocene, with an emphasis on episodes of rapid environmental change.*

**2021 Meetings**

18th January:- *'Geology in Paradise'*. Speaker: Graham Hickman. *The islands of Trinidad and Tobago lie at the junction between the South American and Caribbean plates. The area has generated hydrocarbon accumulations which provide much of the economic revenue for this island nation. Graham Hickman, formerly with BP Exploration, describes the geology and adventure in the search for gas fields in the offshore Columbus basin, Trinidad.*

15th February:- *'Atmospheric Cave Science'*. Speaker: Professor Ian Fairchild (School of Geography, Earth and Environmental Sciences, University of Birmingham). *Ian's talk will take us from caves and monitoring cave climates over time through the study of stalagmites, to the need for awareness about appropriate room ventilation i.e. $CO^2$ levels. Recently this issue has been covered in the press with respect to Covid-19, and ventilation on aeroplanes and trains, so it is timely and also of interest in relation to underground spaces in the Black Country.*

15th March:- AGM followed by *'Silurian Rocks of the Dingle Peninsula'*. Speaker: Ken Higgs (Emeritus Professor of Geology, University College Cork). *TBC.*

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## *NatureScot* denotifies Menie Dunes SSSI

The coastal sand dunes complex at Menie, north of Aberdeen, a once 'high quality example' (hence the SSSI status) of a geological system characteristic of northeast Scotland, have been badly affected *(see below, damaged dune slack complex off NatureScot web-site)* by a golf course and hotel


resort complex, the Trump International Golf Course, built by (ex-?!!) President Donald Trump's company and opened in 2012. This is despite any mitigation work by the golf course to protect rare habitats and plants. They now don't include enough of the special, natural features for which they were designated; a situation made even worse by a planned, and given planning permission, second resort next to the original.

The Menie section of the Foveran SSSI comprised a range of special habitats - approximately one-third have been damaged and the remainder have been significantly fragmented, and ecological processes disrupted. A total dune habitat of 154 hectares was originally designated as part of the Foveran SSSI; the combined loss and damage at Menie represents 15% of this dune habitat. The remaining intact part of the SSSI at Foveran Links now will be merged with the adjacent Sands of Forvie and Ythan Estuary SSSI. This had been suggested in mid-2019, but not confirmed until December 2020.

In the eight years since it opened the resort actually hasn't turned a profit. The Trump organisation promised, when seeking planning permission for the original development, to invest £1bn and create 6,000 jobs; to date, only a reported £100m has been invested and just 650 temporary and permanent jobs created. Bob Ward, policy and communications director of the Climate Change Research Institute, LSE commented: *"This is a bitterly disappointing decision which shows that golf still trumps the environment when it comes to Scotland's natural heritage."* If only it was just in Scotland! Elsewhere 'exceptional' circumstances, usually economic or transport infrastructure projects, are overwhelming the UK's green spaces. *IH*

## The Black Country's new Geological National Nature Reserve

This October, the Saltwells Local Nature Reserve *(see image, below)*, in the Metropolitan Borough of Dudley in the West Midlands, was upgraded to national status to become a National Nature Reserve. It joins another 222 National Nature Reserves in England, described by many as 'the crown jewels of England's natural heritage'. It's the first geological NNR to be selected under Natural England's National Nature Reserve Strategy; implemented in 2017, it's a new holistic strategy focused on science, conservation, and people.


Its exceptionally important geological features only occupy a relatively small part of the site's 52.46 hectares, but they're important in understanding the creation of the whole Midlands area both geologically and as a socio-economic landscape. The area was once home to an immense coal-mining industry; then, coal could be seen almost everywhere - now something very rare both locally and nationally. Saltwells is now one of the few places where an accessible surface outcrop of a coal seam can be seen *insitu*; its surrounded by features of past coal-mining and its associated heavy industries, together with their canals and railways, that have created a significant part legacy landscape almost unique to the area. Less obvious, however, is that Saltwells is one of the earliest UK land-reclamation schemes on record.

The area was a very different landscape in the 1700s and 1800s, having been completely deforested and left in a chaotic state by intensive charcoal production (particularly for iron smelting), coal mining and clay extraction (particularly for brick and tile manufacture). Lady Dudley initiated a deliberate landscaping scheme, noted for its tree planting scheme; hence, it was long known as 'Lady Dudley's Plantation' or the 'Lady Wood'. Sitting with the Wren's Nest National Nature Reserve, designated in 1956 as the UK's first such reserve purely for its geology, Saltwells is also a fine example of long-term geoconservation, and a major geoheritage asset within the newly designated Black Country Geopark.

*IAH*

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***"The British are not the only nation who eulogize the beauties of their landscapes, nor were we even the first… However, it is fair to say that the British pastoral tradition has proved particularly fertile and enduring… the British have long believed in the spiritual dividends to be derived from nature. We treasure our magnificent views"*** **(Sampson, 2014, p.7)**

## Old St. Mary's Church, Clophill, Bedfordshire - a new LGS

Fieldwork, perusal of historic maps, and some leisure cycling recollections have revealed that many of Bedfordshire's clay, gravel and sand pits and quarries have been lost to landfill and redevelopment - particularly over the last 30 years or so. It's been very evident in the Leighton Buzzard area where major housing schemes are currently obliterating the Woburn Sands Formation quarries. Some of these (like the quarries near Clophill, Sandy and Silsoe) exposed fine sections of reddish-brown glauconitic sandstones and post-depositional 'reefs' of similar hardened sands formed by secondary deposition of the iron-rich matrix.

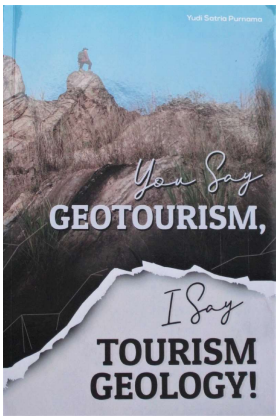
These distinctive stones have been used in many old buildings, especially churches, farmhouses, and walls across central Bedfordshire. With the loss of the quarries, such structures are now the most readily accessible means of examining these distinctive rocks. On leisure cycle rides in the area the churches in particular, with their general hill-top locations, are obvious places to visit and photograph. Some are almost hidden away because over time the villages they served have either been abandoned or moved a short distance away; a few of these churches are redundant, such as at Lower Gravenhurst *(see above right)* and Clophill.

