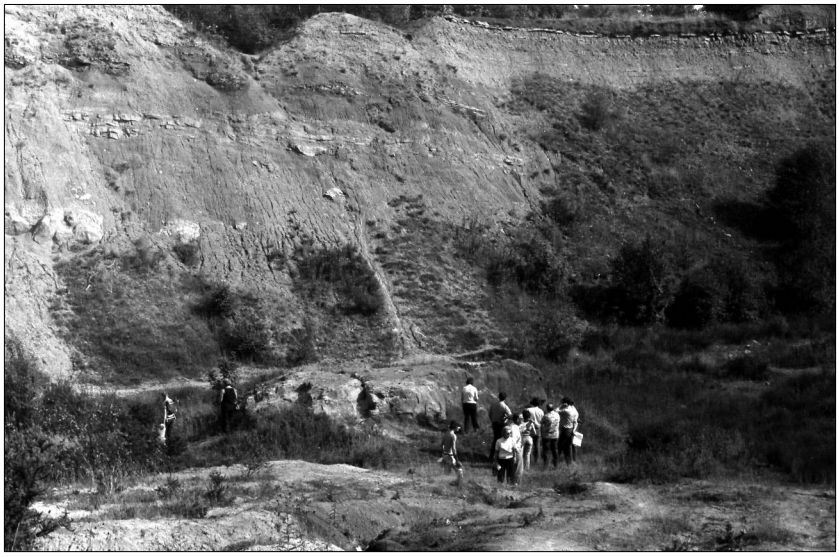
Newsletter No. 291
June 2025

Contents:

BCGS 1st ever field trip in July 1975

To find out more - read on!

Photo by Peter Parkes



Copy date for the next Newsletter is Friday 1 August

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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.

BCGS 50th Anniversary Celebration Weekend

Saturday 5 & Sunday 6 July

Saturday 5 July 10.30 - 3.15: BCGS 50th Anniversary Event
with talks and an exhibition at the
Dudley Museum and Archives, Tipton Road, Dudley, DY1 4SQ

Arrive from 10.30 Refreshments coffee/tea and biscuits

11.00 Introduction from the BCGS Chair, Graham Worton

Followed by a short break for mingling, chatting, refreshments ►

BCGS 50th Anniversary Celebration Weekend

Saturday 5 July *(continued)*

11.30 Talk - 'Innovation and influence - the role and importance of the Black Country in Geoconservation'. Dr Colin Prosser (Natural England).

This talk will give an outline of Black Country geology, its importance as a natural resource supporting the industrial revolution and its historic value to science and education; from Sir Roderick Murchison in the mid 19th century, to the early field visits, the establishment of the museum, BCGS, the UNESCO Geopark and ongoing research today. Dr. Prosser will outline the origins and development of geoconservation both nationally and internationally, and the important part which the Black Country and BCGS have played and continue to play in this vital work.

This talk will be followed by a short break

12.30 Talk - 'The Black Country Geological Society and its key role in the development, celebration and protection of Geological Heritage in the Black Country'. Graham Worton (BCGS Chair, Dudley Museums Keeper of Geology, Black Country UNESCO Global Geopark Lead).

This talk will look at the many aspects of the activities of BCGS over 5 decades. From fundamental work on the geological collections, championing the need for a keeper of geology, being a major force in the many 'Dudley Rock and Fossil Festivals' and key geological anniversary celebrations, to the important roles and actions undertaken in the field of geological conservation, exposure recording, support to research, BCGS has been involved! Now they have become a key partner in the Black Country UNESCO Global Geopark.

1.00 - 2.00 Lunchtime and time to look at the BCGS exhibition ►

BCGS 50th Anniversary Celebration Weekend

Saturday 5 July *(continued)*

2.00 Talk - 'Memory, Rumour and the Murder Mine, Dudley 1961 and what geological information might lurk within an archive'. Paul Ford (Dudley Archivist).

