Newsletter No. 292
August 2025

Contents:

To find out more - read on!

Copy date for the next Newsletter is Wednesday 1 October

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For enquiries about field and geoconservation meetings please contact the Field Secretary.
Please notify Andy Harrison in advance if you will be attending these events.
To submit items for the Newsletter please contact the Newsletter Editor.
For all other business and enquiries please contact the Honorary Secretary.
For more information see our website: bcgs.info, YouTube, and Facebook.

Future Programme

Indoor meetings are now held in the Lamp Tavern, 116 High St, Dudley, DY1 1QT
7.30 for 8.00 o'clock start unless stated otherwise.
Visitors are welcome to attend BCGS events but there will be a charge of £1.00.

Saturday 30 August *(Field Meeting):* Smestow Valley Local Nature Reserve (SVLNR), Wolverhampton. Guided walk led by Smestow Valley Country Park Wardens. Meet at Smestow Valley Local Nature Reserve, Meadow View Terrace, Wolverhampton WV6 8NX (Grid ref: SO 891 999), at 9.45 for a 10.00 o'clock start. This morning field trip will involve a guided walk and a chance to get to know the staff and local friends group who run the nature reserve. This will be with a view to BCGS helping with future events and conservation works. Bring a packed lunch, wear walking shoes and appropriate outdoor clothing. We will aim to **finish around 1.00.**

Monday 22 September *(Indoor Meeting):* 'Geological perspectives on the 'world's largest' conventional explosion at Fauld Mine Staffordshire'. Speaker: Noel Worley. Noel was employed with British Gypsum, (subsidiary of Saint Gobain) holding various positions until he retired in 2012 from the position of Minerals & Estates Manager. He was Vice-President of the Minerals Group of the CBI and a Director of the Nottingham University Academy of Science and Technology. The talk will examine the enormous explosion which took place in 1944 at the RAF ordnance store in the Fauld mine, and the aftermath. *(For more biographical details and the full talk abstract, see the Programme of Events on the website.)*

Sunday 19 October *(Field Meeting):* 50th Anniversary Part 2: Permo-Triassic and the Ice Age in the Black Country. Led by Graham Worton and Andy Harrison. Meet on Darby's Hill Road at 9.45 for a 10.00 start. Park opposite Oakham Primary School in the lay-by on the Birmingham side of the hill (GR SO966892, postcode B69 1SQ). We start at Darby's Hill viewpoint. Then we move down to St Brades Close and the Blue Rock Quarry / Portway Hill site. From there we take in a site new to most people (Barnford Hill park) and the Pudding Rock. Then we head over to Wordsley Ridge / Brierley Hill Road to look at the red sandstone and pebble bed exposures there. Finish in Old Wharf Lane Stourbridge, where we can see a huge new exposure in the red sandstones and the terrace of the River Stour. Bring a packed lunch, wear walking shoes and appropriate outdoor clothing.

Monday 20 October *(Indoor Meeting):* 'What Lies Beneath? Discoveries from Deep-Sea Drilling at Santorini Volcano (IODP Expedition 398).' Speaker: Ralf Gertisser, Volcanologist / Igneous Petrologist, Keele University. Since the 1960s, much of our understanding of the Earth's ocean floor has come from systematic scientific ocean drilling, carried out through long-standing international initiatives - most recently the International Ocean Discovery Program (IODP) - using iconic research vessels such as the *Glomar Challenger* and, more recently, the *JOIDES Resolution*. This presentation will focus on IODP Expedition 398, offering an inside look at the shipboard scientific operations aboard the *JOIDES Resolution* and sharing key findings that shed new light on the fiery geological history of Santorini and its neighbouring volcanoes. *(For more biographical details and the full talk abstract, see the Programme of Events on the website.)*

Monday 17 November *(Indoor Meeting):* 'Medicine and Geology - an Exploration'. Speaker: Albert Benghiat. Albert trained in medicine at Trinity College Cambridge and the Middlesex Hospital London. After a series of junior doctor training posts around the country he became Consultant Oncologist at Derby and subsequently Leicester. In retirement he studied geology at Leicester University and for a time was Associate Lecturer in Geology at the University of Derby until his recent move to Shropshire. This talk will recount the historical contribution of medical practitioners to the science of geology and go on to explore methodological similarities between the practice of medicine and geology.

Monday 15 December *(Indoor Meeting, 7.00 for 7.30 start):* Members' Evening and Christmas Social. This is our annual chance for members to share their geological experiences in a sociable atmosphere with a Christmas buffet provided by the Society.

Other Societies and Events

Mid Wales Geology Club

Wednesday 20 August: 'The Geology of Islay and Jura'. Speaker: Dr Geoff Steel.

Wednesday 17 September: 'Introduction to Guernsey Geology'. Speaker: Dr Chris Simpson.

Further information: Web: http://midwalesgeology.org.uk lectures start at 7.15 and are a hybrid of in person meetings at Plas Dolerw, Newtown, SY16 2EH and via Zoom. Those wishing to join a meeting remotely should contact the secretary, Chris Simpson, at christopher_s@btinternet.com

Geologists' Association Annual Conference 2025
Keele University, Friday 3 - Sunday 5 October

The Geology and Natural Resources of North Staffordshire

Below is a summary of events. For further information and to register go to:
https://geologistsassociation.org.uk/conferences/

Friday 3rd October - 17.00 – 20.00:
Activites include: Keele Campus Geology Walk; Canapes and refreshments; Welcome speeches

Saturday 4th October, Chancellor's Building, Keele University, Room CBA0.061
8.30 - 13.00: Registration; Arrival refreshments and introduction; six talks with refreshment break to see posters and displays.
13.00 - 14.00: Lunch; posters and displays
14.00 - 17.15: Five talks with refreshment break to see posters and displays.
17.15 - 17.45 Posters & displays
19.00: Evening dinner, Keele Hall. BOOKING ESSENTIAL

Sunday 5th October 10.00 - 14.00 (approx)**: Field excursion options** (focusing on the geology of North Staffordshire). Charges apply. See GA website (link above) for details.
Apedale Mine Heritage Centre: 10.30 & 13.30
Ecton Mine & Apes Tor
Brown End Quarry & Frognall
Mow Cop & Biddulph Grange Garden

Geologists' Association Festival of Geology
Saturday 1 and Sunday 2 November

Saturday 1 November, 10.30 – 4.30: Burlington House, London W1J 0BG. Talks throughout the day, exhibits, Rockwatch activities for the younger generation.

Sunday 2 November: Geological walks in the London area.
There will be more details in our October Newsletter. Also see the GA website here:
https://geologistsassociation.org.uk/festival/

Warwickshire Geological Conservation Group

Tuesday 19 August from 10.00 to 4.30: Geological field trip to the north Malvern Hills, led by Adrian Wyatt.

Thursday 18 September from 7.30 to 9.00: 'Stonehenge'. Speaker: Peter Worsley.

For more information and booking visit: https://www.wgcg.co.uk/

Woolhope Naturalists' Field Club - Geology Section

Wednesday 10 September: Behind the scenes collection tour of palaeontology, led by Dr. Emma Nicholls, Oxford University Museum.

Tuesday 7 October: Geodiversity Day in the Gullet Quarry, Malvern Hills, led by Moira Jenkins.

Non-members are welcome and pay £2. More info. at: https://www.woolhopeclub.org.uk/meetings

Shropshire Geological Society

Wednesday 10 September: 'Use of oxygen isotopes in assessing past and future climate change'. Speaker: Dr Andrew Johnson (University of Derby).

Wednesday 8 October: 'Soft bodied sensations from the Hereford Lagerstatte; fleshing out Silurian marine life.' Speaker: Prof Derek Siveter (University of Oxford).

Meetings commence at 7.15 for 7.30. Lectures are now being held in hybrid form, in person at the Higher Education Centre, Shrewsbury College, as well as by Zoom. If you wish to attend please contact Albert Benghiat: 07710 421 581, email: SGS.chair@hotmail.com
Further information: https://shropshiregeology.org.uk/

Manchester Geological Association

Saturday 16 August: Field Excursion to Hulme Quarry. Park Hall Country Park, Triassic of north Staffordshire.

