

# Home Counties North Regional Group Newsletter

Issue No. 10 - December 2020

## Opening words from the Chair HCNRG

Dear Home Counties North Regional Group members,

I wrote this letter to you in mid-December, commenting that winter had already arrived, and the second national lockdown had ended but that 3-tier system restrictions had resumed. All 32 London boroughs plus City of London, together with three districts and one borough in southern Hertfordshire, and the western part of Essex moved into tier-3 restrictions as of 16<sup>th</sup> December 2020 and the whole of Hertfordshire, Buckinghamshire and Bedfordshire will be in tier-3 from Saturday 19<sup>th</sup> December, so only Northamptonshire within the HCNRG area would remain in tier-2 at Christmas of 2020. Despite the more encouraging news on successful vaccines against Covid-19, uncertainties remain with the detection of a new variant of Covid-19 are not clear, that was the latest news on Thursday 17<sup>th</sup> December. Came Saturday 19<sup>th</sup> December and a new tier-4 restriction was introduced the data a new variant of Covid-19 had been detected which was much more infectious. Tier-4 restrictions came into force from one minute past mid-night on Sunday 20<sup>th</sup> December for the whole of Greater London, Hertfordshire, Buckinghamshire, Bedfordshire, and most area of Essex; again, all HCNRG areas are in the highest restrictions but not Northamptonshire. The new tier-4 is regarded as a full lockdown rather than highest restrictions and it could last for a long time. No doubt this Christmas is not the Christmas you had wished for and I do echo your thoughts on the restrictions. I wish all of you and your families good health and that you have a safe and peaceful Christmas wherever you are, an unprecedented Christmas but make it a colourful and cheerful Christmas followed by your hopes coming true in 2021.

2021 will be an unusually challenging year, after the virus-related unprecedented events that have affected all of us in this extraordinary year of 2020; whether personally or socially, our experience will continue to live in our minds for long time to come.

No doubt there is hope at the end of the Covid-19 tunnel, I am inclined towards optimism that given time the world will open up and get back to social normality once again; many of the HCNRG members are waiting for some HCNRG activities to resume. When the time comes and it is feasible and safe, then we shall arrange new face-to-face lecture meetings at new venues, new field trips at new locations, new weekday informal workshops at Burlington House, behind the scenes visits to museums, institutions, and geoscience companies.

If the Covid-19 pandemic had not happened, HCNRG would not have rolled out bimonthly newsletters, and you would not have written about your leisure geoscience observations, holiday and field trip experiences, geology hobbies, and academic research for sharing with all the members. Thank you again to all the newsletter article contributors.

I am deeply touched with the kind feedback on the bimonthly newsletters from many of you, all very encouraging to me.

Jessica Smith FGS, Vice President and Chair of Regional Groups, said *'I've just taken a quick skim through the newsletters and I am impressed by what is clearly a high level of engagement within the HCNRG. I'm planning on sharing the Soham murders piece on microfossils with some of the team here as an interesting Friday fact!'*

Nick Pierpoint FGS, President of the Geologists' Association, said *'You are to be congratulated in producing a fascinating newsletter - a really diverse range of interesting articles.'*

Nick Cameron FGS said *'Great mag - stopped me working for some 30 minutes to have my first read.'*

Our newsletter editor Susan Lednarova was on her second work assignment abroad during the past two months, so I have put on my editor hat again to produce another issue of our bimonthly newsletter. My apologies to all the contributors of articles for my delay in wrapping up this issue, as a result of unforeseen multiple day-job commitments.

Wendy Cawthorne, Assistant Librarian, and Eileen Jamieson, Serials and Information Librarian, who have been furloughed since Easter are being made redundant. Some who have visited the library at Burlington House in the past would have met them; I personally have benefited immensely from their help in searching for books, published papers, and geology maps. Their friendly professionalism is highly commended. I wish Wendy and Eileen all the very best and look forward to meeting them again at future events. Wendy told me that she has joined the History of Geology Group (HOGG), so she is likely to meet some of us in the future.

Oil companies have been cutting costs after lockdowns and travel restrictions caused collapse in demand and prices, despite a recovery in the third quarter, aided by supply cuts from big producers, and a rise in demand as restrictions eased. Oil price has fallen again as Covid-19 cases surge and new lockdowns are introduced. Some major global oil companies have announced cuts to their workforce of between 10 % to 15%, these include over 3,000 jobs to go in the U.K., amongst the earmarked job losses are petrophysicists, development geologists, and technical assistants, I am concerned that some HCNRG members could be affected.

Rudy Domzalski FGS (HCNRG Secretary) and I are slowly and gradually building up and verifying contacts with companies in the oil and gas sector as well as with other geoscience companies in the HCNRG areas; we are preparing to offer our assistance to HCNRG members who are unemployed and looking for new employment in their specialised geoscience disciplines. If you know any geoscience companies that have vacancies, or you are looking for new employment, please let us know. It is by far cheaper for a company to recruit a geoscience technical staff via us rather than from an employment agency, simply because there is no cost involved in having our assistance.

Femi Tanimola has many years of working experience in the oil industry, I am delighted Femi has kindly accepted my invitation to contribute an article to the HCNRG newsletter with an introduction and abstract of his 28-page condensed research paper entitled **'Layoffs and pandemic: Is oil industry identity a barrier to career transition ?'**; Femi has recently launched a group in Bedfordshire which aims at mentoring and coaching people who are out of work to make an attempt at commercialising their skills. Femi invites HCNRG members to contact him for a full copy of his research paper or discuss other work-related issues; thank you for your help Femi.

Adam Dawson FGS, a keen and well-travelled professional geologist, and a familiar face at many past HCNRG field trips, has unreservedly contributed a full-length, informative and entertaining article, simply entitled '**Ascension Island**'. In his article Adam included many pictures he took on the fascinating geology and local natural history (green turtle and booby) which he has encountered on his tour of the island; he recommended visiting Ascension Island, quote '*I'd hesitate to describe it as a volcanologist's paradise on account of the lack of current eruptive activity. And certainly, don't pencil it in for your next wedding anniversary as it's not a luxury destination and the infrastructure is pretty basic. But in terms of off-the-beaten track locations, it must certainly be near the top of the list, and the geology is spectacular with lots of puzzles to resolve and doubtless new secrets to unearth.*'

Adam, thank you very much for sharing with us your first-hand experiences of the many interesting facets of Ascension Island; I would think that many HCNRG members would, after reading your article, buy your recommendation to tour Ascension Island, I bought it.

Richard Noy Trounson FGS is a barrister in employed practice who specialises in environmental law and his well-researched article is packed with comprehensive information on the detailed history of the coal mining in Great Britain and the most topical current event of a possible new deep coal mine in Cumbria. This is designed to exploit coal reserves estimated at some 750 million tonnes from under the sea near Whitehaven at the proposed Woodhouse Colliery, pending the grant of planning permission from the Secretary of State for Housing, Communities and Local Government after the Cumbria County Council the mineral planning authority has approved the project. Richard's article entitled '**The decline of the British Coal Industry: time to all a halt? A personal view**'.