Paul will outline his research on one of the stories often reported about the discovery of the long-dead and never reported missing body of a young woman that was discovered during engineering work in 1961 in a small limestone mine leading off Castle Mill Basin at the north end of Castle Hill, Dudley. He will explain his search for the 'facts' about this, and how distorted memory and Black Country storytelling have resulted in an exaggeration of the truth that has become local folklore in a classic British geological locality. He will provide a little dignity for the lady involved and dispel some of the myths that surround this tale, and have seen the colloquial naming of a geological feature within Dudley as the 'Murder Mine'. In the process he will give an insight into what geological information is locked within Dudley's archives.

This talk will be followed by a short break

2.45 Cutting the Cake and a celebration toast to the future of BCGS as one of the region's most important geological heritage assets!

3.15 End of event and departure from the Dudley Archives. ►

Keep up to date with additions and alterations to our big events by visiting our our website:

bcgs.info/pub/the-society/programme-of-events/

BCGS 50th Anniversary Celebration Weekend

Sunday 6 July 10.00 – 4.30

BCGS 50th Anniversary Field Excursion

The second day of our celebration weekend will recreate parts of the first BCGS field trip as far as we can *(see front cover photo: Doulton's Clay Pit, Saltwells: BCGS 1st field trip, Sunday 27 July 1975)*. The first two trips provided a basic introduction to Black Country geology in roughly stratigraphic order. This trip will include: Lickey Hills and Rubery Cutting, Wren's Nest NNR, Saltwells NNR, and Portway Hill (Blue Rock Quarry), Rowley. Led by Ray Pratt (Lickey Hills Geo-Champions, Graham Worton and Andy Harrison (BCGS).

Meet at the Lickey Hills Country Park Visitor Centre, Warren Lane, Birmingham B45 8ER for a **10.00 o'clock start.** Park in the public car park uphill a bit beyond the VC: GR: SO 9986 7537. Wear strong shoes or boots and appropriate outdoor clothes. We will begin with an introduction to the day and take a look at the oldest (Ordovician) rocks in the Birmingham/Black Country stratigraphic sequence.

Proceed (by car) to Wren's Nest NNR. Park in Fossil View, off Wren's Hill Road (GR: SO 937 922). We will look at the mid-Silurian Wenlock limestone with an opportunity for some fossil hunting.

Continuing on to Saltwells NNR for lunch we park and meet in the Nature Reserve car park on Saltwells Lane, DY2 0AP (GR: SO 934 869). Lunch at the Saltwells Inn or bring your own. After lunch we will look at the Coal Measures sedimentation in Doulton's Clay Pit.

The excursion will finish at the Wildlife Trust's Blue Rock Quarry site on Portway Hill, Rowley. Park in St. Brades Close, off Tower Road, nearest PC: B69 1NH, GR: SO 975 893. Here we will look at the Carboniferous dolerite intrusions and summarise the day's excursion. We will aim to **finish about 4.30.** ■

Saturday 30 August *(Field Meeting):* Guided Walk and visit to the Smestow Valley Local Nature Reserve (SVLNR), Wolverhampton. Leader TBC. Meet at Smestow Valley Local Nature Reserve, Meadow View Terrace, Wolverhampton WV6 8NX (Grid ref: SO 891 999). The day will involve a guided walk and getting to know the staff and local friends group who run the nature reserve with a view to BCGS helping with future events and conservation works.

Other Societies and Events

Mid Wales Geology Club

Wednesday 18 June: 'Brecciation types and sources'. Speaker: Bill Bagley.

Sunday 22 June at 10.00: Field trip to Tan y Foel Quarry Adfa.

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

Warwickshire Geological Conservation Group

Sunday 20 July 10.00 – 4.00: Lickey Hills Field Trip led by Ray Pratt.

Sunday 3 August 11.00 – 3.30: A 'Geowalk' around the "Dudley Volcano" led by Mike Allen.

BCGS members are invited to join both these trips. For more information and booking visit: https://www.wgcg.co.uk/

East Midlands Geological Society

Sunday 3 August at 10.30 to 3.30: Day visit to the so-called 'Barrow Hill Volcano' near Dudley. Leader: Mike Allen.