Saturday 13 September: Introduction to Geology for the Newly Interested Amateur.
This free event is aimed at those who are new to geology and not aimed specifically at MGA members – although they are more than welcome to attend and if they have family, friends or neighbours who might be interested, please let them know. The timetable for the day is:

10:30 to 12:00 – Introduction to geology
12:00 to 12:30 – Tea, coffee, biscuits
12:30 to 14:00 – An opportunity to look at a selection of geological specimens (rocks mineral and fossils) and maps, with Department and MGA members there to assist.

Registration for this event is essential.

Please contact us at info@manchestergeology.org.uk to book on to these events.

Abberley and Malvern Hills Geopark – Geofest 2025

The annual Geofest is running from 24 May to 31 August. More on the Geofest Calendar here.

For further information go to: http://geopark.org.uk/ or contact the BCGS Field Secretary, Andy Harrison (details on p.2).

Editorial

BCGS 50th Anniversary and 100th 'Schroderian' Newsletter

Although this issue is dominated by our 50th anniversary celebrations, your editorial team has something else to celebrate - our 100th edition of the BCGS Newsletter! We were rather touched to discover that Graham Hickman had noticed that this milestone was approaching, and even more so when he sent a revised version of his delightful 'Newsletter Chronostratigraphy'! It is on p18. The original one (where he coined the term 'Schroderian') appeared in the 200th edition, *(April 2010, p.5).*

Our first effort was No. 193 in February 2009. Following in the footsteps of Bill Groves, John and I took on the task with some trepidation – as geological amateurs we weren't sure whether we could step up to the mark, and we had another couple of years to go before retirement would give us more time. I had the English and writing skills and, although it is my name which appears as 'editor', John had the computer skills, and without John's techno-wizardry I would be lost! We are definitely a team. We didn't need to worry about our geological shortcomings. Over the last 16 years we've been supported by so many of you, with geological advice and proof reading, that it has been a pleasure and an honour to be entrusted with this important task. Thanks for all your encouragement!

This is certainly a 'bumper' issue with greetings from founder member Peter Oliver, detailed reports of the 50th anniversary indoor meeting and field trip, Graham's Chronostratigraphy, and Mike's Musing which neatly rounds off this anniversary issue with relative ages of numerous other societies. Enjoy!

And remember, the anniversary isn't over yet! The fabulous exhibition will remain at the Archives for several weeks, and don't miss the Anniversary Field Trip Part 2 on 19th October. ■

Julie Schroder

A 50th Anniversary greeting from BCGS founder member, Peter Oliver

Peter Oliver was one of those whose drive and energy led to the creation of BCGS in 1975. He later became one of the founding team who created the Herefordshire and Worcester Earth Heritage Trust which continues to make waves in geological conservation and outreach in those two counties. He is currently a member of the Abberley and Malvern Hills Geopark's Partnership Management team, leading on geological matters and on the very successful 3 month-long annual Geofest. We thank him for his memories and for giving us some insight into the background circumstances which led to the formation of the Society. Ed. ►

Dear BCGS

50 years - where and how did it all begin?

Photo from BCGS 40th Anniversary. Left to right: Alan Cutler, Peter Parkes and Peter Oliver

My involvement with our great organisation has been a wonderful experience and I still take an interest in current activities. I am especially impressed with the information that has been accumulated on the website. It is indeed a substantial archive of past events with some great photographs. These details tell the story of the formation of the Society and its work in site recording, geoconservation and education in the Earth sciences. The complete set of newsletters, from 1975 to the present, is not only a significant resource, it also tells the unfolding story of the Society and the contributions that so many members have made.

The Background

The story really begins in the years before 1975 in the extra-mural classes that I delivered for the University of Birmingham. In 1965 I had started my PhD research on the petrology of the Wenlock Limestone at Wren's Nest, in the Geology Department at Birmingham - quite a good incentive for starting adult education classes in Dudley. So it began when on 2nd October 1967 at the Museum and Art Gallery the first course got underway - 'The Fossils of Wrens Nest, Dudley - An Introduction to Palaeontology', 20 weekly meetings on Mondays at 7pm. I am not sure how much it cost to enrol but the following year my second course at Dudley Library, also 20 meetings, cost 32 shillings. The students at those first meetings became good friends and attended subsequent courses and many local field trips until 1974.

I don't have the class list for these meetings but the names of some of the students will be familiar to many of you - Alan Cutler, Peter Parkes, Dave Wraight, Eileen Bakewell, Terry Bond and Doug Bedson. This group of people and others in those early classes had their own particular associated interests - Peter with his wonderful collection of fossils from Wrens Nest and Alan with his interest in the old Dudley and Midland Geological Society. Indeed it was Alan's stories about the latter that inspired the group to start a new society - the Black Country Geological Society.

And so we began the process of sorting out all the things that have to be sorted when ventures like this begin - a constitution, officers, a meetings venue, lecture and field visits programme, finances etc.

BCGS is born!

In 1975 it all came together with the first meeting on 3rd July 1975 at Dudley Museum with 25 people attending. The meeting formally adopted the constitution and elected the officers of the executive committee with Alan as chairman. Three important events followed as a result of discussions at this inaugural meeting. Firstly a field meeting on 27th July - 'Introduction to Black Country Geology - Part1 - Cambrian to Middle Coal Measures' with Alan Cutler and Peter Oliver as leaders. We did not know how successful this field meeting would be but we gambled that it would be very well attended and so another field meeting was planned for 31st August - 'Geology of the Black Country Part 2 - Upper ►

Coal Measures to Triassic'. This second important event was followed by, thirdly, the inaugural lecture given by Professor Shotton. This was at Dudley Museum on 25th September and entitled 'The Ice Age in the Midlands'. That Fred Shotton was prepared to give up some of his time to deliver this lecture was confirmation that BCGS had indeed been recognised and had begun its long productive journey for what we now know to be at least the next 50 years.

The University of Birmingham's Extra-mural Department's commitment to adult education in Dudley and the surrounding areas and its support for science and in particular geology was a major factor in the birth of the Society. But just as important were the enthusiastic people attending those classes, people with great ideas and determination, for these were the ones that actually made it happen. Serendipity!

Kind regards to everyone, ■

Peter Oliver

BCGS 50th Anniversary Celebration day – Report

Welcome and Opening of the Exhibition by Graham Worton

BCGS members and friends gather

Graham started the day by welcoming everyone and declaring that the exhibition was open. It is housed in the foyer of the Archives and covers the history of each of the three incarnations of the Society and how they have been involved with the local area throughout their history. Along the back wall of the exhibition is a display case with some of the specimens which have been donated to the Society over the years. Graham thanked everyone present and acknowledged those who were unable to attend. He introduced the members of the committee and highlighted the importance of the anniversary and the opportunity it provides to celebrate the achievements of the Society.

Colin Prosser, Natural England

Innovation and influence - the role of the Black Country in Geoconservation by Colin Prosser (Natural England) and Jonathan Larwood (Natural England)

This talk was delivered jointly by Colin Prosser and Jonathan Larwood from Natural England. They gave us an outline of the geology around the Black Country and the important role that it played in the Industrial Revolution, one of the main reasons being that there is so much geological diversity for such a small area. The geological riches of the Black Country also contributed much to science and education from the mid-19th century, exemplified by the visits of the eminent geologist Sir Roderick Murchison, the creation of a museum for local finds, the formation of the Society and eventually becoming a UNESCO Geopark. ►

Jonathan Larwood, Natural England

The next part of the talk covered how the Black Country has played a leading role in geoconservation with several 'firsts' and innovations. The Wren's Nest played a major role in this when it became Britain's first designated National Nature Reserve for geology and the first geological trail was created. During the talk one of the slides showed some local geoconservation taking place and this led to a request at the end from long-term member Mike Williams to show that slide again. Mike had travelled from his current home in Melton Mowbray to be with us. He contributed a lot to the Society for many years, including the role of treasurer, and remembers many of those early field trips and geoconservation sessions. The slide in question showed Graham Worton and his wife Sarah, but Mike especially wanted to pay tribute to two former members, Alan Cutler and Alf Cole, who were on the photo but have now sadly passed away. Mike remembers their dedication and the tremendous contribution they both made to the Society in days gone by.