Most of the old churches show the use of dressed blocks, rough blocks and cobbles/pebbles of the glauconitic sandstones in their walls. Other local stone used includes some Jurassic sandy limestones from the Great Oolite Group and Cretaceous hard chalk horizons (such as 'Totternhoe Stone') used in doorway and window mouldings, as well as walls. Surprisingly, this valuable architectural geoheritage resource has seldom been designated as such.

So, it was pleasing to read in a recent newsletter of the Bedfordshire Geology Group that *"Old St. Mary's Church, Clophill was recognised at a meeting of the Bedfordshire Local Geological Sites Panel on 7th January 2020, hosted by Harrold and Odell Country Park, and recorded on the Bedfordshire Local Sites database to inform Central Bedfordshire Council."* The ruins *(see above right)* are in the care of the Clophill Heritage Trust. A viewing platform in the church tower allows the public superb views of the surrounding countryside. The site's reconstructed cemetery wall incorporates a 'Wall of Geology', a section across the rocks of the county with a separate interpretation board (see *GEONEWS*, Summer 2019), prepared by the Bedfordshire Geology Group. *Tom Hose*

## Book Review: *You Say Geotourism, I Say Tourism Geology!*

*by*
**Yudi Satria Purnama**




**I**'ve known of the author's interest and work in geology and tourism for many years and he'd longed stated his intention to publish a volume summarising his approach to geotourism. In the mid-2000s, we struck up a somewhat intermittent - mainly my fault due to pressing work and research related matters that my replies were too often delayed longer than I intended - correspondence. So, I was pleased and delighted when our correspondence was rekindled and further when he most kindly gifted me a copy of the very 2020 volume - which I've slowly read, in between other reviewing work and writing projects, since late summer.

**T**he volume has ten chapters, across 408 pages, in two sections, plus an 11-page useful Glossary; the second section, around a third of the book's length, is taken up by detailed case studies. Its extensively illustrated with over 100 monochrome photo-images, block diagrams,and maps. Its contents can be summarised:

**1.** Introduction

**Part I: Getting Familiar to Tourism Geology**

2. Reshaping.Geology and Tourism Relation.
3. Tourism Geology Scope.
4. Research and Cooperation Importance.
5. Make it More Clear.

**Part II: Research Demonstration**

6. Identification Tourist Attraction Potential in Samarinda and Surroundings, Eastern Kalimantan.
7. Geological Control on Identification of Aesthetic and Safety Factors for Swimming in Southwestern Nearshore of Banten, Western Jawa.
8. Geological Approach for Tourist Destination Planning: Case Gunung Batu, Western Java.
9. Assessment of Geological Variables to Mountaineering Difficulty Rating and its Application to Mountaineering in Cereme, Slamet, and Semeru Volcanoes.
10. Highlights of the Geological-related Attractions and Tourism Development of Rinjani-Lombok Geopark and Lombok Island.

**T**he volume's, perhaps unique, approach to geotourism can be gauged from the Preface's opening paragraph: *"Since [the] 90s decades, we know geotourism as the only one relations of geology and tourism. Through this work, I declare tourism geology as the other relation. No intention to show which is one is the best. Tourism geology and geotourism has different purposes."* In this the author has partly picked up on something in the original mention in Malaysia of tourism geology (unfortunately without any formal definition), in the mid-1990s, by Komoo; he suggested it was an aspect of applied geology, could support ecotourism's growth and also put *"…conservation geology at the same level of importance as…conservation biology…"* - an early linkage of tourism geology (geotourism?!) and geoconservation as propounded in the first definitions of geotourism in the UK.

**F**urther into the Preface a question is posed and answered: *"Why does geology need to support tourism? In this early 21st century, geology needs to adapt to new community demand. It means we need to pay attention of any peculiar idea when we or someone observes the link of our earth and culture. It is needed for geology to be more humanistic in the next decades. Tourism geology is your new playground."* Hence, it seems the author is in tune with modern European approaches to presenting geology to the public. These have included educational and interpretive schemes explaining and exploring the societal value of geological collections and geosites as they reflect research into pressing modern environmental issues and how geological thought has evolved - the history of geology and its personalities are generally recognised as one of the best means of connecting with non-specialist audiences.

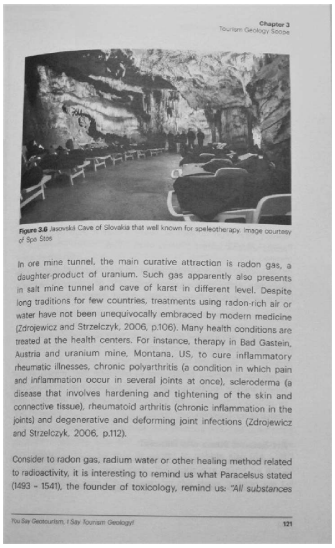

Chapter 3
Tourism Geology Scope

Figure 3.6 Jasovski Cave of Slovakia that well known for speleotherapy. Image courtesy of Spa Slate

In ore mine tunnel, the main curative attraction is radon gas, a daughter product of uranium. Such gas apparently also presents in salt mine tunnel and cave of karst in different level. Despite long traditions for few countries, treatments using radon-rich air or water have not been unequivocally embraced by modern medicine (Zdrojewicz and Strzelczyk, 2006, p.106). Many health conditions are treated at the health centers. For instance, therapy in Bad Gastein, Austria and uranium mine, Montana, US, to cure inflammatory rheumatic illnesses, chronic polyarthritis (a condition in which pain and inflammation occur in several joints at once), scleroderma (a disease that involves hardening and tightening of the skin and connective tissue), rheumatoid arthritis (chronic inflammation in the joints) and degenerative and deforming joint infections (Zdrojewicz and Strzelczyk, 2006, p.112).