Non-members are welcome and should register with the secretary. Further info: www.emgs.org.uk or email: secretary@emgs.org.uk For field trip booking instructions see: emgs.org.uk/#fieldtrips

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).

North Staffordshire Group of the Geologists' Association

Sunday 22 June at 10.00: Charnwood Forest (Bradgate Park) led by J. Carney.

Thursday Evening 26 June at 7.00: Bradwell West Quarry (Etruria Marl) led by B. Besley.

Saturday 2 August at 10.30: Stiperstones and Bog Visitors' Centre, Shropshire led by A. Benghiat.

To book please contact NSGGA Field Secretary, Steve Alcock: steves261@aol.com
For more information: https://nsgga.org/

Manchester Geological Association

Saturday 14 June: Alderley Edge. Triassic.

Saturday 5 July: Lyme Park (provisional). Carboniferous and Quaternary.

Saturday 26 July: Trowbarrow, possibly with a quarry visit, Carboniferous limestone.

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

Editorial

As I write this, some of us are looking forward to our 50th anniversary 'away' weekend to the Yorkshire Museum of Natural History in Sheffield, followed by a visit to see the historic Geological Gallery at the National Trust's Biddulph Grange Gardens the following day. After that, our main focus will be on the final preparations for our 50th Anniversary weekend on 5 & 6 July. Full details are in this Newsletter *(above, pp. 2-5).* The weekend's events and activities are for members, invited friends, and for everyone! Please tell your families and friends about it - spread the news as far and wide as possible!

Apart from this event we are working on the programme for the rest of the year, but please be aware that our Committee has dwindled to just 7 members over the last few years, and it's not easy for so few of us to keep the Society running. If you have some time to spare and feel you could help in any way PLEASE get in touch with the secretary *(details above).*

There will be a local field visit towards the end of August or early September, and we hope to be able to give you more details of the autumn Indoor Meetings programme in the August Newsletter.

For your education and amusement in this issue we have detailed geoconservation reports from Andy, then Mike Williams transports us to New Brunswick and the Bay of Fundy, and Mike Allen entertains with more howlers in his Musing. ■

Julie Schroder

BCGS Geoconservation Day Reports

Autumn 2024 - Spring 2025

Portway Hill, Rowley - Castle Hill, Dudley - Cotwall End Quarry, Gornal.

Our geoconservation season for 2024/2025 has been successful, despite Dudley Council's ongoing financial woes affecting the Nature Reserve Wardens. December 2024 and May 2025, saw the Society return to Portway Hill Nature Reserve to help the Birmingham and Black Country Wildlife Trust (BBCWT) and the Friends of Rowley Hills. In February, we had the chance to visit Cotwall End Quarry, Gornal, thanks to some negotiations from the Wren's Nest wardens. Unfortunately, our planned clearance works at Castle Hill, Dudley, on 8 March with the BBCWT, were cancelled on health and safety grounds, after winter storms brought down trees.

Saturday 14 December 2024 and Saturday 10 May 2025: Portway Hill, Rowley.

For both Portway Hill geoconservation events, we met BBCWT and the Friends of Rowley Hills members on St Brades Close, off Tower Road for a 10.00 start and finished around 2.30.

The nature reserve's elevation, at roughly 175m above sea level, the underlying 317 million year old dolerite (or micrograbbro) bedrock and the backfilled former Blue Rock Quarry all contribute to making this site unique for wildlife. Portway Hill sits within the Rowley Hills complex on the ridge of high ground that forms Central England's watershed. It is said that the hills also receive the full brunt of easterly winds from the Russian Ural Mountains.

Both events included the ongoing battle to remove fresh bramble, hawthorn and vegetative growth and accumulated soil from the dolerite exposures. Over the years, the vegetation and soil clearance and maintenance that the BBCWT, the Friends Group and BCGS have undertaken has helped to reveal the dolerite exposures. These works have helped to create several bare rock, soil and rock scree slopes and open meadow grassland habitats for many common and some rare floral and faunal species.