Richard's view on the future of the British coal mining industry is - quote from his article '*King Coal has clearly been dethroned, but there may be a case for coal mining operations continuing in special cases, as with recent ventures to mine tungsten, lithium and polyhalite, subject to the strict environmental controls which society now requires.*'. Well said Richard.

My own article for this newsletter is entitled '**Four earthquakes in two weeks in Bedfordshire put Leighton Buzzard bold on the map**'. HCNRG members who live or work in Bedfordshire and Buckinghamshire may have experienced the effect of these 2020 local earthquakes first-hand.

I have received Journal of the Geological Society November 2020 issue, disappointingly knowing that it is the last paper issue of the journal because all future issues will be online only.

A HCNRG member sent in his thought to me, he said '*Now that the GSL is no longer producing a paper journal, content is only available via the website. Whilst many of us spend 100% of our work lives stuck in front of a computer, I always read the journal in paper which I have been happy to pay a supplement to support the cost of printing and distribution. That option is now ending, without consultation as far as I can see.*

*Further to this access to journal content is locked into current membership. So, if one is made redundant and can no longer afford the membership fees, one is denied access to content you gave already paid for. Also, when we retire this journal content access evaporates. With paper we would still have access. To this end I have suggested the society allows former fellows access to what was available when they were paid up fellows. This is fair which is something that is becoming more important these days.*

*This is a fight back against commercialism of the society, but would have little impact on finances. All they would need to do is adjust the online systems to give former fellows*

*access to what they have already paid for. As you know I have considerable experience in publishing, subscription systems and IT so I can say a competent developer could able this relatively easily.'*

If you would like to express your view on the matter of the publications of Journal of Geological Society, please let me know at the usual HCNRG e-mail address and mark for my attention, I look forward to hearing from you.

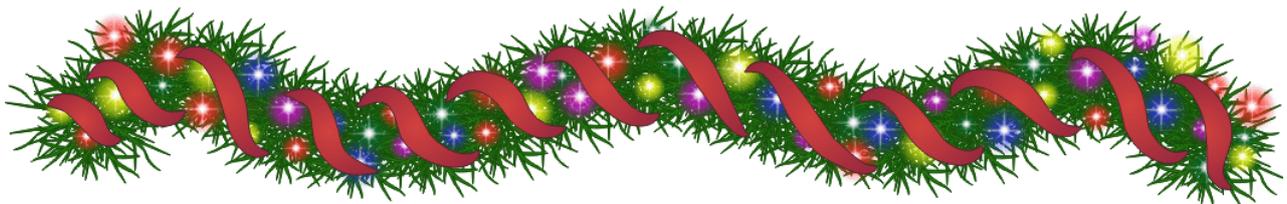
I am informed recently that there is a future project in the spring of 2021, to access and survey the condition of some of the SSSI sites across Bedfordshire, Cambridgeshire and Hertfordshire, if you are suitably qualified at carrying out geological surveys and prepared to travel, you may be able to help with these, with expenses paid. For further information please contact me at the HCNRG email address.

The Geological Society Executive Secretary sent a survey to all the regional groups, to find out our views on the existing fellowship categories, fee structure, and membership benefits. I attached the cover letter of the survey in this newsletter for your information.

The closing date to submit your articles, reports, and letters for publishing in HCNRG Newsletter issue 11 is Monday 1<sup>st</sup> February 2021. Please send your articles to the HCNRG email address or direct to me. I thank you for your support in advance.

The Committee and I thank you for all your valuable support and useful feedback that we always appreciate. We wish every HCNRG member and their families have a peaceful, happy Christmas, good health and stay safe.

John Wong FGS, Chair HCNRG



## **CONTENTS ISSUE 10**

<b>Newsletter issue 9 - Opening words from the Chair .....</b>	<b>page 1 - 4</b>
<b>John Wong FGS (Chair HCNRG)</b>	
<b>Contents Newsletter Issue 10 .....</b>	<b>page 5</b>
<b>2021 Education Competitions .....</b>	<b>page 5 - 6</b>
<b>Rudy Domzalski FGS (Secretary HCNRG)</b>	
<b>Ascension Island.....</b>	<b>page 6 - 13</b>
<b>Adam Dawson FGS</b>	
<b>Layoffs and pandemic: is oil industry identity a barrier to career transition? .....</b>	<b>page 14 - 15</b>
<b>Femi Tanimola</b>	
<b>The decline of the British Coal Industry: time to call a halt? A personal view.....</b>	<b>page 15 - 23</b>
<b>Richard Trounson FGS</b>	
<b>Four earthquakes in two weeks in Bedfordshire put Leighton Buzzard bold on the map .....</b>	<b>page 24 - 26</b>
<b>John Wong FGS</b>	
<b>The Geological Society survey for fellowship categories, fee structure, and membership benefits .....</b>	<b>page 26 - 27</b>
<b>Kate Puchcinska-Kwiatk Member Services Officer on behalf of Ricard Hughes Executive Secretary</b>	
<b>Thank you and Merry Christmas .....</b>	<b>page 27</b>
<b>John Wong FGS</b>	

### **2021 Education Competitions**

**Rudy Domzalski FGS, Secretary HCNRG**

For the foreseeable future there will be only one person working on the Educational Department initiatives. For this reason, the Geological Society of London will not be running the Early Career Award in 2021.

However, the Schools Geology Challenge will happen entirely digitally in 2021. We hope to return to an in-person final in 2022.

The Education Committee have discussed the Schools Geology Challenge and they have decided to make some quite significant changes. The plan for 2020/21 is to reshape the challenge for the schools

who are regulars, before launching a strategy for increased participation and inclusion from 2021/22 onwards.

From 2020, we will no longer hold Regional Heats for the SGC. For the “heats” stage, students will instead submit a piece of work digitally, which will be assessed by a panel of judges, and we will invite the top 10 scoring entries to the virtual final in 2021.

Though the HCNRG are not running heats nor getting involved with the finals we strongly encourage schools to enter the competition this year as it benefits the students’ learning and online presenting skills.

If you would like to express interest in the School Geology Challenge, please contact Rudy ([homecountiesnorthregionalgroup@gmail.com](mailto:homecountiesnorthregionalgroup@gmail.com)) Equally, please get in touch if you have questions in the meantime or want to discuss these changes further.

## **Ascension Island**

**Adam Dawson FGS, October 2020**

*All photos were taken by the author*

Ascension, a lonely mid-Atlantic UK-administered volcanic island, normally enjoys a quiet existence, out of the limelight and well away from public attention. Occasionally, however, events disturb this tranquillity – the Falklands War in 1982, the failure of the island’s runway in 2017, and most recently in September this year when the Home Secretary eyed it up as a possible holding area for asylum seekers. Its sense of isolation and air of mystery make it an alluring destination for intrepid travellers.

So, given the current spotlight, now seems a good opportunity to recall some details of a visit I made to the island, back in May 2012. This is not a comprehensive geological treatise, but a personal account of my visit. Those interested in learning more about the geology might wish to visit sites such as <https://bit.ly/37SLoNG> or <https://bit.ly/31Rilpl> .