Consider to radon gas, radium water or other healing method related to radioactivity, it is interesting to remind us what Paracelsus stated (1493 – 1541), the founder of toxicology, remind us: "All substances

You Say Geotourism, I Say Tourism Geology!
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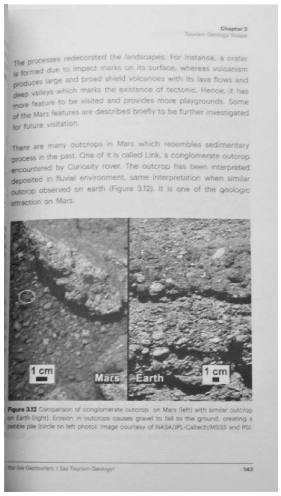
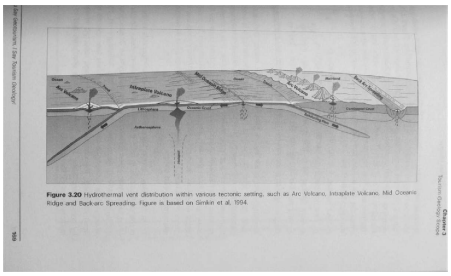
**H**owever, in Chapter 2 it's stated that *"The relation of geology and tourism refers to geotourism which means tourism relies on geological features."* Whilst there is undeniably some truth in that view, it is an overstatement. For example, whilst geotourism mainly relies on geological features, such as landscapes, caves *(see right for image of Jasovska Cave, Slovakia - Chp.3, p.121)*, quarries, and mines, etc., many geotourism attractions are remote from these because they are built around geology collections - in visitor centres and museums; furthermore, for some types of traditional 'mass' tourism, such as skiing and beach holidays, landform features are paramount. Anyway, Chapters 2 and 3 wander across a broad range of interesting topics, as the author examines how the approaches of geologists and tourism experts to tourism geology differ; but the connections and relevance of some of the material is not always obvious unless the reader has already read and understood some of the cited works. In such a potentially complex topic this is almost to be expected; at least the material is comprehesively covered and the references provided for these two, and the other, chapters are really helpful - a real strength of the volume.

**T**he third chapter starts with a brief topic introduction and then examines geological history before moving onto landforms and landscapes, with some consideration of their ecology. An interesting inclusion is that of,

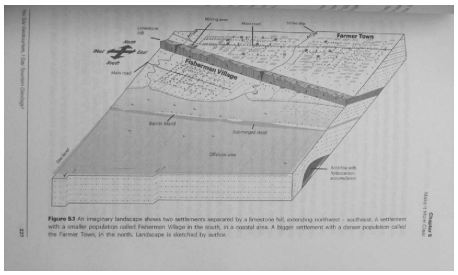
what elsewhere would be called, health tourism followed by an account of minerals and gems. Unexpectedly, this is followed by accounts of Lunar and Martian *(see right for image of comparative conglomerates on Earth and Mars - Chp.3, p.243)* geology, as tourism geology attractions; it then returns to a conventional account of plate tectonics *(see below for image block diagram of plate margins and volcanism - Chp.3, p.169)* as an exploration of geological phenomena, such as earthquakes and volcanic activity, as geotourism attractions.



**C**hapter 4 is short and focuses on applied research and its relevance to tourism geology with reference to several short case studies; I particularly appreciated, with my personal research connections there since the early 2010s, the account of loess in the province of Vojvodina, northern Serbia.

**C**haper 5, also quite short, is an innovative account of an imaginary landscape - a limestone coastal area *(see below for image of block diagram of the imaginary landscape - Chp.5, p.227)* - to underscore the differences between geotourism and tourism geology. It very much reminded me of the type of imaginary case study employed in some past tourism geography textbooks, written by human geographers, designed to help students come to grips with some complex interrelationships; this one works quite well.




**T**he remaining five chapters (two of which are collaborative efforts with locally knowledgable experts) are detailed case studies of specific landscapes and geosites and their existing and potential role in tourism geology. They cover parts of Borneo, Java and other islands of the Indonesian archipelago; it's just a pity an overall location map wasn't provided to help readers, such as myself, unfamiliar with the region's less well known localities. I was particularly drawn to the chapter on mountaineering on volcanic islands - something virtually unmentioned in the otherwise splendid 2010 volume, *Volcanic and Geothermal Tourism*, edited by Erfurt-Cooper & Cooper. Mountaineering is one of the most geologically dependent outdoor activities and the chapter opens with a brief introduction relevant to any mountainous area. The consideration of route difficulty and grading is quite useful. However, in the account that follows it's probable that most mountaineers, especially alpinists, would consider the volcanic peaks and their routes as stiff backpacking; I'm not sure the author who'd climbed the routes in 2012-2013 would agree!

**T**he final chapter considers the Rinjani-Lombok Geopark which incidentally this year hosted the virtual 'Geotourism Festival 2020' - see website at:
https://rinjanigeopark.com/agar-tetap-produktif-dimasa-pandemi-geopark-rinjani-gelar-festival-geowisata-virtual-pertama-di-indonesia/
The chapter is essentially a descriptive account of the geopark's main features but it does explore their distribution and the management of the hazards, for tourism development, associated with them; the account of the methodology employed in assessing tourism provision and potential is widely applicable.

**T**he volume's a relatively easy read because of the use of, perhaps too, short paragraphs and the author's generally jargon-free and populist writing style. Whilst some of its potential readership might consider part of its scope odd and some of arguments a little contentious this is to be welcomed; it's refreshing to see alternative viewpoints cogently expressed and they should help other academics and students hone their own work and arguments.

**I**t's always a challenge to proof-read any large volume for spelling, typographical and grammatical errors and, overall, this has been fairly well handled by a non-native speaker; heaven knows how I'd, being typically English, deal with putting together one of my own books in Indonesian (even if it is a standard form of Malay!). This softback volume is printed on the sort of fair-quality paper usually used for student textbooks and non-fiction works. Having said that, the reproduction of the numerous photo-illustrations and line-drawings is very good as can be seen in the reproduced pages - so, fair praise then for the publishers, Elmarkazi of Bengkulu (Indonesia) and their printers.

**T**his isn't a book that should be compulsory reading for geoheritage managers and geoconservationists - not that they wouldn't learn something from some whole, and sections of other, chapters - but it could usefully be read by anyone beginning their undergraduate or advanced studies in modern geotourism or even tourism geology!

*Tom Hose*

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***"Traversing a sort of shelf on the soaring flank of Mallerstang Edge, hundreds of feet above the highest railway in England, is a remarkable track marked on maps as, simply, the High Way.***

***This rough track, in places a limestone 'pavement', crossing becks and waterfalls and snaking round potholes, is the route the formidable Lady Anne Clifford… the owner of at least six castles… used to travel in the seventeenth century."*** **(Wainwright, 2005, p.60)**

GEOconservationNEWSletter

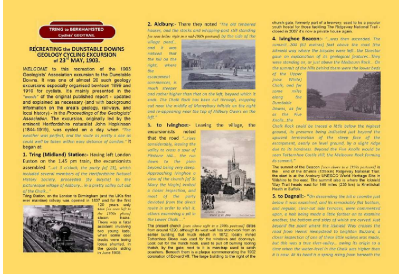
## Those Cyclists' Geotrails based upon Geologists' Association Past Excursions.