Tasty fossil biscuits!

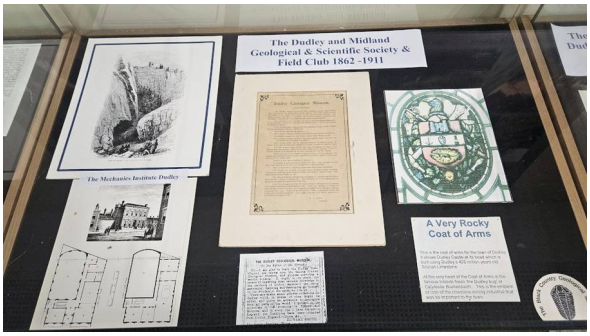
Refreshments with Cake and Biscuits

After the first talk, we had a refreshment break with some appropriately decorated cakes and biscuits, which were enjoyed by all. *(It has to be said at this point that the cakes and biscuits were the handiwork of Dakota and her sister, Aimee Johnson and we thank them both heartily for this very important contribution to the proceedings! See also front cover photo. Ed).*

The Black Country Geological Society and its key role in the development, celebration and protection of Geological Heritage in the Black Country - by Graham Worton (BCGS Chair, Dudley Keeper of Geology, Black Country Geopark Lead)

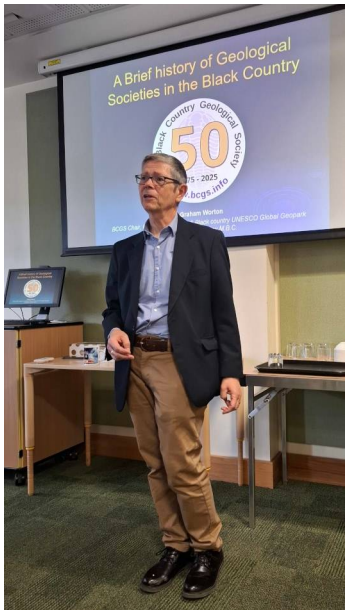
The BCGS 50th Anniversary Exhibition

Graham's talk looked at the many aspects of the activities BCGS has taken part in over the last 50 years, plus a look at the history of the two societies that came before. He told us how the first society, 'The Dudley and Midland Geological Society' came to be (in 1842), largely due to the influence of Sir Robert Murchison, and how Dudley played an important role in the naming of the Silurian geological period. This was partly because many Silurian fossil species were first identified around Dudley, and are unique to this area. Many important people in both geological and non-geological spheres were part of the first society, including Prime minister Sir Robert Peel, Lord Ward (Earl of Dudley), members of the clergy, and Professors Buckland and Sedgwick. Murchison encouraged local people to realise that they needed to store and look after their fossils. This led to the creation of the first museum in Dudley, which is believed to have been housed in the Court House pub in the town centre. ►



Exhibits from the 1862 society

The first society disbanded after only a few years, but the second society was formed in 1862 as the 'Dudley and Midland Geological and Scientific Society and Field club', and appears to have thrived until its decline in the early 20th century. Many of its members were closely linked with the mining and extraction industries which were falling into decline by then.



Graham Worton, BCGS Chair

Graham also talked about the museum and its history, and how the collection 'disappeared' between 1914 and 1948. When our society was inaugurated in 1975, the collection was re-discovered and BCGS member Graham Hickman (then a young student) played a big part in rescuing and re-cataloguing the geological specimens. Graham Worton talked about the achievements of the Society over the last 50 years, from bringing local geology to the forefront of public awareness with the 'Rock and Fossil Festivals' to supporting local research, being massive contributors to geoconservation in the Black Country and to the present day where BCGS is a key partner with the Black Country UNESCO Global Geopark.

You can find more information about the history of the societies in an article by Alan Cutler on the BCGS website here.

'Memory, Rumour and the Murder Mine, Dudley 1961 and what geological information might lurk within an archive' - by Paul Ford

Paul Ford, archivist at Dudley Archives

After lunch the Dudley Museum and Archives archivist, Paul Ford, told us the intriguing story about a body that was found in a limestone mine off Castle Mill Basin in the 1960s. He talked about how a missing bit of information is sometimes the bit that speaks the loudest, and that verbal history and written history can be very different. For instance, the colloquial name 'murder mine' for the place where the body was found, was never written down anywhere but has become associated with that mine. Also, the year the body was found is in some doubt: the story goes that it was found in the 1950s but according to police and news reports, it wasn't found until 1961, a good 10 years afterwards.

You can read more about this story here.

Following Paul's talk, Graham rounded off the day's proceedings with thanks to everyone, and then it was time to cut the cakes and celebrate 50 years of BCGS with a sparkling toast! ■

Dakota Johnson


Dakota cutting the first of two big cakes!

Field Meeting Report

Sunday 6 July: Black Country Geological Society – 50th Anniversary Field Trip – An Introduction to the Geology of the Black Country - Part I, (Revisited).

Introduction

In 1975, members from the newly inaugurated Black Country Geological Society (BCGS) undertook a two-part field trip entitled 'An Introduction to Black Country Geology Part I and Part 2'. Both field trips were led by Alan Cutler and Dr. Peter Oliver with Part I occurring on Sunday 27 July 1975 and Part II taking place on Sunday 31 August 1975.

Part I covered the Cambrian to Middle Coal Measures and included an overview of Black Country Geology from Walton Hill, near Clent, a look at the 'Cambrian' / Silurian (Upper Llandovery) rocks at Rubery Cutting, the Silurian Wenlock Series at Castle Mill Basin and finished with a look at the Silurian / Carboniferous relationship at Saltwells Nature Reserve. The later **Part 2** trip looked at the Upper Coal Measures to the Triassic.

To celebrate the BCGS 40th anniversary, members might remember, we tried to follow in the footsteps of the original 1975 event. However, some substitutions had to be made due to locations either no longer existing or being inaccessible. For similar reasons this time around, we could not follow precisely in the footsteps of those from 1975.

As before, time constraints and the distances involved, mean that the 50th anniversary field trip has been split into two parts. The first part coincided with our 50th anniversary weekend celebrations and the second part will be undertaken in October 2025. For Part I, we started at the Lickey Hills Visitor Centre and visited Warren Lane quarry before moving onto the Rubery Cutting. Our next stop was the Wren's Nest National Nature Reserve (NNR), which was a substitution for Castle Mill Basin, and then on to Saltwells NNR for lunch and a walk around the reserve. We had planned to finish the day at Blue Rock Quarry, Portway Hill, but unfortunately time didn't allow this.

Malcolm points out the 'cruziana' trace fossil in the Ordovician Lickey Quartzite, Warren Lane Quarry

1. Lickey Hills - Warren Lane Quarry

For the Lickey Hills and Rubery Cutting, we were led by Malcolm Coghill from the Lickey Hills Geo-Champions. We met Malcolm outside the Lickey Hills Visitor Centre for 10.00, where he provided some health and safety information before giving an overview of the Lickey Hills.

Malcolm explained how, topographically, the Lickey Hills form a roughly north to south trending ridge of high ground that represents a fault-bounded horst formed from Lickey Quartzite. Research undertaken since 1975 now places the Lickey Quartzite strongly within the Ordovician as opposed to the Cambrian as previously believed. Bounding the ridge to the east are Triassic rocks belonging to the Chester Pebble Beds, (formerly the Kidderminster Formation). To the west are Upper Carboniferous sandstone strata belonging to the Alveley Formation, (formerly the Keele Beds), with Clent Breccia beyond and further west. At the southern end of the ridge are tuffaceous rocks belonging to the Barnt Green Volcanics. ►

Stratigraphically, the Lickey Quartzite and Barnt Green Volcanics form the basement rocks over which the Black Country stratigraphy sits. Deposited within a relatively shallow sea around 488Ma (million years ago), the Lickey Quartzite formed as a relatively pure sand off the northern shores of Gondwanaland and close to the south pole. Steadily buried, it lithified to sandstone and later underwent low grade metamorphism (at around 1 km depth) to become quartzite.