### **Overview**

First, some facts and figures. Ascension is small – approximately circular and 10 km in diameter – and remote. It lies 8 degrees south of the equator and is 1300 km north of the nearest land (St Helena), 1600 km west of Africa, and 2300 km east of Brazil. There is no permanent population, but some 800 transient residents, mostly attached to the military airbase with the now-defective runway. Its mid-Atlantic location made it a strategically important staging post for the air-bridge to the Falklands, and it is also used by the BBC as a relay station for the World Service. Various satellite-tracking and other military installations share the island, some of which are operated by the US. The runway was a fallback landing site for the Space Shuttle and to perform this role it had to be extended. So, for a while, at 3054 m it was one of the longest on earth. Along with two other

equally isolated Atlantic islands, Ascension is a British Overseas Territory and is administered by the Governor of Saint Helena, Ascension and Tristan da Cunha, who resides in St Helena.



**Figure 1 Overview (left) and detailed (right) maps. The red dot on the left marks Ascension Island**

## The geology

Geologically speaking, Ascension is young. The oldest rocks above water are believed to date from about 1 Ma. However, the seamount that became the Ascension Island stratovolcano started to form on the ocean floor 3000m below the surface, much earlier – around 6 Ma. There is some debate about the origin of the island and its volcanism. It lies 90 km west of the Mid Atlantic Ridge, so it seems possible that this divergent plate boundary may have been involved. Alternatively, the island may lie atop a shallow mantle plume, similar to Hawaii. There is however no clear evidence of an island- or seamount-chain, which might be expected if this were the case.

The island's "footprint" on the seabed is some 2000 km<sup>2</sup> compared to 90 km<sup>2</sup> above sea level, meaning that only around one percent of the entire volume is actually above the surface. Ascension has experienced both explosive and effusive volcanic activity, laying down a variety of pyroclastic features (40% of the exposed land surface) and a'a- lava flows and domes (60%). Somewhat unusually, Ascension's rocks display the whole range of SiO<sub>2</sub> content, from mafic (basalt, 59% silica) to felsic (rhyolite, >65% silica).

## Getting to Ascension Island

In the past, it was possible to travel as a fare paying passenger on air-bridge RAF flights from Brize Norton to the Falklands – a refuelling stop was made in Ascension, where you could disembark. This was how I got there in 2012. There was a single hotel in the capital, Georgetown, which provided basic accommodation. Geologists would relate to the name – the Obsidian Hotel – a reflection on the island's igneous origins. In 2017, the runway failed because of surface damage caused by blast from the powerful engines used on modern wide-bodied jets. Since then, it not been possible to travel directly to from the UK to the island, although there is a once-monthly flight from St Helena and connections from there to South Africa. Nowadays, the RAF operates via Cape Verde

and the hotel has closed. It is rumoured that the runway may be repaired in 2022, but whether the RAF will be taking paying passengers again, and whether the hotel will reopen, remains unknown.

My purpose for visiting was mostly to explore on foot, but I do have an interest in mid-ocean volcanic islands, so I was keen to see how the island compared with some of the more accessible destinations I'd also visited – the Canaries, Madeira, Hawaii, Iceland and so-on. My first impression on arrival was that the island is hot and arid, but strangely British. Traffic drives on the left, and familiar British road signs are used. A curious mix of St Helena pounds, pounds Sterling and US dollars forms the local currency.



**Figure 2** RAF Brize Norton

## **Getting around**

My exploration of the island was guided by the “letterbox” system established on the island by military personnel with time on their hands. There are 20 or so of these “boxes” dotted around the island, each a bit like a geocache where you can sign a logbook and stamp a personal notebook to record your visit. Visiting the letterboxes takes effort but enables you to see some of the most scenically – and geologically – interesting parts of the island. A guidebook has been published but is only available on the island itself. There is a good (surfaced) road network on the island, which I travelled using the folding bike that I took with me. But the final few km to the letterboxes themselves have to be hiked on foot.



**Figure 3** The author heading off to the Letterbox Peninsula

### **Coast and interior**

I soon discovered that Ascension is no sun-drenched tropical paradise.

Although the beaches are good, the sea is violent and treacherous – not ideal for swimming. And many of the beaches themselves are protected sites for nesting turtles. The interior is a jumble of inhospitable lava flows, scoria cones (of which there are at least 50) and cinder.



**Figure 4** Nesting green turtle on Clarence Bay

There is little vegetation in the coastal area, apart from Mexican Thorn, which was introduced in the early 1970s to stabilise loose soil and is now becoming an invasive pest. The high point of the island, however, is more heavily vegetated. The clue is in the name – Green Mountain – which at 859 m supports a miniature rainforest. Here too, however, the ecosystem is manmade – this time the vegetation owes its origins to Joseph Hooker, a botanist from Kew Gardens who visited in the 1840s and who opined that planting vegetation would encourage higher rainfall and augment the island’s sparse water supply. It does seem to have been successful, although at the expense of crowding out some of the native flora. Nowadays, drinking water comes from a desalination plant at the BBC’s power station.

Hiking is hard work. There are very few visible trails and accessing the interior requires crossing aggressive a’ā lava fields, scrambling up cinder cones and scaling precipitous trachyte domes. A very good head for heights is needed. But, as a relatively young island with a dry climate, the geology remains well exposed and un-weathered. So, venturing off the beaten path offers the opportunity to examine first-hand a wide variety of volcanic features, all conveniently situated relatively close to each other.

Some of the highlights I visited included:

### **Perfect Crater**

The aptly-named Perfect Crater, accessible via an ankle-twisting trail from Sisters Peak, is an excellent example of a scoria cone and is in fact the one of the few on the island with a complete rim.



**Figure 5 Perfect Crater from Sisters Peak**

The others have generally been breached on the south-east slopes by lava flows, reflecting the weakening of the slopes on this side by the prevailing trade winds.

### **Broken Tooth**

Whilst there is abundant evidence of recent volcanism, there is still no definitive understanding of when the most recent eruptions actually occurred. There have been none since the island's discovery on Ascension Day (hence the name), 1501. But Argon-Argon dating some of the lava flows to the north of the island – near Sisters Peak – suggest they were deposited in the last 2000 years. From Sisters Peak, it is possible to see how the breach flow from nearby Broken Tooth crater is crossed by the subsequent and most recent eruptive flows from Sisters. To access Broken Tooth itself involves a hazardous crossing of this featureless lava flow. The sense of trepidation is enhanced when you remember there is no mobile phone network to call for help, and no rescue service even if you could. The guidebook advises you to follow the cables laid across the lava which were used in the past by the military to detonate and test explosive devices at the foot of the crater. Not exactly a reassuring waymark.



**Figure 6** Broken Hill crater in the background, breach flow crossed by the Sisters Peak lava flow in the foreground

### **Letterbox peninsula**

To the extreme east of the island lies the Letterbox Peninsula. It's accessible via a terrifying circumnavigation of the White Hill lava dome using the vertiginous Goat Path followed by a

scramble down from Louie's Ledge. But worth making the journey because the Peninsula is the only fissure flow on the island – all the other flows emerge from single vents. While there, you can



**Figure 7 Masked Booby nesting on Letterbox Peninsula**

also examine the numerous small craters left by the impact of volcanic bombs, and now forming convenient nesting sites for the numerous Boobies which breed here.