It should now be common knowledge, at least to the readership of this newsletter, that the GA has been offering field excursions (renamed as field-trips, to keep the tax authorities happy, since the late 1920s) almost as soon as it was formed in 1858. It's probably less commonly known that, although most were pedestrian in nature, around twenty excursions were especially created for, or were made available to, cyclists. The routes of some of these, with many of their visited sites - following six years of research - are already the basis of some new specifically cyclists' geotrails and even published journal papers (e.g. Hose, T.A. *(2018)* ***Open Geosciences***, **10**, 413-440).

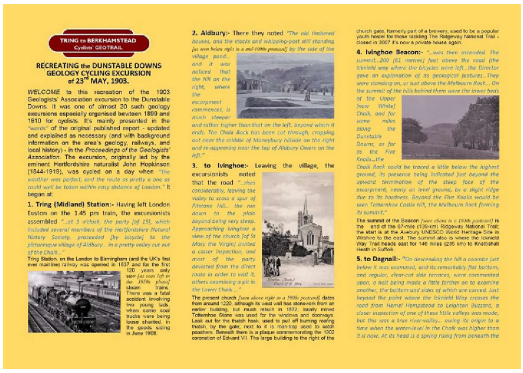
In the last newsletter, four pre-Great War originally cyclists' excursions were highlighted as either completed or in preparation; only the 1899 'Chilterns' one remains, due to COVID-19 restrictions on travel and overnight stays, to be done. The other three and some others, all north of London, are now available on the GCUK web-site. They include one recreating the May, 1905 Bedford excursion; this has both a trail guide *(see right)* and a leaflet explaining the area's geology. The circular geotrail is noteworthy for the Biddenham Pit *(see below right)*, cut into the Quaternary river gravels of the Great Ouse River and from which some of


the earliest recorded finds of Palaeolithic implements were made. In pre-COVID-19 days, much of the fieldwork was often enjoyable with fair weather, lightweight overnight bivis *(see above left)* and even sometimes (when a bus or train journey was needed) riding a folding bike.

The recreated 'Dunstable Downs' excursion of May 1903 *(see right)*, is a linear geotrail linking Tring and Berkhamsted stations, although cyclists wishing to use the same railway line might prefer to cycle on to Hemel Hempstead; bearing in mind that some of



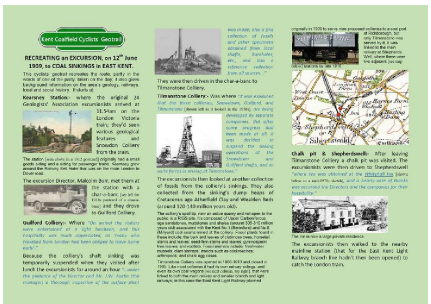

the original excursionists cycled - on single-speed roadsters - on to Watford and London that doesn't seem too much of a hardship! The newest completed geotrail, for the May, 1901 excursion to 'Soulberry, Stewkley and Wing' *(see right)* follows a route originally taken by horse-and-carriage.




The format of the completed geotrails is deliberately varied because part of the study is about examining what works best in terms of content, layout and appearance for their specific audience(s); it's also partly to help revise, if necessary, my original geotourism research findings on the design of geo-publications; however, the pandemic rather got in the way of the planned focus/discussion group(s). The leaflets also are intendeds to show the creative possibilities of just using 'Microsoft Office' instead of complex DTP software. Meanwhile, the discerning viewer might just notice the colour scheme for each leaflet reflects the livery of the relevant railway company!

Anyway, in addition to the original highlighted four original excursions, I've managed, in between lock-downs, to do fieldwork for four other possible Hertfordshire geotrails based on pre-1920 GA pedestrian and motoring excursions. This revealed that for three of them, whilst their routes could generally be traced, just about all of their pits and quarries had variously been infilled, built over by up-market housing developments, covered by leisure and sports facilities, and capped by a major supermarket - mostly after the late 1970s. So, I'm now looking at working up a geotrail over the coming months based around a cycle path, over an abandoned railway line, with links to a Roman town and the fastest wooden bomber ever built.

That still leaves, groups the opportunity to look at the other 15 excursions from the original table; these are mainly in Berkshire and Surrey, but with some in Essex, Kent and Wiltshire. The expressions of interest from the Berkshire and Kent groups were very welcome. For the latter county. a draft leaflet *(see above right)* has been prepared but because I've not had an opportunity to cycle and check the route for its safeness, it's unfinished but not defunct; a planned



three-day lightweight cycling trip to explore the Kent coal-field and the route, based on the GA June, 1909 'Coal Sinkings in East Kent' excursion, had to be cancelled when the only suitable campsite whilst open in the summer to caravans and motor-homes hadn't re-opened its toilet/shower block for those of us needing to use canvas. Kent's latest tier rating has been a real further impediment!

**T**he completed fieldwork for the study so far has shown that it is possible to recreate many of the GA's historic excursions as cyclists' geotrails, especially if one avoids those that visited the area's of what would become the ring of new and expanded towns around London from the 1950s onwards! Again, despite the ravages of Dr Beeching, there is still access to most of their areas by railway - underlining the sustainable approach to developing these geotrails.

**O**f course, the study still would benefit from the help of collaborators, both groups and individuals. So, why not look at the excursions the GA has run - they're all available online in the *PGA* - in your group's area and see if one or more could be adapted as modern cyclists' geotrails. You might also find it a useful geoconservation benchmarking exercise as to how many, and when, the geosites in your area were lost; you might even come across some you never knew existed! Should you wish to get involved just send an email to: t.hose123@btinternet.com - I'm really looking forward to working with you in 2021.

*Tom Hose*

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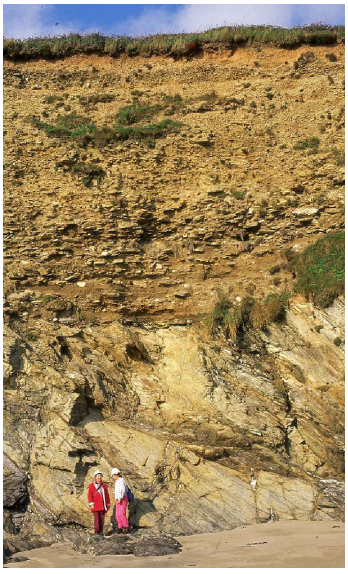
Cornwall Geoconservation Group

## A Potential Local Site to Demonstrate Climate Change: cliff section between Fishing Point and Spit Point, near Par, South Cornwall

**T**he lower part of the cliff in the photograph *(see next column)* is composed of steeply dipping Early Devonian slaty mudstones and volcanic rocks laid down in a warm sea at a time when Cornwall was much further south than it is now. These were compressed and folded during the Variscan Orogeny.