In Warren Lane Quarry, we saw how, today, the quartzite is very fractured and broken, heavily faulted and contains bentonite layers associated with volcanic eruptions during the time of deposition. Although strong, the Lickey Quartzite's heavily fractured nature meant that it could only be worked for roadstone. Preserved ripples, trilobite tracks (cruziana) and worm burrows within the Lickey Quartzite, also hint at its shallow marine origins.

The Ordovician / Silurian unconformity at the Rubery Cutting

2. Rubery Cutting

Heading to the Rubery Cutting, we saw the next part of the story. Here, overlying the Lickey Quartzite is the pinkish Rubery Sandstone from the early Silurian, Llandovery Epoch, around 443Ma to 433Ma. The Rubery Sandstone rests unconformably over the Lickey Quartzite. Rounded gravel to cobble-size clasts and channels cut into the underlying quartzite define a clear, uneven erosion surface and landscape onto which the Rubery Sandstone was deposited. The sequence represents denudation and channels cutting into an earlier uplifted Lickey Quartzite landscape before sea levels slowly rose, due to melting ice sheets, to deposit the Rubery Sandstone.

Cutting vertically through the Lickey Quartzite and the Rubery Sandstone are, what have historically been referred to as Neptunian dykes. This is a bit of a misnomer, suggesting that the dykes were intruded from below. However, closer inspection has revealed that they are large cracks or fissures infilled with later windblown sediments, Permo-Triassic in origin, the grains of which are clearly frosted.

3. Wren's Nest National Nature Reserve

Leaving Rubery at around 12.00, we drove to Wren's Nest and congregated outside the Wardens' base on Fossil View to meet our BCGS Chair, Graham, who would lead us for the remainder of the day.

Graham started with some health and safety information before discussing some plate tectonic principles and the influence this has had on the local landscape. He ran through the significance of the Lickey Quartzite and Rubery Sandstone sequence, and told us and how this relates to the Wren's Nest. Through the early Silurian, sea levels continued to rise due to melting ice sheets until, in the middle Silurian (the Wenlock - 424Ma to 430Ma), the environment had changed to a shallow marine shelf with tropical lagoons. Here carbonates formed as shelly creatures lived, died and their skeletal remains accumulated on the seabed.

From the Warden's base, we walked to the Quarry View to look south through Marsh's Quarry, before continuing on to the Upper Quarried Member trench on the Reserve's western edge. Our route then followed the trench south, passing the 'Bedding Plane', before ending up at the Ripple Beds and returning via the Marsh's Quarry patch reefs. ►

3a. Quarry View

Wren's Nest, Quarry View

Located towards the Reserve's northern end, Quarry View represents the warden's vision of opening up the Lower and Upper Quarried Member limestone trenches to form rides along which wildlife can travel. Quarry View provides views through the Lower Quarried Member trench towards Marsh's Quarry and the outcrops containing the Ripple Beds. Here Graham provided an overview of the Lower Quarried Member, its formation, and what the fossils within tell us about Middle Silurian ocean chemistry, temperature, health and biology at the time. Chronologically, he explained events that led to the formation of the landscape before us and the important relationships between people, science and nature that continue to this day, including:

• Limestone from Wren's Nest and Castle Hill has been used since Medieval times for building structures such as Dudley Castle and the Priory. Crushed and cooked limestone, to make slaked lime, was used agriculturally to 'sweeten' the soil.

• Around 1598-99, Queen Elizabeth 1 banned the use of timber for charcoal manufacture to fuel fires and furnaces, since the timber was needed for ship building. This forced ironmasters to look for an alternative fuel and whilst coal was abundant, it was not suitable due to its impurities. In 1602, Queen Elizabeth 1 established the Royal Society to find a solution to this problem.

• In 1619, the Earl of Dudley recalled his son, Dud Dudley from Oxford to find a way of using coal as a fuel. It wasn't long before (by luck or good judgement) a solution was found in the form of limestone. When added to the smelting mix, limestone (calcium carbonate) effectively acts as a flux, reacting with silica impurities in the ironstone and sulphur in the coal to produce a scum that floats on the surface and can be scraped off, as slag or clinker. This leaves behind good quality iron and Dud Dudley took some to London to get it assayed. In 1665, he published Metallum Martis in which he described this process. His book also included an early and simple geological map showing the mineral resources around Castle Hill. After 1665, mining at Wrens' Nest really took off with the limestone from the Lower and Upper Quarried Members being used for iron smelting. Through their mining operations, the miners, the mine agents and landowners began building their own private fossil collections.

• Between 1836 and 1839, Sir Roderick Impey Murchison visited the Dudley area whilst undertaking a systematic study of the rocks in the Midlands and Welsh borders. His research, with help from the miners, led him to relate particular fossils to specific layers and picture how, over time, environmental conditions varied and organisms evolved. In 1839, he published 'The Silurian System' and invited the British Association to Castle Hill and Dudley to view the collections. The diversity and abundance of specimens put Dudley on the map as the most important place for understanding the marine Silurian.

• In 1842, with encouragement from Murchison, a permanent collection, 'The Dudley Collection' was established and 'The Dudley and Midland Geological Society' was inaugurated. In 1849, following revisions to his book, Murchison returned to speak at Dark Cavern on Castle Hill. Around 15,000 locals turned up to hear him speak and afterwards he was crowned the 'King of Siluria'. Records from 1850 show that Dudley had three fossil shops and 90,000 tonnes of limestone from the Wren's Nest West Mine were being extracted annually. ►

Through their limestone workings, the miners removed the entire side of Wren's Nest hill. The resultant excavation was over a mile in length and extended from 30 to 40 feet in the air to over 100m below ground. Underground, they could not extract the whole limestone seam and had to leave behind pillars whilst creating the vast holes, that today have been largely infilled.

Upper Quarried Limestone Trench, Bedding Plane

3b. Upper Quarried Member trench - Bedding Plane

Following the western side of Wren's Nest Hill along the Upper Quarried Member trench, we came to the 'Bedding Plane', a limestone layer within the Nodular Member covered with ridges and depressions representing bioturbation from creatures burrowing through the sediment and churning it up. Around eight different species have been recorded and together form a complex ecosystem. Unfortunately, we may never know what these organisms were. The Bedding Plane's inclined nature hints at the plate tectonic activity that folded Wren's Nest Hill into one of three periclines, (isolated folds); the others are Castle Hill and Hurst Hill. Folding caused tension cracks to open up in the brittle rock that runs parallel with the axis. Later on, when Wren's Nest was buried at depth, percolating carbonate-rich groundwater infilled these cracks with calcite.

3c. The Ripple Beds

Leaving the Bedding Plane, we continued to the Ripple Beds that show different layers, like the leaves of a book, with rippled and bioturbated surfaces. These layers have many stories to tell, including:

• Information about sea water column depths; the energy from tidal and storm influences and fluctuations in the depth of the wave base; what the ripple symmetry tells us about the waves that formed them; the time period over which they formed and the current strength; how corals indicate water depth due to their dependence on sunlight and how this relates to the Principle of Uniformitarianism.

Wren's Nest Ripple Beds

• How experiments, using lasers from the 1969 moon landings, show that 428Ma the moon was much closer to the earth and is drifting away by 4 to 7cm annually. This raises questions about the implications for gravitational effects and tides during the Mid-Silurian. The layers in the Ripple Beds can also show how astronomical observations of the sun show that its luminosity is increasing over time, indicating that 428Ma corals may have survived in a deeper water column with less sunlight than modern corals. Analysing rugose coral growth rings tells us about differences in the seasons 428Ma, and gives the coral's age. Coral growth rings show that 428Ma there were 400 days in a year. This may have reduced through time due to the Earth losing angular moment as continental masses have shifted about our planet due plate tectonics. ►

• How oxygen (O^{16} / O^{18}) ratios tell us that average sea temperatures were around 10°C warmer 428Ma. This has implications for melting ice sheets and increasing water column depths that coincide with younger rocks lying above the Wenlock Series.