### **Gas caves**

Notable throughout the island, but particularly visible on the slopes of Mountain Red Hill, are the caves and ledges which appear to be embedded in the volcanic deposits. They may have been caused by gas trapped in pyroclastic flows, but during my visit I was not able to establish their origin definitively.



**Figure 8 Gas caves(?), approx. 2m high, on the slopes of Mountain Red Hill**

## Devil's Riding School

Among the many curious features of Ascension, one of the strangest must be the Devil's Riding School. This circular depression, around 700 m in diameter, is thought to be a relic of a massive volcanic explosion and was first described by Charles Darwin in 1836. The crater filled with water and as this dried and eroded, successive layers of ash were exposed, each a different colour and giving the crater its characteristic "bullseye" appearance. White coloured soft chalky globes about 5cm in diameter can be recovered from the centre of the "Riding School". The chalky coats possibly coalesced around smaller hard pebbles which rolled around the bottom of the lake as it dried up. But the actual origin of these objects perplexed Darwin and still seems obscure today. They are locally known as Devils Eyeballs.



**Figure 9 Devil's Riding School**

## Concluding

In summary, Ascension is a fascinating destination, and should the air-bridge ever be reinstated, would definitely be worth a visit. I'd hesitate to describe it as a volcanologist's paradise on account of the lack of current eruptive activity. And certainly, don't pencil it in for your next wedding anniversary as it's not a luxury destination and the infrastructure is pretty basic. But in terms of off-the-beaten track locations, it must certainly be near the top of the list, and the geology is spectacular with lots of puzzles to resolve and doubtless new secrets to unearth.

# **Layoffs and pandemic: is oil industry identity a barrier to career transition?**

**Femi Tanimola**

As the double black swan of continued over-production and a global pandemic force service companies and operators to enact another set of lay-offs on the back of the 2014-16 redundancies in which I was affected, the research work I carried out for the award of M.Sc in Organizational Psychology in 2019 comes to mind and guide the actions of affected workers as they deal with unemployment and job search.

The research examines coping narrative of workers after redundancy and how they make sense of their identity when making career transitions. Narrative analysis of semi-structured interviews of 9 participants from different companies who were made redundant at various stages in their careers was used to explore their identity, sense-making of job loss and how they approached identity reconstruction.

Outcomes of the participants' narrative analysis indicated a tension in efforts to transition into new career through identity reconstruction while holding on to pre-redundancy work identity. Career identity, therefore, becomes a paradox for stability as well as a barrier to identity reconstruction and career exploration.

The practical implications is that workers could extend their network beyond their primary industry sector while employed and be better supported at the time of redundancy to explore career opportunities beyond the oil industry in order to enhance a successful transition. The novel theme of the oil barrel as a boundary highlights the strain imposed upon individuals by strong professional identification, their engagement with employers in particular, and the oil industry in general.

The paper abstract is below:

**Title: Coping with Redundancy & Unemployment: Is the Oil Barrell a Barrier to Transition for Oil industry Workers?**

**Abstract:** Purpose - This paper analyses the coping narrative of oil industry workers after redundancy and how they make sense of their identity when making career transitions.

Design/methodology/approach - Narrative analysis of semi-structured interviews of oil industry workers was used to explore their career identity, sense-making of job loss and how they approached identity reconstruction.

Findings - Outcomes of workers' narrative analysis indicated a tension in efforts to transition into new career through identity reconstruction while holding on to pre-redundancy career identity. Career identity becomes a paradox for stability as well as a barrier to identity reconstruction and career exploration.

Practical implications - Workers could extend their network beyond primary industry sector when employed and be better supported at the time of redundancy to explore career opportunities beyond the oil industry in order to enhance a successful transition.

Originality/value - The novel theme of the oil barrel as a boundary highlights the strain imposed upon individuals by strong professional identification, their engagement with employers in particular, and the oil industry in general.

Please contact me if for a full copy of the research or you'll like to discuss other work-related issues. The full research paper can also be accessed here.

[https://www.researchgate.net/publication/341113459\\_Job\\_Cuts\\_Is\\_the\\_oil\\_industry\\_identity\\_a\\_barrier\\_to\\_career\\_transition](https://www.researchgate.net/publication/341113459_Job_Cuts_Is_the_oil_industry_identity_a_barrier_to_career_transition)

Author: Femi Tanimola, email: [femi@tanimola.com](mailto:femi@tanimola.com)

## **The decline of the British Coal Industry: time to call a halt? A personal view**

**Richard Noy Trounson FGS**

At the time of writing, planning decisions are in the balance for the authorisation of a new deep coal mine in Cumbria, designed to exploit coal reserves estimated at some 750, 000 000 tonnes from under the sea near Whitehaven, at the proposed Woodhouse Colliery.

Cumbria County Council, the mineral planning authority, has approved the project, but the grant of planning permission is subject to a holding direction from the Secretary of State for Housing, Communities and Local Government, pending a decision whether or not to call in the application for determination.



Impression of proposed pithead at Woodhouse Colliery-West Cumbria Mining

The issue is controversial, because environmental activists consider that the project is incompatible with the UK's obligations to take action against climate change. However, proponents of the scheme argue that the proposal is to extract metallurgical coking coal for use as an electrode in the steel-making industry, and not as a fossil fuel for heating or to generate electricity. The argument is that that mining the coal would reduce carbon emissions, by reducing transportation distances to the steelworks, and that other emissions would be neutral.

It is understood that some 80% of the production would be sent to the Redcar Bulk Terminal for export, so that although it is proposed that it would be sold into European markets, it might be difficult to guarantee the reduction of global carbon emissions, as opposed to those of the UK. It is said, however that this will be addressed by a carbon-related planning condition. It would appear, moreover, that the project would create significant new employment in the area and beyond and is therefore keenly supported by local politicians. The digitally generated impressions of the proposed new pithead on West Cumbria Mining's website show a group of space-age hangars and sheds, which would seem to fit relatively unobtrusively into the local countryside.

If the application for planning permission is granted, the mine, the first new large deep colliery in this country since the Ashford by super-pit opened in 1987, would seem to represent a revival of the British Coal-Mining Industry, though relative to what the industry once was, only on a microscopic scale.

From the beginnings of the Industrial Revolution, the coal industry was arguably the most important industry in the country, because it powered that Revolution.

The private ownership of minerals<sup>1</sup> other than silver and gold ( which was held by the courts in the 16<sup>th</sup> century to be the law of England ) initially favoured their exploitation, and this may have been a factor behind the Industrial Revolution starting to a considerable extent in Great Britain, rather than elsewhere, where minerals usually belong to the state.

Great Britain had advantage of having many areas with Carboniferous geology ( with coal and iron reserves in close proximity), and one additional factor behind the Industrial Revolution was perhaps the fact that, before the advent of planning controls, there was no need to get the permission of the state to mine, and it was also in the economic interests of landowners to encourage mining.

In 1870 the UK produced half of the world's coal, but in 1913 annual coal production peaked at 287 million tonnes. Thereafter, barring a few short-lived and temporary booms, it was decline. See the attached graph of production and imports of coal in the UK.