**U**nconformably overlying the older rocks are a thick sequence of Quaternary deposits which demonstrate the climatic fluctuations during the later part of the Ice Ages. The lower half of these deposits is a raised beach, with large flat stones rounded by wave action, probably formed under warm temperate conditions in the last interglacial (Ipswichian) about 120,000 years ago when the sea level was some 5-8 metres higher than present. This is overlain by a considerable thickness of 'Head' which contains angular fragments of slate formed by frost shattering, representing the much harsher, colder climate of the last



glacial period (Devensian) which ended about 20,000 years ago.

Finally the layer at the top about 0.5 m thick beneath the turf is a buff silty material with a few stones, which is probably a 'loess' formed by wind blowing dust from the dry floor of what is now the Irish and Celtic seas, when the sea was over 100m lower than present, during the closing stages of the last glaciation 20,000 years ago. When the loess was first deposited conditions would have been very cold; 'Ice wedges' have been recorded in the cliffs behind Spit beach just to the east of the section in the photograph; these only form under climatic conditions similar to Northern Siberia or Canada at the present day (Bristow & James, 2002).

**A**ltogether, this is a wonderful location for demonstrating the massive climatic fluctuations during the later part of the Ice Ages (Quaternary).

### Access

**T**he whole cliff section from Fishing Point at the east end of Crinnis beach (Carlyon Bay) to Spit Point has been designated a County Geology Site by the Cornwall Geoconservation Group. To get to the section shown in the photograph park in the Spit Beach car park (SX 073/528) and follow the public foot path to Spit Beach. Ice wedges can usually be seen in the cliffs behind Spit Beach. Continue along the shore line to the west for just over 100 metres to the section shown in the photograph; *NOTE* only possible during low spring tides - it is essential to consult a tide table before attempting this route. A similar, but not quite so clear, section can be seen at Fishing Point (SX 067/522), which can be easily accessed from the South-West Coastal Path.

### References

Bristow, C. M. 2004 *Cornwall's Geology and Scenery* (Second Edition), Cornish Hillside Publicatiuons. pp140-148.
Bristow, C.M. and James, H.C.L. 2002. Field excursion to the area of St Austell Bay between Carlyon Bay and Par. *Geoscience in south-west England*, **10**, 373-376.

*Colin Bristow*

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***"Chalk is a primeval landscape, the primeval landscape of southern England, unchanged in large areas, having its great continuity with the past; not overlaid too much with later soil, rising unadulterated and uncloying and supremely simple – and, where we have allowed it, unspoilt – from the surrounding regions."*** **(Mosley & Hillier, 1983, pp.9-10)**

## The Black Country is (finally!) a UNESCO Global Geopark

In July, 2020, the Black Country officially became a UNESCO Global Geopark. UNESCO's Executive Board approved the ratification of 15 new Global Geoparks at its meeting on the 7th July, 2020; they confirmed the ratification at their plenary session on 10th July. This is the culmination of a process that began as far back as 2006/2007 during work on the 'Black Country Study'. Its report, published in May 2006, explored the possibility of creating, in the inevitable jargon of the day, a transformational/inspirational 'Urban Park'.

The evidence base for the Study included a fairly thorough audit of the special features and heritage assets of the Black Country; it showed that there was an impressive number of surviving cultural and natural heritage features and sites with some form of designation - more than 1500 within the boundaries of the four Black Country Boroughs. The BCGS, since its inception in 1975 with part of its original remit to record and list geosites and help with local geological collections, had long been active on recording the area's geoheritage assets. The four authorities' planning departments also recognised the importance of cultural sites and green spaces for their educational, health, and general well-being benefits together with their potential to support economic regeneration. Hence, they adopted many 'second-tier' geological sites within their planning process, giving them the protection as 'Sites of Importance for Nature Conservation' (or SINC's as they became to know); this was significant for the eventual geopark bid.

In 2008, the BCGS seriously began to look at the possibility of the area's membership of the European Geoparks Network. Of course, the timing couldn't have been worse! That year was the start of a major financial crisis and the then introduction of austerity measures by the Government. Subsequently, lots of potential schemes and projects were stalled, reviewed and then largely cancelled. But the BCGS quietly persisted and by by 2014 it had assembled a project management team, the members of which - having a very wide range and depth of experience - were able to create a wider supporting partnership. With a selection of geosites that defined the area's geoheritage, and which together told its landscape story, an initial version of a Geopark bid (helped by discussions with external partners and advice from existing Geoparks) was prepared.

Thus, from 2014/2015, a *de-facto*, if not strictly legitimate, Geopark was operating to demonstrate its workability and the likely competence of a real bid. This impressed the existing UK Geoparks and the threshold test required for a supporting letter from the UK UNESCO National Office was reached; the full bid was ready by November 2015 - the same month UNESCO formally adopted the Geoparks Programme as a new formal UNESCO programme. This meant that the Black Country bid would be the first UK one to undergo the inevitably new rigorous scrutiny process. Accordingly, an inspection team was sent, in June 2016, to examine the bid on the ground. However, with austerity deepening the local authority response was some restructuring of services, including the closure Dudley Museum and Art Gallery, the Geopark's HQ actually written into the bid!

When the bid inspection team arrived, the building was in the process of being dismantled and its collections, etc. moved to the brand new Archives and Local History Centre - now the substitute Geopark HQ. Fortunately, the inspection team were impressed with what they saw and the people they met. However, in 2017, accession to the Geopark Network was deferred unless and until additional assurances about the support and resources available for the fledgling geopark were given. So, in May 2019, these were given in a final progress report eventually approved by the UK Network and the UK National Commission and forwarded to the Global Network and UNESCO Executive for a final decision - expected to be within a year, but then along came the COVID-19 pandemic!