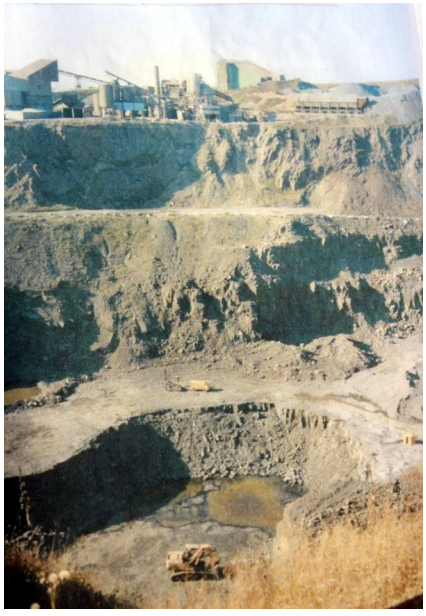
The privately owned land outside the BBCWT nature reserve has been pretty much left to nature. This provides many more habitats for wildlife to thrive on Portway Hill, including hawthorn thickets, boggy ground, wetlands and dry stone walls that hark back to the site's former use for farming prior to the quarries being excavated. Whatever was used to backfill the former quarries appears, in places, to prevent hawthorn or broom from growing. Swathes of marsh grasses and old man's beard defined the boggy areas and wetland habitats that were dry during our May visit. ►

Usually, when we undertake our clearance sessions during the autumn/winter months, it is hard to picture the biodiversity this landscape has to offer. The dolerite rock faces take on a very monotone, dark and wet appearance. The landscape is typically covered with the dead remains of summer flora and animal life is scarce. Our May session was quite a contrast. With the landscape waking up, the dolerite rock faces took on a very different appearance. Fresh deep purple dolerite cores were fringed with the orange brown concentric rings of weathered rock that gives this kind of weathering, 'spheroidal' or 'onion skin', its name.

Bare rock habitats in England are scarce. Apart from the invasive bramble, the dark exposed rock faces provide a valuable warm and protected habitat for rare plants, such as burnet saxifrage, and many invertebrate species including beetles and spiders. The soil and rock scree slopes immediately in front of the rock faces, provide well drained and nutrient poor habitats where spring and summer wild flowers thrive. These include oxeye daisies, common ragwort, catsear, hawksbit, bush vetch and red clover.

Away from the rock faces and scree slopes, the ground flattens out into a flat and low lying meadow grassland. 'Fill', used to backfill the former Blue Rock Quarry and the underlying meadow, provides acidic, well-drained and nutrient-poor soil conditions ideal for various grasses and wildflowers. These include birdsfoot trefoil, meadow and creeping buttercups, clover, bush vetch and yellow rattle. Surrounding the meadow and above the rock faces, hawthorn and broom provide low tree-like cover which in May looked resplendent in white, pink and yellow blossoms.

We also witnessed how the scree slopes and grassy meadow wildflowers and blossoms provide a home to numerous insect species, including beetles, Roesel's bush-cricket, wasps and bees, such as white and red-tailed bumblebees, bee flies and various burrowing varieties. Many butterflies and moth species could also be seen flitting about at this time. They thrive into the summer months and include marbled white, green hairstreak, small and large skipper, six-spot burnet moth, painted lady, small tortoise shell, small copper, small heath, orange tip, peacock and yellow shell.