---

<sup>1</sup> Needless to say, I am using the word "minerals" here, not in the geological sense, but as the word is used by lawyers, economists and the general public



■ Graph by Plazak from DECC data: UK coal production and imports (Wikipedia)

How did this decline come about?

Fundamentally, the industry succumbed to foreign competition from mines in other countries which could produce coal more cheaply and efficiently. Coal can be shipped very cheaply by sea, but relatively expensively by land, so British-mined coal could only compete if it was mined relatively close to where it could either be used or dispatched by sea, or where the coal had some special quality, which made it particularly attractive, despite a relatively high price.

After World War I, the British industry was too large for its likely markets, partly as a result of foreign competition. Its history thereafter was one of decline. Nevertheless it was an industry that had considerable life in it as a national source of energy supply, (under national ownership for much of the second half of the twentieth century) until its more recent and catastrophic decline in response to changes in Government policy, even more overwhelming competition from overseas, and contemporary environmental considerations.

During the First World War, the Government took powers to control the industry, partly to secure strategic direction during a critical phase of the war, partly to stave off the threats of industrial action. That was intended to be for the duration of the war, but in the event Government control lasted significantly longer.

After that War there were a number of problems: the UK coal industry was not competitive as an energy source globally, with the move to oil as cheap production came on stream in Africa, India and China, and there were also more competitive coal industries in Europe, especially Germany, and also Poland after WW1. The position was aggravated after the Dawes Plan in 1924 permitted

German war reparations under the Versailles treaty to be paid to France and Belgium in coal. That undercut important export markets.

The poor competitive position reflected the background that the British industry itself was also in a poor way: much of the best and most accessible coal had been worked out; extensive investment was required to exploit new reserves; and upgrading and maintenance of the existing pits had been neglected in the war.

That poor competitive position was aggravated by the UK's return to Gold Standard in April 1925, which made British exports more expensive.

Industrial relations were also poor. The powerful Miners Federation of Great Britain ("MFGB": the predecessor of the NUM) had by 1914 secured a national agreement on conditions and a minimum wage and was pressing for nationalisation of the industry. By 1914, it had also entered into a "Triple Alliance" with the Railwaymen and Transport Workers. Government policy after the war was therefore heavily influenced by fears of a general strike leading to socialist revolution. There were in fact major strikes, after the Government had relinquished control, in 1921 and 1926 (the General Strike). These were due to miners, who had been the aristocrats of the working class before the war, and felt they were certainly entitled to a "living wage", demanding wages which the colliery owners could not afford in the changed circumstances. The MFGB therefore posed a big potential threat to Government, though the post war strikes in 1921 and 1926 were to show it overreaching itself, making poor tactical judgments about the timing of strikes and taking the support of other unions, and indeed some of its own members, for granted.

There were two Royal Commissions on the Industry after the war, the Sankey Commission (1919) and the Samuel Commission (1925-26), but neither resulted in an agreed position.

The first of these was a response by the post-war coalition Government under Lloyd George, to the demands at the end of the war by the MFGB for nationalisation to be carried out, which were opposed by the colliery owners. At that time the post-war problems of the industry had not yet become apparent. Both sides thought the industry would be profitable, and it was therefore important for the mining union to press for nationalisation and, as they saw it, workers' control. The colliery owners wanted their industry back.

The Sankey Commission consisted of representatives of both sides of the industry and some other business interests, headed by a High Court Judge<sup>2</sup>. The Commission could not agree, and four different reports were issued. The majority (but not the representatives of the colliery owners) recommended some form of national control, and all favoured nationalisation of the reserves of unworked coal.

Lloyd George was dependent on Conservative support, so the Government used the lack of agreement as a pretext (after some prevarication) for kicking issues into the long grass. It subsequently quickly relinquished control to colliery owners when it saw that the industry would in fact be unprofitable and would incur losses, against the background of a serious trade depression and a slump in coal exports.

The second Royal Commission was part of an attempt by a later, Conservative, Government to avert a General Strike<sup>3</sup>

---

<sup>2</sup> Sir John Sankey was highly unusual for a judge in those days, in that he had socialist leanings: he subsequently became a Labour Lord Chancellor

<sup>3</sup> This was a time of political instability. In 1922 the post-war coalition Government fell, and a subsequent General Election was won by the Conservatives under Bonar Law. However, Bonar Law was soon diagnosed with terminal throat cancer, and was succeeded by Stanley Baldwin. In December 1923 the Conservatives under Baldwin called a General Election to seek a mandate for Imperial Preference and Protection. At the time a

Having initially refused to support the industry, that Government agreed to a package under which it would pay a nine-month subsidy to the industry if the colliery owners withdrew their notices to withdraw from the national agreement and reduce wages. At the same time it announced a new Royal Commission into the Industry.

The Samuel Commission, led by Sir Herbert Samuel, a banker, did not represent different coal industry interests, but public and business figures, mainly of a Liberal disposition. It sat from October 1925 to January 1926. In March, it recommended the reorganisation of the industry and the nationalisation of coal reserves but rejected the nationalisation of the industry. It recommended the end of the subsidy and reductions in wages. In effect it was critical both of the colliery owners for not rationalising their undertakings to reduce surplus capacity and of the Union for seeking unrealistically high wages.

The Report was discussed between the Mining Association (representing the owners) and the MFGB, and there was also Government involvement, but no agreement was reached, and this led to the General Strike.

Both Royal Commissions recommended the nationalisation of the coal reserves. In changed circumstances, private ownership of the coal, which usually either was vested in large landed estates or in a multiplicity of surface owners, was now separated from the ownership of the colliery undertaking. This posed an obstacle to the reorganisation of the industry, because a colliery owner now generally had to negotiate with a local monopoly to acquire the necessary working rights<sup>4</sup>. For that reason, amongst others, attempts by the Conservative Government in 1926, to encourage rationalisation by enabling colliery owners to force others into amalgamation schemes, and by a later short-lived minority Labour Government in 1930, to strengthen this through a Coal Mines Reorganisation Commission, had little or no practical effect<sup>5</sup>.

The problem here, was that in the 1920s and early 1930s nationalisation of the coal reserves, though it might have been supported by the Labour Party and the unions, could not have been afforded by the country, because in practical terms it meant generously compensating the owners of the coal, who were well represented in the House of Lords, still a relatively powerful body.

Paradoxically this reform was achieved by a Conservative-dominated National Government. First under Ramsay MacDonald, after the fall of the minority Labour Government, and then under Stanley Baldwin, this abandoned the Gold Standard, and implemented protectionist tariffs and imperial preference, to stimulate recovery. Initially, it focussed on reducing the deficit, but then began spending, particularly on housing, following Keynesian thinking. Later, Defence spending, in response to threats of war, stimulated the economy further.