Now the Geopark's delivery and 'capacity building' phase has begun. A new UNESCO approved logo will soon see a re-branding exercise. With so many sites this will take some time to complete. Inevitably there will be innumerable meetings and briefings of various teams in organisations across the Geopark and even internationally. A particularly significant new possible development is the creation of 'The Black Country Geopark Way', a long-distance walking and (close to my heart!) cycling route connecting the geosites via a waymarked route; this will have to thread its way between them along existing canal towpaths, cycle lanes and defunct railway lines. It does rather seem that Geopark has had more than its fair share of bad luck, but it can now look forward to a brighter future. *TH*

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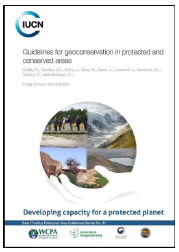
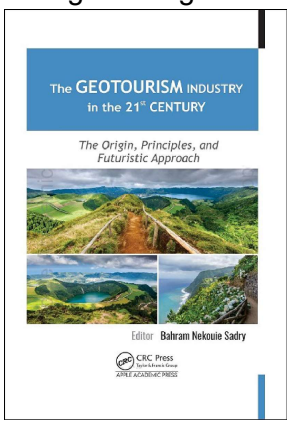



## Guidelines for Geoconservation in Protected and Conserved Areas

This isn't a geoconservation management practice textbook, but it claims to provide links to the key literature and additional sources with detailed practical guidance; a quick perusal suggests that whilst extensive it has missed some key geotourism references, but given the definition it adopts that's not too surprising! It does include best practice examples from around the world. It's free and available for download at: https://portals.iucn.org/library/node/49132 *TAH*

## Notes on Two Possible Large Volumes for your Bookshelves!

**A** couple of books on geoheritage have been published this year and they're particularly interesting because their genesis isn't either Australia or Europe. However, I can't review these, although I've got complementary e-book versions (the price of their hard-copy editions even puts them beyond my Christmas list!), because I've contributed chapters to both, and written a preface for one, of them; it would be a genuine conflict of interest. However, they are volumes that could profitably be consulted by anyone anywhere involved in geoheritage and geoconservation management.




**T**he first book, published by Apple Academic Press this November, is edited by Bahram Nekouie Sadry from Iran; its entitled *The Geotourism Industry in the 21st Century: The Origin, Principles, and Futuristic Approach*; it's promotional leaflet indicates that: *"The volume looks at the establishment and effective management of the over 140 UNESCO geoparks around the world and other travel and tourism destinations of interest for their significant historical, cultural, and frequently stunning physical attributes. With studies from a selection of geotourist areas in Poland, Japan, Turkey, Brazil, Albania, California, Mexico, Peru, and other places, the volume explores urban geotourism, mining heritage, geomorphological landforms, geoheritage (based on cultural and historical interest), roadside geology of the U.S., community engagement and volunteer management programs, and much more. There is even a chapter on space and celestial geotourism. The volume encourages academics, practitioners, and students in the fields of tourism, geology, geography, and also environmental and conservation science to learn more about the geopark movement and this arising new discipline."*

Again, the leaflet notes its key features are that it:

*"• Provides guidance for all aspects of geotourism as it relates to the establishment and effective management of geoparks;*

*• Offers specific information on the geoconservation and effective management of geotourism in geoparks;*

*• Identifies significant geological and mining heritage areas that could be formally reserved as national geoparks or geosites by nations;*

*• Provides a model and schematic mechanism for integrating geodiversity into all relevant geotourism activities and also to geoheritage stakeholders, such as UNESCO, the mining industry, and others."*

**T**he volume's 23 chapters, across 552 pages are split between five sections:

**PART I: GEOTOURISM CONCEPTS IN THE 21ST CENTURY**

1. The Scope and Nature of Geotourism in the 21st Century
2. Historical Viewpoints on the Geotourism Concept in the 21st Century
3. Urban Geotourism in Poland
4. Mining Heritage as Geotourism Attractions in Brazil

**PART II: GEO-ASSESSMENTS: GEOHERITAGE ASSESSMENTS FOR GEOTOURISM**

5. Geomorphosites: Aesthetic Landscape Features or Earth History Heritage?
6. Geoheritage and Geotourism in Albania
7. Establishing an Appropriate Methodology for the Management of Geological Heritage for Geotourism Development in the Azores UNESCO Global Geopark
8. "Simply the Best"?: The Search for the World's Top Geotourism Destinations

**PART III: GEO-INTERPRETATION: INTERPRETING GEOLOGICAL AND MINING HERITAGE**

9. Interpreting Mining: A Case Study of a Coal Mine Exhibit
10. Geotrails
11. Interpreting Geological and Mining Heritage
12. Evolving Geological Interpretation Writings about a Well-Traveled Part of California, 1878–2016
13. Commercially Successful Books for Place-Based Geology: Roadside Geology Covers the U.S.

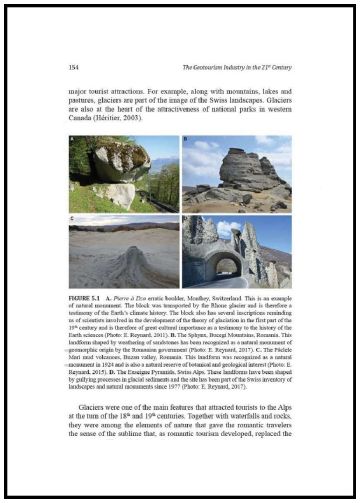
**PART IV: GEOPARKS AND COMMUNITY DEVELOPMENTS: A BASE FOR GEOTOURISM PROMOTION**

14. Community Engagement in Japanese Geoparks
15. The Role of Volunteer Management Programs in Geotourism Development Cristian Ciobanu and Alexandru Andra?anu
16. Geotourism and Proposed Geopark Projects in Turkey
17. Geotourism Development in Latin American UNESCO Global Geoparks: Brazil, Uruguay, Mexico, and Peru

**PART V: GLOBALIZATION AND THE FUTURE OF GEOLOGICAL ATTRACTION DESTINATIONS**

18. Dinosaur Geotourism, a World Wide Growing Tourism Niche
19. Accessible Geotourism: Constraints and Implications
20. Space and Celestial Geotourism
21. Post-Mining Objects as Geotourist Attractions: Upper Silesian Coal Basin (Poland)
22. Geotourism vs. Mass Tourism: An Overview of the Langkawi UNESCO Global Geopark
23. The Future of Geotourism

**T**here is overlap between some chapters but, given the volume's scope, this is inevitable. The volume's production values are high, as can be part gauged from:

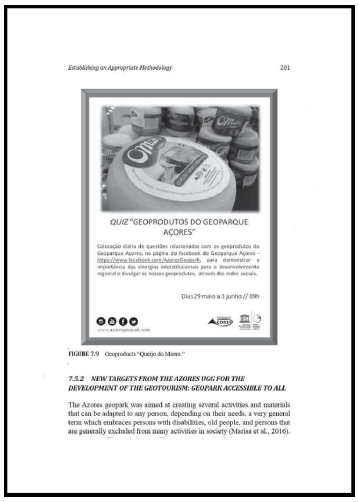

154 The Geotourism Industry in the 21st Century

major tourist attractions. For example, along with mountains, lakes and pastures, glaciers are part of the image of the Swiss landscapes. Glaciers are also at the heart of the attractiveness of national parks in western Canada (Héritier, 2003).