The youngest rocks at Wren's Nest are located on its outer fringes at locations such as the Snake Pit. Fine-grained and greenish-brown in colour, these mudstone rocks belong to the Lower Elton Formation, and mark the beginning of the Middle Silurian Ludlow Series, 411Ma to 424Ma. These rocks show that environmental conditions changed abruptly after the Wenlock Series, to deeper and quieter oceanic conditions as the ice sheets melted. This favoured the deposition of silts and muds.

3d. Marsh's Quarry

From the Ripple Beds, we walked back along the Upper Quarried Member trench to Marsh's Quarry and the main patch reef that dominates this location. This presented an opportunity to do some fossil hunting and admire the diversity of species that Wren's Nest has to offer.

According to Graham, over 600 big fossil species have been found at Wren's Nest and Castle Hill, of which around 158 are new to science and 63 are endemic and found nowhere else. The fossils include around 250 types of brachiopod and bivalves, over 70 different corals, over 30 bryozoan species, over 57 trilobite species and crinoids. There are also 'problematica', those fossils that have no definite identity and include *Tentaculites* and *Serpulites*. Finishing in Marsh's Quarry at 1.30, we returned to the cars and headed off to the Saltwells Inn for lunch.

4 Saltwells National Nature Reserve

After lunch, our visit to Saltwells NNR included following the 'Tub Line' mineral railway route to Doulton's Clay pit, then continuing along this route, ending at Dudley No.2 Canal and Brewin's Cutting.

4a. Doulton's Clay Pit

At Doulton's Clay Pit, Graham explained the role the Saltwells rocks played in the next part of the Black Country's evolution and their important mineral wealth.

Saltwells National Nature Reserve, Doulton's Clay Pit viewing and information point

Within them, the Saltwells rocks contain a time gap at the end of the Silurian Period that represents the time of the Caledonian Orogeny when Avalonia collided with Laurentia and the Iapetus Ocean closed. This resulted in a new continent - the 'Old Red Sandstone Continent', which lay just south of the equator and steadily moved northwards. The climate would have been hot with prevailing rainfall falling on one side of the Caledonian mountain range and desert on the other. Throughout the Devonian Period the Old Red Sandstone Continent was eroded and rocks from this period are missing from the Black Country stratigraphy. The result is a major unconformity between the Silurian rocks and the next layers in the sequence that belong to the Carboniferous Lower Pennine Coal Measures. ►

Overlooking Doulton's Clay Pit, Graham explained how the Coal Measures strata formed when tectonic forces shifted from being compressional to extensional after the Old Red Sandstone Continent had eroded flat during the Carboniferous. This resulted in the opening of the North Pennine Basin. To the north lay Laurentia and to the south, a landmass called St. George's Land or the Wales-Brabant Massif. The North Pennine Basin stretched from Ireland in the west, to the Russian Ural Mountains in the east. Looking into Doulton's Clay Pit, we were shown the first sequential set of Black Country Carboniferous Coal Measures rocks. These sequences, or cyclothems, generally comprised sandstone at the base overlain with grey mudstone, red ironstone layers, a seatearth layer and finally coal at the top before progressing into sandstone again and the next cyclothem.

Working his way up the sequence Graham explained how each layer formed, and what this tells us about the environment and each layer's economic importance: the **sandstones** formed from channels moving across low-lying floodplains; the sticky **grey mudstones**, or fireclays and **seatearths**, formed in flooded, low energy swamps and get their name from properties that made them ideal for using in hot ovens to make sewerage pipes; **ironstone** formed from the chemical precipitation of iron around an organic nucleus and provided an iron ore source for the smelters; **coal**, used to fuel the machinery of the Industrial Revolution, was formed from dead plant material accumulating within anoxic swamps. The thickest coal seam in the Black Country was the Staffordshire Thick Coal, at between 30 and 40 feet thick. This would have sat at the top of the exposure we were looking at but has long been worked and removed.

These resources were so abundant and easy to reach, it made the Black Country an ideal location for the start of the Industrial Revolution. Records indicate that in 1665, there were around 10,000 ironworks within a 10 mile radius across the Black Country and in 1850, over 50 square miles, there were around 1,500 collieries. The resulting waste, as spoil heaps and disused, poorly infilled collieries were often left to burn. This, in combination with the furnaces, chimneys and other heavy industry meant that the Black Country was often described as 'black by day and red by night'.

The forests and the plants growing in the area tell us a lot about the climate at the time. Tree ferns (*Lepidodendron*), horsetails and 'trees' growing up to many hundreds of feet, formed vast rain forests that reduced carbon dioxide levels and increased oxygen levels. This effectively caused global cooling, leading to a south polar ice cap forming, and meant that forest fires were common from lightning strikes. High oxygen concentrations allowed invertebrate life in the forests to grow big. An example of this is *Meganeura*, the giant Carboniferous dragonfly with a wingspan of nearly six feet. However, there are questions that still remain unanswered. For example, no evidence has been found for what was feeding on the leaves of the plants, or if anything did.

4b. Tub Line Mineral Railway

Continuing along the Tub Line, we stopped to see how the waste from Doulton's clay pit had been dumped on the hillside forming the edge to the Black Brook Valley. This has changed the local morphology and appears to have rerouted the brook itself.

The Tub Line cutting, Silurian Ludlow Shales and Bone Bed

Our next stop was the Tub Line Cutting where we picked up the Silurian story of the Ludlow Shales that were briefly mentioned at Wren's Nest. Unlike Wren's Nest, the shales exposed here are muddier and ►

represent a slightly deeper marine environment towards the end of the Ludlow Series. At the top of the exposure, Graham pointed out the Ludlow Bone Bed which contains many early fish and deep marine invertebrate fossils. This bed marks the transition into the final (Pridoli) Series marking the Upper Silurian, between 408Ma and 411Ma.

In order to see the next part of the sequence, we continued along the Tub Line and crossed over Highbridge Road. The next exposures we saw were sandstone strata belonging to the Downton Castle Sandstone Formation, known locally as the Gornal Grit. Sitting stratigraphically above the Ludlow Bone bed, this exposure tells us that the landscape was being uplifted as the Iapetus Ocean was closing, leading to the Caledonian Orogeny and the formation of the Old Red Sandstone Continent. The exposure represents rivers flowing to the sea front and out into a big estuary or delta, not unlike the Mississippi Delta today.

Downton Castle Formation exposure along the Tub Line (en route to Dudley No.2 Canal)

Continuing along the Tub Line towards the Dudley No.2 Canal and basin, we saw further Downton Castle Sandstone exposures that showed a gradual reduction in water depth as the land continued to be lifted up. These units contain *Lingula* brachiopod fossils and worm burrows which suggest a marine setting with large ripples. This indicates fast fluvial deposition from a fresh water source. Together these factors suggest a brackish estuarine environment with rivers feeding into it as the land continued to rise.

4c. Brewin's Cutting

Brewin's Cutting,
Silurian / Carboniferous 'Disconformity'

Continuing past the Canal Basin to the Dudley No.2 Canal we walked along to Brewin's Cutting. Here, at the exposure base, we saw the rock layers which represent the final stages of the Silurian seen in the Black Country. Reddish sandy beds indicate exposure to the air, as finally the land was being pushed up above sea level. After this there is a time gap representing nearly 100 million years of missing geological history when the Black Country formed part of the Old Red Sandstone Continent through the Devonian Period and into the Early Carboniferous. As the beds above and below the time gap are parallel, this is a type of unconformity known as a 'disconformity'.