Former Blue Rock Quarry, courtesy of the Friends of Rowley Hills

Various bird species have been observed flying over the reserve, including kestrel, buzzard, peregrine falcon, sparrowhawk, red kite and raven. In autumn and winter, we often hear blue and great tits singing whilst we work, and during our May visit, greenfinch, wrens and chaffinches and migratory white throats could be heard. According to the Friends Group, wheatears like to use the old drystone walls forming former field boundaries. Field voles, badgers and foxes also call the nature reserve and wider Portway Hill area home. Foxes have often been seen during our autumn/winter sessions and if you know where to look, the shy badgers leave their marks. ►

Our May session also included looking at some historical photographic records held in the Friends Group archives. They show how the landscape has changed over the years and include photos showing the former Blue Rock Quarry. The rock exposures seen today hint at only a tiny fraction of what was exposed historically when the former quarry must have reached depths to around 100m. After lunch, we had a walk around the reserve and over Portway Hill. Walking through blossoming hawthorn and broom, we saw historic fields and drystone walls, a historic World War 2 gun emplacement and the possible location of the former Lye Cross Colliery winding gear and shafts.

More information on the BBCWT and the Friends Group can be found on their web pages at https://www.bbcwildlife.org.uk/ and https://friendsofrowleyhills.org/.

Saturday 8 February 2025: Cotwall End Quarry, Gornal.

Background

Cotwall End Quarry is a relatively new site, in recent times, for the BCGS to visit and undertake conservation work. The quarry sits within and on the eastern periphery of the Cotwall End Local Nature Reserve, located on the western edge of the Black Country, within Gornal and to the south-east of Baggeridge. The site is Council run and the Wren's Nest wardens, who now look after the reserve, invited us to help undertake the clearance work.

Cotwall End grassland meadows

The nature reserve is a long north to south trending valley through which Bob's Brook flows, southwards before intersecting Holbeche Brook around 1 km to the south. Covering roughly 29 hectares, the reserve is predominantly tree covered with areas of open meadow and sporadic large pools. Critters Farm is situated towards the northern end and houses various commercial and educational establishments, such as Ellowes Hall Sports College. These form Lower Gornal, and bound the nature reserve to the east, south and west. Cotwall End Road runs along the western boundary.

Cotwall End, Turner's Wood

The steep western slopes of Turner's Hill fall, from roughly 175m Above Ordnance Datum (m AOD), along the reserve's eastern edge to around 120m AOD at Bob's Brook before gently rising back to around 180/185m AOD towards the west. Cotwall End Quarry itself, is situated centrally within the nature reserve at the base of the steep, wooded slopes forming Turner's Hill. ►

The site was included in Dudley Borough Council's 2001 'Wildspace Project' and a 'Countryside Walks' leaflet relating to the Nature Reserve was produced in 2003. The leaflet identifies the Cotwall End quarry as 'The Old Quarry' and the slopes to the east as 'Turner's Hill Wood'. Throughout its history the now infilled Old Quarry was worked for various minerals starting with clay in 1620 and later coal, sandstone and limestone. 'Turner's Hill Wood' reportedly gets its name from the Turner family who were recorded in the area during the 19th Century. It is deciduous woodland that includes oak, silver birch and hazel.

The published British Geological Survey (BGS) map for the area, Sheet 167, 'Dudley', dated 2012, shows the reserve to be devoid of superficial deposits. This means that, like the rest of the Black Country, the valuable minerals for extraction were close to the surface. As the history of mineral extraction in the quarry shows, there is a complex sequence of bedrock underlying the Nature Reserve and surrounding area that has been heavily faulted.

The Geology

Running along the nature reserve's eastern edge, geological maps show a long fault extending to the north and south that passes roughly along the base of Turner's Hill. This is a continuation of the Western Boundary Fault, which marks the edge of the South Staffordshire/Black Country Coalfield and has downthrown younger strata to the west by several hundred metres against older strata to the east.

Carboniferous mudstone, siltstone and sandstone strata, belonging to the Alveley Sandstone Member and Pennine Middle Coal Measures Formation, underlie most of the nature reserve itself. Turner's Hill is a Site of Special Scientific Interest (SSSI). It is formed from several Upper Silurian mudstone, siltstone and sandstone strata belonging to the Raglan Mudstone Formation, Temeside Mudstone Formation, Downton Castle Sandstone Formation and Upper Ludlow Shale.