FIGURE 5.1 A. *Pierre à Dzo* erratic boulder, Monthey, Switzerland. This is an example of natural monument. The block was transported by the Rhone glacier and is therefore a testimony of the Earth's climate history. The block also has several inscriptions reminding us of scientists involved in the development of the theory of glaciation in the first part of the 19th century and is therefore of great cultural importance as a testimony to the history of the Earth sciences (Photo: E. Reynard, 2011). B. The Sphynx, Bucegi Mountains, Romania. This landform shaped by weathering of sandstones has been recognized as a natural monument of geomorphic origin by the Romanian government (Photo: E. Reynard, 2017). C. The Pădiș Mari and volcanoes, Bratca valley, Romania. This landform was recognized as a natural monument in 1924 and is also a natural reserve of botanical and geological interest (Photo: E. Reynard, 2015). D. The Ensalmo Pyramids, Swiss Alps. These landforms have been shaped by gully/rag processes in glacial sediments and the site has been part of the Swiss inventory of landscapes and natural monuments since 1977 (Photo: E. Reynard, 2017).

Glaciers were one of the main features that attracted tourists to the Alps at the turn of the 18th and 19th centuries. Together with waterfalls and rocks, they were among the elements of nature that gave the romantic travelers the sense of the sublime that, as romantic tourism developed, replaced the


Establishing an Appropriate Methodology 201



QUIZ "GEOPRODUTOS DO GEOPARQUE AÇORES"

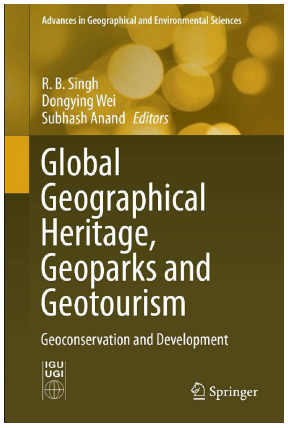
Dias 29 maio a 3 junho // 09h

FIGURE 7.9 Geoproducts "Queijo do Morro."

7.5.2 NEW TARGETS FROM THE AZORES UGG FOR THE DEVELOPMENT OF THE GEOTOURISM: GEOPARK ACCESSIBLE TO ALL

The Azores geopark was aimed at creating several activities and materials that can be adapted to any person, depending on their needs, a very general term which embraces persons with disabilities, old people, and persons that are generally excluded from many activities in society (Marina et al., 2016).

**T**his is the volume for which I wrote a preface and two chapters, partly because Bahram Sadry is a someone with whom I've corresponded for over a decade after he started to research geotourism; sadly we've neither met in person nor even 'Zoomed', but perhaps one day...




**T**he second volume, published by Springer (Singapore) will be on the bookshelves in January 2021. Edited R.B. Singh, Dongying Wei and Subhash Anandby it's entitled *Global Geographical Heritage, Geoparks and Geotourism: Geoconservation and Development*. Something of the overall approach of the volume, influenced by its joint Indian and Chinese genesis, can be gleaned from its Preface's opening sentences: *"Our pious planet Earth is blessed with distinguished geographical as well as geological diversity and heritage that helps us in understanding its evolutionary trend and history. This has led to the laying of much emphasis upon the preservation and conservation of the rich terrestrial heritage. Scientific and proper exploration and preservation of the rock and fossils is the key for understanding the evolutionary processes and the environments leading to the present situation of the planet."*

**I**t also makes the point that it is: *"...a compilation of the valuable contributions made by eminent scientists, research scholars, and professionals who are trying to develop alternative strategies, solutions for the sustainability of geoheritage and geoparks and others through various empirical research and experiments ranging from local to global scale. This edition would be of immense use to the policy-makers, environmentalists, conservationist, academician, and research scholars who are directly or indirectly involved."*

**I**ts 23 chapters, across 483 pages, are split between three sections:

**Part I Geographical Diversity and Geoheritage**

1. Geographical Diversity of Georgia and Perspectives of Planning of Geoparks (Geo Heritages)
2. Identifying and Assessing Geodiversities Around Takht-e Soleyman World Heritage Site to Propose the Territory as the Third Geopark in Iran
3. Geoheritage: A Strategic Resource for the Society in the Anthropocene
4. UAV's Multimedia Technology and Augmented Reality (Geointegration): New Concept and New Paradigm of Geodiversity Presentation
5. Virtual Heritage: A Model of Participatory Knowledge Construction Toward Biogeocultural Heritage Conservation
6. Communitarian Ethics, Environmental Conservation and Development
7. Ecological and Socio-Economic Vulnerability to Climate Change in Some Selected Mouzas of Gosaba Block, the Sundarbans

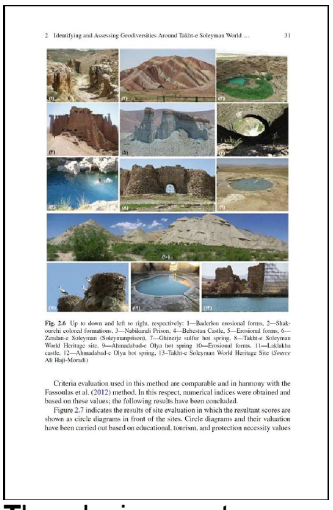
**Part II Geosites and Geoparks**

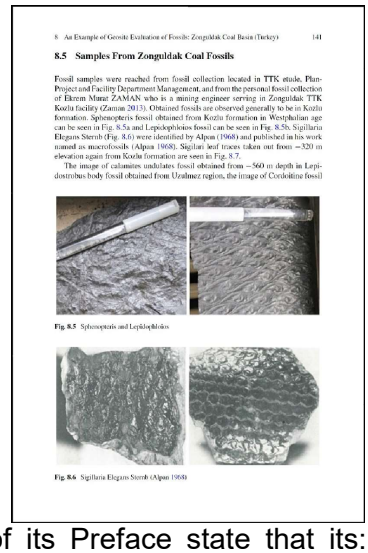
8. An Example of Geosite Evaluation of Fossils: Zonguldak Coal Basin (Turkey)
9. Gullies and Badlands as Geoheritage Sites
10. Geoeducation and Geoethics Among the Children for Sustainable Tourism and Development of Aliage Geological Park in Spain
11. "Location, Location, Location": Challenges of Effective Geoscience Education Within Geotourism Opportunities at Coastal US Fossil Park Sites
12. Geoparks and Geo-Sites: Geological "Learning Objects"
13. Geoheritage Sites and Scope of Geotourism in Land of Chhattisgarh, India
14. The Exploration into Evaluation Index System for the Protection Effectiveness of Natural Heritage Protected Areas
15. Geoheritage and Potential Geotourism in Geoparks — Indian Perspective