---

very strong strand of public opinion was in favour of trying to return to the economic circumstances and conditions which prevailed before the war, including free trade and the pound on the Gold Standard. Hence the protectionism favoured by Conservatives but not by Labour and the Liberals was not very popular. The Conservatives lost the election, and a short-lived minority Labour Government under Ramsay MacDonald persuaded the colliery owners to agree to a 13% pay rise and a national agreement on conditions. In October, there was a fresh General Election and the Conservatives were returned, but on rather different policies. In April 1925 UK returned, under those new policies, to the Gold Standard, with a severe effect on coal exports and profits. The colliery owners sought to terminate the national agreement, reduce wages and end guaranteed minimum wage, and this resulted in the unions threatening a General Strike

<sup>4</sup> , Legislation was introduced in 1923 to provide a procedure under which any mineral operator, not simply a colliery owner, could make an application to the Secretary of State, and then to the Court, where it could be opposed, for compulsory working rights. That legislation, which is still in force in re-enacted and consolidated form, was thought to have solved the problem, but is in practice cumbersome and ineffective, and seldom used

<sup>5</sup> The provisions were significantly weakened in the House of Lords. In particular schemes would require judicial approval as being (1) in the national interest (2) likely to reduce costs, and (3) not unfair to, or likely to harm the financial interests of, any of the participants. Those were pretty high hurdles.

The policy nerd behind the National Government was Neville Chamberlain, who was Chancellor of the Exchequer, but became Prime Minister in May 1937<sup>6</sup>. He was a reforming “one nation” Conservative who promoted a large body of legislation to improve the lot of the poor. He was able to do this, because although dominated by Conservatives, the Government also had to appeal to Labour and Liberal votes in Parliament. Chamberlain took a particular interest in promoting conditions in which the coal industry, an industry which had a particularly significant role in providing employment in poorer areas, could thrive.



The Coal Act 1938 nationalised the coal reserves in Great Britain and instituted a regime very similar to that which governs what is left of the industry today<sup>7</sup>

It can be seen as an important attempt to help the industry. It did this by establishing a Coal Commission to oversee its development, addressing problems relating to the ownership of coal in the ground by vesting virtually all unworked coal and mines of coal in Great Britain in the Commission, by strengthening existing provisions for the reduction and amalgamation of colliery undertakings, and by making provision for miners' welfare in terms of pithead baths etc. The Commission was not itself to engage in coal-mining, but was authorised and required to grant leases of coal and mines of coal to colliery undertakings, and to manage the resource in the interests of the efficiency and better organisation of the coal mining industry.

However, the regime established under the Act, which was slightly “tweaked” in 1943, after the unworked coal had vested in the Commission, was, short-lived<sup>8</sup>. The industry was much more radically changed by the nationalisation of the Industry after the War.

This was the nationalisation which took place in 1947, under the post-war Labour Government, and enacted under the terms of the Coal Industry Nationalisation Act 1946.

---

<sup>6</sup> These included the Unemployment Act 1934 which established the Unemployed Assistance Board, the Factories Act 1932, the Holidays with Pay Act 1938, and the Housing Act 1938 I remember Chamberlain’s portrait looking down us from the wall of the Speech Room at School. Any pride in him, as the only UK Prime Minister the School produced, was rather diminished by his being, perhaps unfairly, associated with the failed policy of Appeasement Arguably, he bought time for additional spending, especially on the RAF, to prepare for war, and he certainly had no private illusions regarding Hitler, whatever he may have said at Croydon Aerodrome. (we did, also, produce a rather obscure Prime Minister of the early Third Republic in France, one Henri Waddington),

<sup>7</sup> In a talk I gave a couple of years ago to HoGG, I called it “the forgotten nationalisation”, because it is overshadowed by the subsequent nationalisation of the industry under the Post-War Labour Government

<sup>8</sup> The 1938 Act only made limited changes to the law on withdrawing support from land to work coal; leaving fundamental problems on this and on subsidence damage from coal-mining operations unresolved until well into the lifespan of the nationalised industry

The Act also left untouched most interests in coal of former tenants and their successors, where land had once been “copyhold” land i.e. land subject to manorial customs



That Act nationalised the coal mining assets of the colliery undertakings, as opposed to the companies themselves, and created, subject to very limited exceptions, a statutory monopoly of coal mining in Great Britain, under a new national corporation, the National Coal Board<sup>9</sup>, which took over the Coal Commission's interests in the coal, but also managed all but a few small licensed collieries.

That nationalisation is commonly recalled by the public from contemporary pictures showing a miner looking at a notice announcing the nationalisation of his colliery.<sup>10</sup>

As a result of the socialist nationalisation of both industries, both the coal-mining and electricity generating industries were now in the public sector. That provided significant protection for the coal industry, because in effect it guaranteed a market for its output. The war had also mitigated the economic issues with the British Industry through the emergence of a new, and much cheaper source of supply in the form of Opencast Mining. This

was developed during the war as an additional source of energy by the Government, using wartime emergency powers, and employing civil engineering contractors.

After the war, this remained entirely separate from the nationalised deep-mining coal industry until the late 1950s, when an Opencast Executive within the National Coal Board was established on a permanent basis under specific legislation. While this provided the NCB with a new source of more cheaply mined coal, it did however involve drastic, if temporary, impacts on the local environment. That meant that with increasing national wealth, and correspondingly increasing interest in environmental issues, opencast coal operations would become increasingly contentious, and in the course of time it would become more and more difficult to secure the planning permission required for opencast projects.<sup>11</sup>

Even with a nationalised electricity generating industry as a customer, the deep coal mines became increasingly uneconomic, though the NCB did invest in mechanisation, and by the end of the 1950s was producing some of the cheapest coal in Europe.

The power stations turned to alternative sources of supply and energy. Cheap oil was imported in the 1950s both for electricity generation and for domestic heating, and in the 1960s, the industry lost a major customer with the abandonment of steam traction on the railways.

---

<sup>9</sup> The National Coal Board (or NCB) was subsequently renamed the British Coal Corporation (generally referred to as "British Coal"), by the Coal Industry Act 1987

<sup>10</sup> Apart from the vividness of this image, and the intrinsically greater importance of the 1946 Act, the earlier nationalisation of the coal resource is probably overshadowed among the public at large because that nationalisation does not fit in with the "narrative" of either of the contemporary political parties. The Labour Party is naturally more proud of the post war nationalisation, and the Conservative Party, which provided by far the largest component of the National Government, is uncomfortable with the concept of nationalisation.

<sup>11</sup> Originally, the Opencast Coal Act 1958 provided for Opencast developments to be authorised by the Secretary of State, and authorisation provided deemed planning permission, as with other energy developments, However in the late 1980s this was changed to require opencast developments to be the subject of a planning application to the mineral planning authority

Pit closures became increasingly common, both under Labour and Conservative Governments. Investment in new capacity to replace the closed pits was limited, and not very successful, as is shown by the history of the Selby and Ashford by projects, the failure of both of which were at least in part due to over-enthusiasm by mining engineers for technically interesting projects, which caused geological and other potential problems to be under-estimated.

The history of the industry in the second half of the twentieth century had therefore become very much one of managed decline.

The difficulties of the industry were compounded by industrial relations problems, due to increased militancy on the part of the National Union of Mineworkers (“NUM”) That was successful against the Heath Government in the 1972 Miners’ Strike, but not in the 1984-1985 Strike, against that of Margaret Thatcher, which set itself against the “Butskellism” characteristic of the decades after the War.