Defining the location of the disconformity is an uneven surface with a thin pebbly layer representing high energy fluvial channels cutting into the earlier Late Silurian landscape. Above the disconformity, grey mudstones containing plant debris and trunks represent Middle Carboniferous Coal Measures strata that were deposited on the northern fringes of the North Pennine Basin. From Doulton's Clay Pit to the Brewin's Cutting, we were shown that the Silurian and Carboniferous beds all follow nearly the same dip angle and direction. This suggests that the earlier Silurian landscape was uplifted, eroded but not tilted or buckled prior to the later Carboniferous beds being deposited. ►

4d. The Canal Basin and Dolerite (microgabbro) outcrop

From Brewin's Cutting we walked back to the Canal Basin. Here Graham explained how Doulton's Clay Pit, the Tub Line mineral railway, the Canal Basin, Dudley No.2 Canal and Brewin's Cutting all relate to each other. He told us how coal, clay and ironstone were taken from the clay pit to be distributed around the Black Country via the canal network and how Brewin's Cutting (originally a tunnel), was constructed, and the fears of Irish navvies upon coming across a mass cholera grave.

At this stop Graham introduced the final part of the Black Country's Palaeozoic story. The Late Carboniferous saw the beginnings of another continental collision event called the Hercynian, or Variscan Orogeny, as Gondwanaland moved northwards to eventually collide with Laurentia. The Wales-Brabant Massive and North Pennine Basin were squashed in between with the tropical coal-forming swamps being replaced with low-lying fluvial floodplains as the land was uplifted. The collision folded, faulted and tilted the Silurian and Carboniferous rocks and at Saltwells NNR, we see this in the form of the Netherton Anticline that forms the Black Brook Valley. The Black Brook itself flows along a fault running through the middle of the anticline.

A dolerite (or microgabbro) outcrop adjacent to the Canal Basin was our final stop. This represents crustal melting and intrusion of molten rock into the Silurian and Carboniferous rocks during the Variscan Orogeny, around 317Ma. The dolerite forms a sheet crossing the Dudley No.2 Canal and runs the length of the valley. The Tub Line mineral railway was constructed along this sheet, using it as a foundation, and it influenced the Brewin's tunnel being constructed before the cutting.

Dolerite (microgabbro) intrusion exposure near the Canal Basin

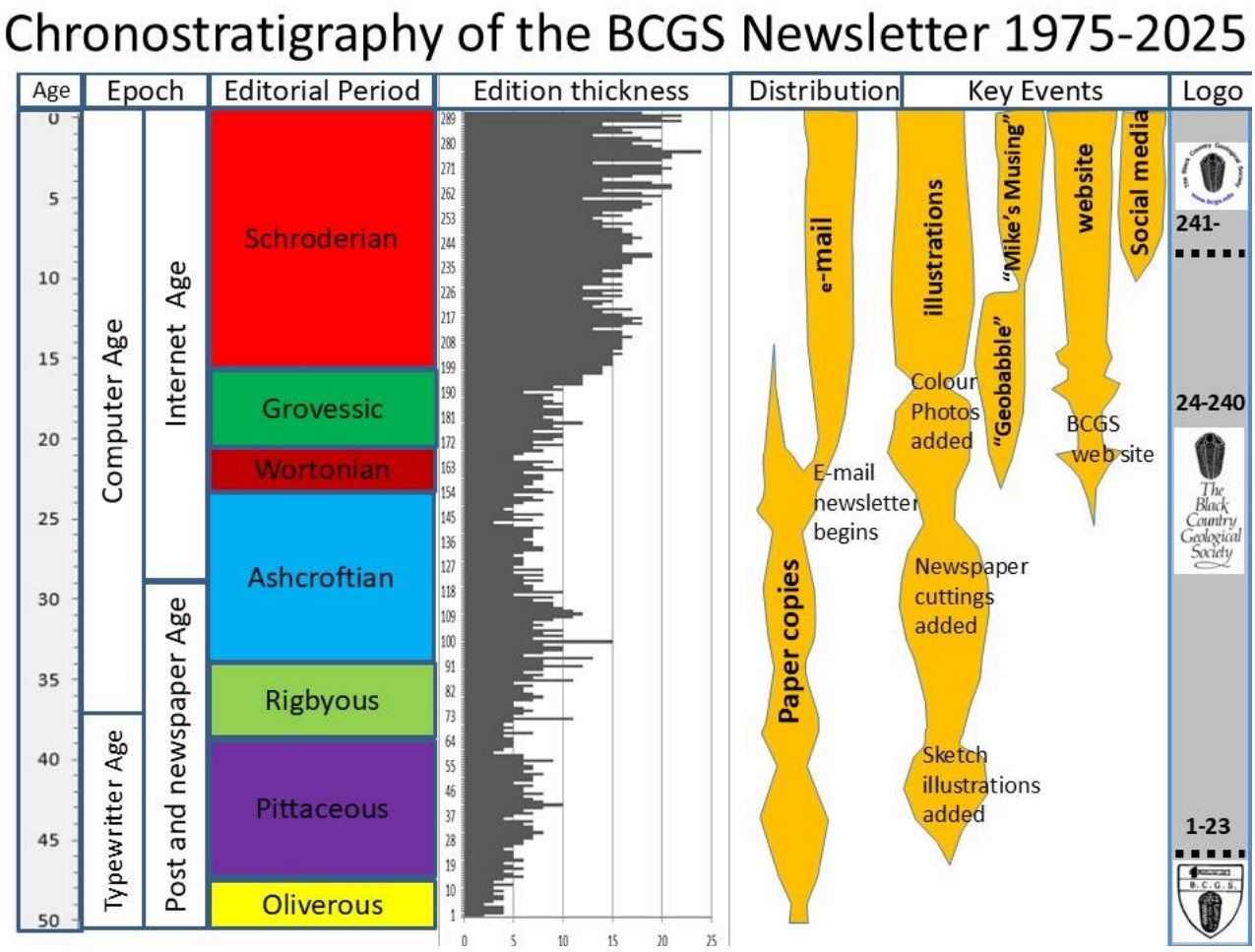
With time running out, it was decided to leave out Portway Hill, Rowley from this field trip and use it as the starting point for Part II of the 50th Anniversary field meetings. From the Canal Basin, we followed the Tub Line back to the main Saltwells car park and wrapped up Part I around 5.00.

I would like to thank Malcolm and Graham for their time and for what was a very enjoyable event where those taking part learnt a lot. We look forward to seeing members for Part II in October when we'll explore the Permo-Triassic and Ice Age story of the Black Country. ■

Andy Harrison

BCGS Newsletter Chronostratigraphy Updated!

Julie and John Schroder need to be congratulated on the production of their 100th BCGS Newsletter, No. 292. This is quite an achievement and shows the dedication and hard work that they have given to the BCGS since taking on this role sixteen years ago! It seems appropriate to produce an updated version of the 'BCGS Newsletter Chronostratigraphy' *('BCGS Newsletter Chronostratigraphy', Newsletter No. 200, April 2010, p5.)* to celebrate the long and prosperous Schroderian Editorial Period. ►



There are many parallels between the geological deposition of sedimentary rocks - layer by layer - and the production of the newsletters - page by page. Just as geological periods differ from one another creating the environment for different types of rocks to be deposited, so do the editorial periods with each new editor bringing something new, changing the style and evolving the newsletter.

The chart tracks the evolution of the newsletter from the typewriter age into the computer age. The thickness of each edition waxes and wanes depending on the availability of suitable news and material. Since the start of the Schroderian Editorial Period we have seen the edition thickness expand rapidly as the distribution of the newsletter has become entirely by email and the constraints of printing and postage have ended.

Key events are recorded in the newsletter deposit; early editions contained no illustrations, then sketches were added, followed some years later by colour photographs. Evolutionary trends are seen with the Bill Groves regular column called 'Geobabble' evolving into Mike Allen's regular column called 'Mike's Musings'. The website has become well established as a place of reference and with a photo archive being added in recent years. More recently still, the society started a 'social media' presence. Index or marker fossils are important in the geological record for identifying specific intervals in geological time; for the BCGS newsletters this can be extended to the logo used. Three different logos have been used in the last 50 years. These are illustrated on the right of the chart, if you find a newsletter with the hammer and the trilobite you can be sure this is from the Oliverous or early Pittaceous! ►

Past editors have included: Peter Oliver (1-15), Sheila Pitts (16-64), Andrew Rigby (65-87), Kate Ashcroft (88-147), Sarah & Graham Worton (148-162), Bill Groves (163-192) and our current editor Julie Schroder (193-292+). Their dedication to produce 6 editions per year has been outstanding and a key communication tool to keep the BCGS members well connected since 1975. Congratulations on reaching this milestone. ■

Graham Hickman

Mike's Musings No. 58

A surfeit of Geological Societies?