**Part III Geotourism**

16. New Routes of Geotourism for the La Campana–Peñuelas Biosphere Reserve, Chile
17. Modern Geotourism's UK Antecedents
18. Geomorphological Resources for Geoeducation and Geotourism
19. Dinosaur Geotourism in Europe, a Booming Tourism Niche
20. The Use of Geoheritage, Geopark and Geotourism Concepts to Conserve and Sustain Tourism Development in Zambia
21. Highlight of Geotouristic Values of a Volcanic Landform on the Mount Manengouba Eastern Slopes: Case of Djeu-Seh Basin
22. Estimating Carrying Capacity in a High Mountainous Tourist Area: A Destination Conservation Strategy
23. Collaborative Creation of Educational Geo Routes: A Strategy for Teaching and Learning Sciences and Geography, Puchuncaví, Chile

**U**nusually, the volume's Preface acts as the introductory chapter and it opens with a straight forward case-study. Interestingly, both I and Bahram Sadry have chapters in this volume, although his is a multi-authored effort. Surprisingly, it lacks an index, something useful when one is searching for common material across several chapters. However, the volume's production values are generally high, as can part gauged from:






**T**he closing sentences of its Preface state that its: *"...papers also suggest solutions for the sustainable development and sustainability of the geosites in the different regions of the world. Looking [at] the situation, it is high time to conserve and manage the existing geosites and geoparks so that geotourism can speed up. This edition would be of significant use to the policy-makers, environmentalists, conservationist, academician, and research scholars who are directly or indirectly involved."* This is something with which this newsletter's readership would undoubtedly agree.

**A**s for me, having edited two major geoheritage and geotourism volumes, published in 2016 following the 2013 Geological Society of London conference 'Appreciating Physical Landscapes', it was reassuring to realise that the production time-frames of both volumes, some two or three years, was similar to mine own (although I, and rather unintentionally, ended up both editing and writing chapters for two volumes at the same time) and the experience of working with multiple authors was probably equally challenging; possibly, far too much editors' time is spent on the task for limited, if any, financial gain. Perusal of some well-selling populist science books suggests that much less, and conscientious, endeavour gets greater and financial rewards! *Tom Hose*

## Geological Society of London Annual Geoconservation Gathering, 2020

The Geoconservation Gathering, on 7th October 2020, was a virtual event and well attended with participants from all over the world. The original plan had been to hold the indoor meeting at Dudley Museum and Archives to celebrate the UKs newest UNESCO Global Geopark, The Black Country Geopark. This would have been followed the next day by a field trip to Wrens Nest and Saltwells, the oldest and newest geological National Nature Reserves. Sadly, there was no meeting in person but the day was still very successful.

The theme of the day was 'Conserving Life – past present and future' to tie in with the GSL Year of Life and there were nine speakers giving presentations on a range of topics linked to this. A fuller report will be produced for *Geoscientist* and other publications in the near future.

The day was split into three themed sessions and during the first *'Conserving sites'*, Michael Dempster (Northern Ireland Environment Agency) told of the conservation of palaeontological sites in Northern Ireland, Colin MacFadyen (NatureScot) described the Skye Nature Conservation Order to prevent damaging fossil collecting activity and Tim Astrop outlined the progress of the Brymbo Fossil Forest Project.

The second session related to *'Conserving Collections and Public Engagement'* in which Chris Reedman (Jurassic Coast Trust) described the challenges of improving access to the Jurassic Coast Collection, Liz Hyde (Sedgwick Museum of Earth Sciences) spoke of how museums can 'bring rocks to people' and widening participation. Jonathan Larwood (Natural England) told of the ambition to tell England's geological story through new and existing National Nature Reserves (NNR).

The talks for the day ended with a session on *'Using the Palaeontological Resource'* in which Matthew Pound (Northumbria University) described his work on the Brassington Formation a Miocene deposit in the Peak District, Lesley Dunlop (Berkshire Geoconservation Group) spoke of how linking Local Geological sites can be used to tell a wider story of climate and environmental change than individual sites. The talks concluded with Graham Worton (Dudley Museum and Black Country UNESCO Global Geopark) speaking about the effects of the development planning process on geological sites in the Black Country.

Graham Worton completed the day by leading us on a virtual fieldtrip to Saltwells NNR. This was a real treat given Graham's enthusiasm and the fact that we are restricted in where we can visit at present.

*Lesley Dunlop* (GCUK Chair)

## Review of the Aggregates Levy...

The Aggregates Levy is an environmental tax that was introduced in 2002 to reduce the extraction of fresh aggregate (rock, sand and gravel used as bulk fill in construction) and to encourage recycling and use of by-products from other industrial processes. The Government has now concluded its comprehensive review of the levy which had been announced at Spring Statement 2019, following the conclusion of long-standing litigation in February 2019. The *'Review of the Aggregates Levy: summary of responses to the discussion paper and government next steps'* has now been published. This is can be found on the web-page at: https://www.gov.uk/government/publications/review-of-the-aggregates-levy

It refers to the Government's commitment to a further consultation on the tax treatment of aggregate removed during construction works and publication of a public register of businesses and sites registered for the levy.

As in the discussion document, the Government confirms its commitment to devolving the levy to the Scottish Parliament. The document invites representations from stakeholders in respect of processes that fall within the descriptions in Codes 39 to 45 of Annex C but which are not currently eligible for relief because the purpose they are put to is not agricultural. The Government invites further evidence contributions to keep the issue of substantive abuse of the exemptions for slate and clay under review.

The document commits the Government to engaging with industry on imported construction products to establish whether market distortion is occurring, and whether it would be feasible to tax the aggregate content of such products. Additionally, the Government is exploring new ways of collecting minerals data to support its mineral planning objectives, including investigation by the ONSData Science Campus of complementary Big Datasources. No doubt, some of us in the geoconservation community will think it prudent to continue to provide valuable contributions to the Government's next steps.

*Ian Stimpson* (GCUK Secretary) & *Tom Hose*

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***Copy for the next GEONEWS issue, for April 2021, must be with the Editor by 21st March, 2021 at the very latest!***

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