By the end of the 1980s, the Government had decided to privatise both the electricity suppliers (leading to an increase in imports of much cheaper foreign coal) and the coal industry itself.

By 1992 there were 51 collieries in production. These were reduced to 15 by the time of privatisation under the Coal Industry Act 1994. That Act provided for the sale of “packages” of collieries and opencast mines previously operated by British Coal to be sold off to private mining undertakings. The coal reserve assets of the Corporation were vested in a new Coal Authority. This licences coal mining operations and grants leases of the coal to mining undertakings. However, what are now the more important part of its functions consist in repairing subsidence damage caused by coal mining which occurs outside the area of responsibility of a current coalmining operator, dealing with water pollution caused by historic coal mining operations, and managing the records of the industry for the benefit of interested professionals and members of the public, such as those conducting mining searches. More recently, the Authority has entered on new functions and activities, such as using its expertise to assist with remediating mine water pollution from metalliferous mining and facilitating the development of colliery workings as a source of thermal energy.

However, the industry it serves has continued to decline. The last significant deep pit, at Kellingley closed in 2015. There are some four small deep mines in England and Wales, which together produced about 25 thousand tonnes in 2018. Additionally, there are a few surviving opencast mines. That reflects the fact that due to concerns over the contribution of fossil fuels to climate change, coal burning in power stations has all but been phased out and is due to cease completely by 2025.

In mid-June of this year, Great Britain generated electricity for over two months without burning any coal.

That was anticipated by the much-maligned Chairman of the NCB in the 1980s, Sir Ian MacGregor, who said that in his view, the future of coal was in the chemical industry, not the energy industry.

I personally played a role as a very small cog in the machinery for managing the decline of the coal industry. I little suspected this one day as a teenager sitting in a music room at school, waiting for the arrival of the master who would give me a lesson on the oboe. The music master arrived twenty minutes late, panting, and apologised. He said he had been listening to the news on the wireless, and had heard that “the Bloody Coal Board “had just killed a school-full of children”. That was the Aberfan tip disaster in 1966, which killed 144 people, 116 of them children, mostly of primary school age. The background to this disaster is well described by Ted Nield in his book “Underlands”

I was not to know then that I was to spend a significant proportion of my working life in the Legal Department of the “Bloody Coal Board”

After reading Modern History at University, and then reading for the Bar and completing Pupillage, I was looking for a salaried position. A post was offered in the NCB Headquarters Legal Department, and I found myself in a small team helping to advise the Board and its senior officials on legal questions relating to the operational side of the business, chiefly mining and health and safety law, and also looking after the interests of the Board in Parliament in respect of Private Bills<sup>12</sup> I was to spend some 17 years in the industry.

Highlights of my time included working on: benefits schemes for redundant mineworkers and those injured by pneumoconiosis; planning conditions for opencast mines to facilitate deliveries to power stations during the 1984-5 miners' strike; the drafting of decisions on licensing applications for private opencast mines, and helping to prepare and present a case before Private Bill Committees in Parliament to oppose the development of two proposed new port facilities on the Humber, which were to be used to import coal into power stations served by our remaining most profitable collieries. (One of the Bills was defeated: the other passed, but the delay meant that the project for the new terminal became uneconomic and was abandoned.)

Increasingly, however, I became involved in the developing area of environmental law, on the challenges to the industry posed by "acid rain", waste law, and during the privatisation process, Government proposals for new legislation on contaminated land. I helped my immediate superior develop a practice of "lawyer lobbying" of Government, already common in the US, but then only in its beginnings in the UK and the EU. My last major task in the industry was assisting in the successful defence of the Corporation against a private prosecution for mine water pollution from an abandoned mine brought by angling interests in South Wales.

Having stayed for the privatisation process, I then became an environmental and health and safety lawyer in private practice. Sadly, a significant part of my subsequent involvement with the industry was to be in the context of advising insolvency practitioners on liabilities relating to abandoned mines.

What future now for the British coal mining industry?

King Coal has clearly been dethroned, but there may be a case for coal mining operations continuing in special cases, as with recent ventures to mine tungsten, lithium and polyhalite, subject to the strict environmental controls which society now requires. The Government may satisfy itself that the proposed operations for mining metallurgical coal at Woodhouse colliery are such a case. If so, that would help provide the Coal Authority with a continuing role in the regulation of an operational coal industry, and with welcome revenues to assist with its other tasks in managing the coal resource and addressing the environmental impacts of historic coal mining.

---

<sup>12</sup> These are Bills promoted by private individuals or organisations, typically to authorise infrastructure projects, as opposed to Private Members' Bills, which are Bills to change the law of the land but promoted by individual Members of Parliament rather than by the Government. As they frequently confer compulsory purchase powers on the promoters, they can be petitioned against by those whose interests they affect, and the petitions are determined by a Private Bill Committee in each House, following proceedings which are similar to court proceedings. They have however now been largely replaced by an order-making procedure under the Transport and Works Act, mainly as a result of the amount of Parliamentary time taken up by the two Bills referred to below.

## **Four earthquakes in two weeks in Bedfordshire put Leighton Buzzard bold on the map**

**John Wong FGS**

I have studied the geology of Bedfordshire for many years and led a number of non-repeated field trips in the county for the Home Counties North Regional Group, but earthquakes in the area have never crossed my mind until the unprecedented successive tremors happened in September 2020.

Britain experiences between 200 and 300 earthquakes every year, most of which are not large enough in term of magnitude to be reported in the newspapers or on television news. The most significant earthquakes felt in Britain range from 4 to 6 in magnitudes on the Richter scale, but these are not common, and hardly occur within the Home Counties North area.

Globally, most earthquakes occur at the boundaries between the tectonic plates, where there is the largest amount of crustal stress. The British Isles are located within the western part of the Eurasian tectonic plate, an area which is not prone to major earthquake activity.

Global Positioning System measurements have shown that the whole of the British Isles is moving eastwards; earthquakes occurring in Britain are caused by crustal stresses built up in the rocks and relieved by sudden movements of fault ruptures along pre-existing fault planes, partly due to slow isostatic uplift since the end of the last Ice Age. The energy is released in the form of seismic waves that spread through the rocks with permanent stress and cause the land surface to shake; crustal stresses are also related to the movements from the constructive tectonic plate boundary of the Mid-Atlantic Ridge.

Minor earthquakes of magnitudes between 3 and 4 Richter scale have been recorded by the British Geological Survey, whose records show that there have been on average two earthquakes of magnitude 3 occurred around Britain a year. Earthquakes can occur anywhere in Britain because the stress field of the rocks beneath are under similar constant stress.

Magnitude 2.5 earthquake occur approximately 10 times a year, magnitude 1.5 earthquakes around 100 times a year. Every 10 years Britain get a magnitude 4.5 earthquake, and on average a magnitude 5.5 earthquake every 100 years. London is overdue for a significant magnitude 5 earthquake similar to the 1382 and the 1580 magnitude 5.5 earthquakes that affected London from an epicentre at a depth 10-20 miles (16–32 kilometres) in the Dover Straits, 86 miles from London. On 28<sup>th</sup> April 2007, an earthquake of 4.3 magnitude struck southeast Kent at 07:20 GMT, at a shallow depth of 3 miles (5.3 kilometres), the epicentre was close to the 1580 Dover Straits earthquake. The worst affected area of the 2007 Kent earthquake was Folkestone; Deal, Dover and Ashford were also affected.