2025 is a special year for the ***Black Country Geological Society***. 50 years and still going strong, it shares this anniversary with, as far as I can establish, only one other similar organisation, the **Hertfordshire *Natural History Society and Field Club*** (which in 2003 spawned a more specific body, the ***Hertfordshire Geological Society***, a history not unlike BCGS in its antecedents.

Plaque noting the inauguration of the Geological Society of London

This bald opening statement begs many questions about the long history of geological interest groups in Britain since the very first such body in the world was inaugurated in 1807. That, of course, was 'our own' ***Geological Society of London***, which really began life as a 'gentleman's talking shop' for a fairly elite group of privileged enthusiasts (albeit a most learned lot!), in a world very different from the one we inhabit today.

In that seemingly far distant, pre-Victorian, world (distant in human lifespans, but certainly not in terms of geological 'deep time'), human understanding was beginning to see the world in more scientific ways, and higher levels of education were slowly emerging on more democratic principles, in some parts of the world at least. In consequence of this, learned societies began to appear, appealing to a broad church of 'thinking people' who had the leisure time, or the will, to participate in such activities.

You might reasonably imagine that such bodies would spring up in the large cities, particularly where civic aspiration might run high, with the added kudos of outdoing one's neighbour in attracting the attention of the leading scientific minds of the age. But no; in fact the earliest scientific body with geology more specifically in mind is the ***Kowethas Riel Dororiethel Kernow*** (better known to most as the ***Royal Geological Society of Cornwall***), established in 1814, and claiming to have a longer run of publication than even that of London. Noteworthy in including 'geology' within their (familiar) title, and Penzance based, (hardly, with apologies, the centre of civilisation), and yet there they are, clearly ahead of the times, no doubt inspired by a long and economically significant history of mining in the county. ►

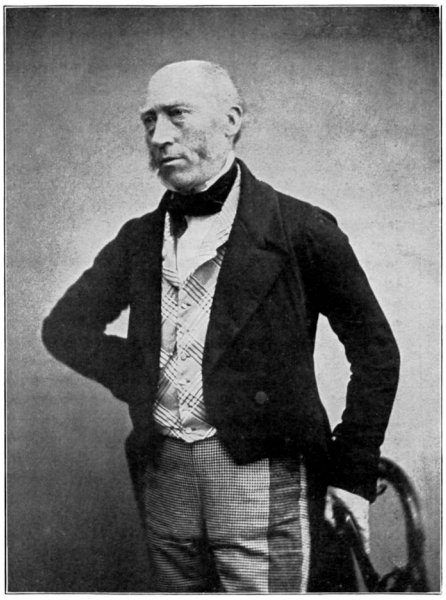
Plaque commemorating Charles W. Peach, placed by the Royal Cornwall Geological Society

Adam Sedgwick (1785-1873)

Meanwhile, the appearance of other such bodies was gradual; in most cases 'geology' was not part of their specific identity. Instead we have a flowering of 'Philosophical', plus or minus 'Literary' Societies, as well as 'Natural History', 'Naturalist', 'Antiquarian', 'Archaeological' or just plain 'Scientific' Societies (in a variety of combinations) and 'Field Clubs', as illustrated by the following slightly selective list:

Cambridge Philosophical Society (1819)
with Adam Sedgwick and Darwin's mentor, John Henslow, as two of three founding members.

Yorkshire Philosophical Society (YPS) (1822)
with William Smith's nephew, John Phillips, as an early 'Secretary & Keeper of the Yorkshire Museum' - strongly 'York-centric' to this day. An independent **Yorkshire Geological Society (YGS)** was formed in 1837. *(See more details in the main text.)*



John Phillips (1800 - 1874)

Bath Royal Literary & Scientific Institution (1824)
another body with 'royal' patronage (William IV 1830; Victoria 1837). Bath was then considered to be the 'Home of Geology'... perhaps influenced by William Smith?

Royal Geological Society of Ireland (1831)
breaking the 'rural' mould - in Dublin's 'fair city'.

Edinburgh Geological Society (1834)
likewise fairly and squarely city-based... inaugural meeting on 4th December in Robertson's Tavern (under discussion: 'Salisbury Crags: Neptunist or Vulcanist origins'?).

Leicester Literary & Philosophical Society (1835)
the geological fraternity had to wait until 1849 for their own 'Section C - Geology' to be established.

Dudley & Midland Geological Society (1842)
variously adding *Scientific Society* and *Field Club* to its name 'along the way'... also publishing either 'Proceedings' or 'Transactions'. BCGS members might just be familiar with this body (!), from which the BCGS finally emerged after a long and most confusing history! *(See the Society website for more details.)*

Dorset Natural History & Archaeological Society (1845)
established in tandem with Dorset Museum & Art Gallery.

Cotteswold Naturalists' Field Club (1846)
just 7 gentlemen attending at the Black Horse Inn Birdlip, with an 'ample breakfast' (that's how to do it!) before their first field visit. ►

Somerset Archaeology & Natural History Society (1849)

Woolhope Naturalists' Field Club (1851)
did their inspiration come from their 'Cotteswold' neighbours?

Geological Society of Glasgow (1858)
I'm indebted to their publication on 'Geological Howlers' for some of my 'Musings'!

Dumfries & Galloway Natural History & Antiquarian Society (1862)
a splendid museum / camera obscura in Dumfries prompted my recent piece on 'Sphaeroidal Objects'!

Croydon Natural History & Scientific Society (1902)
emerged from a Croydon Microscopical Club (1870).

The website of the ***Hampshire Field Club & Archaeological Society (1885)*** makes an interesting observation that 'Field Clubs' were set up especially to promote outdoor activities whilst 'Societies' were established as 'learned bodies' offering indoor lectures and perhaps directed more towards academically minded audiences, albeit with outdoor activities usually (or universally?) included.

It won't escape *BCGS* readers cognisant of their own society's heritage, that many specifically 'Geological Societies' often arose from these earlier 'broader church' bodies. Another clear example comes from Bath, where the above mentioned ***Royal Literary and Scientific Institution (1824)***, itself derived from the ***Bath Philosophical Society (1779-1819)***, and eventually gave rise to the establishment of an independent ***Bath Geological Society (1970)*** after an article in the Bath Chronicle in 1967 asked the question "do we really want to keep these fossils?" (the answer obviously being "Yes!").

Another interesting 'family tree' of societies is that from Cambridge where the early *Philosophical Society (1819 - see above)* appears to have been independent of the *Cambridge Entomological Society (1857)*, which was reinvented as the *Cambridge Natural History Society (1902)* and included a geological section. Then, unlike the *Leicester Literary & Philosophical Society (1835 - see above)* whose *Section 'C' Geology (1849)* survives unchanged, when the *Cambridge Natural History Society's* geology section foundered, it was reborn as the ***Cambridge Geology Club (1984)***, which itself became the ***Cambridge Geological Society (2016)*** that continues today. An entirely separate charitable body, the *Friends of the Sedgwick Museum*, has existed since about 2001, dedicated to supporting and developing this particular institution.

By contrast, it is interesting to note that the ***Yorkshire Geological Society*** **(YGS)** appeared in 1837, perhaps a reflection that their *Philosophical* counterparts cared insufficiently for geology. I have been told that the two bodies remain independent of one another, the YPS' activities more focussed on the city of York, while the YGS covers the whole (and very large) county of Yorkshire, and unusually has never had a fixed base from which to operate. It is of further interest to note that for the first 72 years of YGS' existence titled politicians, namely the 5th Earl Fitzwilliam and the Marquis of Ripon, held the first two Presidencies, before professional and recognised geologists became the norm. This may indeed have been the nature of things with other societies during the 19th century, some, as noted above, receiving royal patronage. ►

The 5th Earl Fitzwilliam, incidentally, played a further role, earlier becoming the first president of the *British Association for the Advancement of Science* in its inaugural year (1831/32). This august body was retitled the *British Science Association* in 2009. It was originally modelled on the *Society of German Natural Scientists and Physicians (Gesellschaft Deutscher Naturforscher und Ärtze)*, founded nine years earlier, and introduced yet another dimension to the nature of these bodies with a reference to the medical world. Geologists were regular contributors to annual meetings of the *Association* at which the important process of peer review was pioneered.

1858 was a year of some significance: it was the year that the ***Geologists' Association (GA)*** was founded, based in London and aimed towards anyone interested in geology, with a closer interface with the general public from the outset, while the ***Geological Society of London*** continued to serve the 'professionals', in particular those employed by the Geological Survey of Britain (established in 1835) as well as those in the academic world. These people were increasing as the number of institutions of higher education grew during the Victorian era. The GA now hosts a large number of affiliated bodies (almost 100 are listed on their website, including some of those already mentioned in the text that are actually older than the GA itself). Many of these are local '*Geological Societies'*, but also such groups as ***Rockwatch*** **(2001)** aimed at youngsters, the ***Oxford Clay Working Group (2011)*** and the ***Scottish Geology Trust (2020)*** (bodies with particular purposes) and the ***UK Fireball Alliance (2020)*** (no, I haven't made that up!..) another specialist interest group dedicated to recording 'meteors and fireballs' and 'recovering freshly fallen meteorites in the UK.'

The list of geological interest groups above indicates that they spread along geographical lines, as much in rural areas as the big cities, with names according as much to whim and taste as much as to constitution. Why, for instance, were some called 'so-and-so geological society' and others 'the geological society of so-and-so? And why, in a more individual case, have a ***Yorkshire Geology Club*** but a ***Midweek Geology Group in Yorkshire*****,** which presumably serve very specific needs?

Meanwhile, as the number of these groups continued to increase, (the list I have compiled so far, unlikely to be exhaustive, includes 30 founded in the 19th century, 65 in the 20th century and 29, so far, in the 21st century) it was inevitable that particular interest groups would continue to emerge. One 'interest area' that appears quite frequently is 'minerals' as in the following societies, which seem to have 'taken off' in the 1970's!

Gemmological Association of Britain (1908)
world's first such, serving the gem and jewellery industry

Scottish Mineral & Lapidary Club (1958)
Britain's oldest such society, based in Edinburgh

Kingston Lapidary, Gem & Mineral Society (?)
based at Hedon Museum near Hull, 'first such in England'

Essex Rock & Mineral Society (1967)

Cheltenham Mineralogical & Geological Society (1968) ►

Bristol & District Lapidary Society (1970)

Plymouth Mineral & Mining Club (1970)

Peak Lapidary & Mineral Society (c.1970)
based in Tideswell

Southampton Mineral & Fossil Society (1971)
'one of the oldest amateur such societies in Britain'

Russell Society (1972)
named after Sir Arthur Russell; established in Leicester, now with branches all over Britain


Sir Arthur Russell

Dartford Lapidary Society (1970-1973
succeeded by the.....
Sidcup Lapidary & Mineral Society (1973)
due to a change of base location to the Sidcup Arts Centre

Norfolk Mineral & Lapidary Society (1973)

Medway Lapidary & Mineral Society (1975)
morphing into the...
Medway Fossil & Mineral Society (2004)
apparently as the interests of their members changed

The British Micromount Society (1981)
or collectors of small specimens requiring optical aids to appreciate them; several regional sub-groups cover England

Sussex Mineral & Lapidary Society (?1990's)
based in Haywards Heath, mainly serving S.E. England.

This selection again shows the whimsical variations in word order in the titles of these societies, and also includes some names embracing other interest areas, notably 'mining' and 'fossils / palaeontology'. So to these we may add the following:

Peak District Mines Historical Society (1959)

Carn Brea Mining Society (1974)
both with mining in mind and all with fossils in mind:

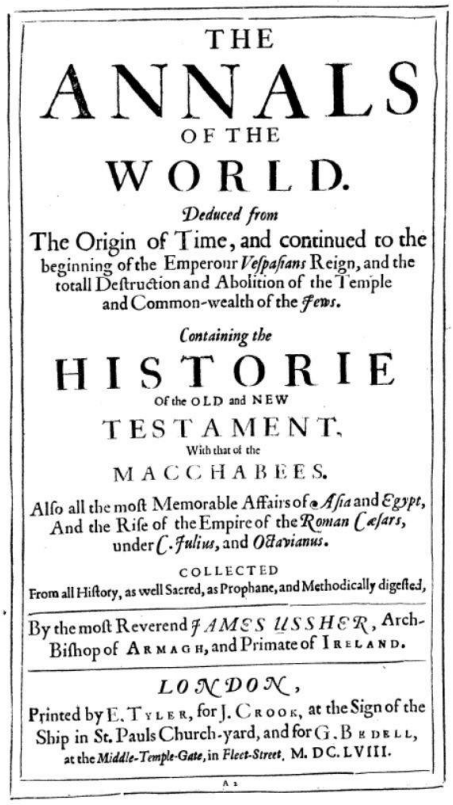
Palaeontological Society (1908)

The Dinosaur Society (2012) ►

Peterborough Geology & Palaeontology Group (2020)
(which emerged from the ***Stamford Geological Society (1982-2014)***)

Most of these groups are affiliated to the *Geologists' Association*, emphasising the significance of this body.

Incidentally, having mentioned the *Russell Society*, there appears to be only one other body which takes its name from an individual: the ***Ussher Society (1962)***, which serves the south-west country and is named after a survey geologist, W.A.E. Ussher (1849-1920), whose forbear, Archbishop James Ussher, might be a more familiar name to you - as he who claimed the world was created at around 6.00 pm on 22nd October, 4004 BC.


THE
ANNALS
OF THE
WORLD.
Deduced from
The Origin of Time, and continued to the beginning of the Emperour *Vespasians* Reign, and the totall Destruction and Abolition of the Temple and Common-wealth of the *Jews*.
Containing the
HISTORIE
Of the OLD and NEW
TESTAMENT,
With that of the
MACCHABEES.
Also all the most Memorable Affairs of *Asia* and *Egypt*, And the Rise of the Empire of the *Roman Cæsars*, under *C. Julius*, and *Octavianus*.
COLLECTED
From all History, as well Sacred, as Prophane, and Methodically digested,
By the most Reverend *JAMES USSHER*, Arch-Bishop of ARMAGH, and Primate of IRELAND.
LONDON,
Printed by E. TYLER, for J. CROOK, at the Sign of the Ship in St. Pauls Church-yard, and for G. BEDELL, at the *Middle-Temple-Gate*, in *Fleet-Street*. M. DC. LVIII.

Title page of The Annals of the World by Archbishop James Ussher, the first English edition published in 1658

That almost takes care of all the variations and persuasions of the nation's geological interest activities, but one final development deserves mention. That is the move towards 'geo-conservation' awareness as general 'green' consciousness overtook much of societal thinking. Just a few geological societies emerged including this activity within their title, notably:

Warwickshire Geological Conservation Group (1990)
Berkshire Geoconservation Group (c.2000)
GeoConservation Kent (?)

Otherwise, this activity is simply undertaken as part of the 'workload' of various bodies (as members of the *BCGS* know only too well), or forms their basic 'raison d'etre', especially those within the umbrella of a nationwide *UKRIGS (UK Regionally Important Geological Sites)* network and other similar Geology Trust groups (now, I believe, numbering around 20 member organisations).

This musing began with an implied question in the title. Are there too many geological societies around these days? The bewildering list I have built up is probably incomplete as not all societies appear to have an active, up-to-date presence on the 'wonderful web', and some errors may have crept into the facts I have presented. My broad conclusion from the number of directions from which different people approach the subject, and the wide interest that exists in its various aspects, and at all levels, is that there can never be too many geological interest groups out there! It just needs people to get involved. ■

Mike Allen