At 8:45 GMT (9:45 BST) on Tuesday 8<sup>th</sup> September of this year, the market town Leighton Buzzard in Bedfordshire had been hit by a 3.3 magnitude earthquake, the tremor shook the area at a depth of 6 miles (10 kilometres), with an intensity of 3.5 magnitude, it is reported the epicentre was two miles northwest of the town. This earthquake was felt in Leighton Buzzard, also in Cardington, Dunstable and Woburn in Bedfordshire, Hemel Hempstead and Tring in Hertfordshire, and Aylesbury and Milton Keynes in Buckinghamshire.

Local eyewitness in Leighton Buzzard reported that there was pandemonium across the town centre, the manager of a shop said it was like there had been an explosion in their office, many people ran

out into the street and lots of alarms going off. One resident said everything was shaking and moving in the room simultaneously, with some pictures looking wonky on the wall and kitchen crockery rattling in the cupboards; another resident said it sounded like a van had driven into the house; one feared the mobile home had broken off its mooring.

On Sunday 13<sup>th</sup> September, British Geological Survey recorded a 2.1 magnitude earthquake at 23.20 GMT (00:20 BST Monday 14<sup>th</sup> September), the tremor was felt slower and less intense by residents of Leighton Buzzard. It is thought that either because all the stress in the rocks was not relieved or because the first earthquake caused a slight change to the stress regime in the epicentre location.

One earthquake expert commented "We've had two now that is one and the aftershock. We should be done now."

Then on Tuesday 22<sup>nd</sup> September, two further earthquakes occurred four hours apart in Leighton Buzzard, in what experts said could be a swarm of seismic activity. The British Geological Survey issued an alert after a 3.0 magnitude tremor shook the area at a depth of 6 miles (10 kilometres) at 08:30 GMT. Residents of Leighton Buzzard were in disbelief as they felt another quake at 12:40 GMT, with a magnitude of 2.1, from a depth of 4 miles (6.5 kilometres).

The Leighton Buzzard tremors were likely to be caused by the fracturing of solid rock in concealed fault lines at several hundred metres below the surface. The three subsequent earthquakes are likely to be the aftershocks of the 3.3 magnitude earthquake recorded on 8<sup>th</sup> September; a readjustment of the fault lines returning to rock stress stability.

It is not uncommon for earthquakes of magnitudes 3 to occur in clusters or swarms. The sequence of four earthquakes occurring within two weeks at Leighton Buzzard was like the Surrey Swarm from April 2018 to May 2019, when 34 earthquakes reaching magnitudes of 3.2 were recorded.

The previous earthquake occurring onshore Britain in this decade was a 3.1 magnitude earthquake in Stockton, County Durham on 23<sup>rd</sup> January 2020.

The largest onshore earthquake that occurred in Britain since instrumental measurements began was the Llŷn Peninsula Earthquake, which struck the Llŷn Peninsula in Gwynedd, north-west Wales on Thursday 19<sup>th</sup> July 1984 at 06:56 GMT; it was a 5.4 magnitude earthquake. The effects were felt throughout Wales, across western Great Britain and Ireland. In England, the biggest concentration of damage was in Liverpool, which is located some 65 miles northeast of the epicentre. This earthquake was followed by many aftershocks in the following months, the largest measuring 4.3 magnitude on the Richter scale; it was felt in Dublin.

As for Leighton Buzzard, although it is thought that the recent earthquake sequence has seemingly ended, it is possible the stresses remain in the rocks beneath. No earthquakes have been recorded in the Home Counties North Regional Group area in the 50 days to 17<sup>th</sup> December 2020. Further tremors could occur anywhere within the Home Counties North Regional Group area; whether it is going to be a minor or a significant earthquake, only time will tell.

The recent earthquake activities in the 21<sup>st</sup> century have opened a new door to study earthquakes in the Home Counties North area. I would be delighted to arrange a second Home Counties North Regional Group visit to the British Geological Survey at Keyworth in Nottinghamshire, when the pandemic ends, to see the earthquake records of the Home Counties North Regional Group area

(Northamptonshire, Bedfordshire, Buckinghamshire, Hertfordshire, Luton, Milton Keynes, Greater London north of River Thames, and western part of Essex), a good tour we can look forward to.

## **The Geological Society survey for fellowship categories, fee structure, and membership benefits –**

**Kate Puchcinska-Kwiatek Member Services Officer on behalf of Ricard Hughes Executive Secretary**

Dear All,

As you probably know we sent out information about ongoing Membership Categories and Benefits Review in Society's newsletter on Monday 30/11/2020.

We would like to encourage more of fellows, friends and geologist that are not currently involved with the Geological Society to fill out the survey.

I would be very grateful if you could include the survey in your Regional Group newsletter and share it on Social media.

Please see the note from Richard (sent in newsletter) and the link to the survey:

<https://www.surveymonkey.co.uk/r/CategoriesReview>



*serving science, profession & society*

### **FELLOWSHIP / Survey for fellowship categories, fee structure, and membership benefits**

Dear Fellows and friends,

The Society is undertaking an in-depth review of its current fellowship categories, fee structure, and membership benefits. Our current age-based structure is very complex compared to others, and we know it's not universally popular. We want to implement a simpler, more appealing structure that enables us to more successfully attract and retain members from all parts of our community. We're aiming for broad cost neutrality in any new structure so as not to adversely impact the Society's policy, outreach, education, communications and advocacy work.

Any new proposals will need the approval of the Society's Professional & Chartership and Finance & Planning Committees before being considered by our governing Council in April 2021. Under our bye-laws any proposals to change fees must also be approved at our Annual General Meeting, currently scheduled for June 2021. Any changes will therefore not come into effect until the 2022 renewal cycle which will start in the autumn of 2021.

We want to hear your views on the existing fellowship categories, fee structure, and membership benefits so that they can be factored into our thinking going forward. Fellow or non-Fellow, please share your views with us by completing this [short survey](#) no later than the end of December.

Thank you in advance.

Richard Hughes,  
Executive Secretary

[Fill out survey >>](#)

Thank you and best wishes,

**Kate Puchcinska-Kwiatek Member Services Officer**

### **THANK YOU and MERRY CHRISTMAS**

To all the committee members of the Home Counties North Regional Group, my profound thank you for all your contributions and close-knitted teamwork in serving our members throughout this unprecedented year; my grateful thank you to all the newsletter article contributors for kindly sharing your knowledge and experiences to support the production of the more regular Home Counties North Regional Group newsletters; to the members, thank you so much and appreciated all your continuous support in attending the Home Counties North Regional Group events; my deepest thank you to the behind-the-scenes helpers. I am deeply touched with all your generous and encouraging compliments that I shall always treasure with smiles.

Merry Christmas to you all and your families, let's welcome the new year 2021 with optimism and pursuit our hopes that would come true: good health, successes, and prosperity.

John Wong FGS Chair HCNRG

December 2020