Carboniferous Sandstone Boulder

Of the Carboniferous strata underlying the nature reserve, the youngest layers belong to the Alveley Sandstone Member which was deposited during the Asturian Substage. According to the BGS GeoIndex, this stratum is generally described as 'red mudstone and sandstone, fine- to medium-grained with thin 'Spirobis' limestone beds and pedogenic limestone'. This stratum formed under fluvial conditions on expansive low-lying Late Carboniferous floodplains.

The underlying, older, Pennine Middle Coal Measures Formation formed during the Duckmantian to Bolsovian Substage within forested coastal swamps where sediment from the land and marine inundations were deposited. This stratum is described as 'interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams, with a bed of mudstone containing marine fossils at the base, and several such marine fossil-bearing mudstones in the upper half of the unit'. Up to four coal seams are shown running roughly north to south through the nature reserve and beneath the valley floor, which were historically mined with varying degrees of success. These include the famous South Staffordshire Thick Coal which measures about 9m in thickness and occurs at roughly 75m below the surface. ►

The Raglan Mudstone, Temeside Mudstone and Downton Castle Sandstone Formation underlying Turner's Hill were all deposited during the Late Silurian, Pridoli Epoch. The youngest stratum, the Raglan Mudstone Formation, was deposited under subaerial estuarine conditions and is described as 'red mudstones and silty mudstones with calcretes and sandstones'. The Temeside Mudstone Formation is described as 'green to olive mudstone and siltstone with subsidiary green to brown micaceous sandstone and locally developed vertebrate bone beds'. The Downton Castle Sandstone Formation, locally known as the 'Gornal Grit', is described as 'yellow, fine-grained, micaceous, well-sorted cross-bedded sandstone (Sandstone Member), with siltstone and olive green mudstone'. Historially, this stratum was worked as a building stone and can be found in local churches, houses and many field boundaries. It also contains fossil fish including the locally known 'Gornal Fish', *Hemicyclaspis murchisoni*. Together, the Raglan Mudstone Formation, Temeside Mudstone Formation and Downton Castle Sandstone Formation show a steady transition from estuarine conditions towards more coastal shallow marine environments typical of a tidal beach or sand bar.

The underlying, and older, Upper Ludlow Shales were deposited during the Middle/Upper Silurian (Ludfordian Age), around 415 Ma, and were deposited under quiet marine conditions. This stratum forms the eastern edge of the Old Quarry and is described as 'olive-grey calcareous siltstones, silty mudstones and mudstones'. Locally known as the 'Sedgley Limestone', this stratum includes the Ludlow Bone Bed that contains many fish fossils and is visible in several trackside exposures in Turner's Hill Wood.

Cotwall End 'Old' Quarry before clearance

The Geoconservation work

A small group of us met the Wren's Nest wardens for a 10.00 o'clock start on Cotwall End Road, opposite No. 61. Like many reserves in Dudley Borough, the Cotwall End Local Nature Reserve and Cotwall End Old Quarry have fallen foul of low maintenance over the years. The wardens have worked hard to start clearing some of the reserve site and the Old Quarry area but there was still a lot to do. We spent the day removing and burning trees and scrub from the quarry base, to open it up and let more light in, and worked on developing paths to provide single access and egress points. Exposed rock within the quarry is rare. However, our work helped uncover several large moss covered Carboniferous Coal Measures Sandstone boulders left behind from the time when the quarry was being worked. Historically, the quarry floor was very wet, as could be seen from the marsh grasses and sedges covering it. However, the mature trees now growing within the Old Quarry have helped to dry the floor.

Clearance work at Cotwall End 'Old' Quarry

Along its length, Cotwall End Nature Reserve supports many habitats, including grasslands, wetlands, woods and fields. Trees and shrubs such as oak, silver birch, hawthorn, ash, damson and apple threaten to overgrow the open grassland meadows unless kept in check. Various mosses and lichens coat the trees, indicating good air quality whilst giving the reserve an eerie feel on an early spring morning. ►

Emerging snowdrops and gorse hinted at the many wildflower and species that would soon appear with the oncoming spring months. The Wildspaces Project leaflet indicates that the grassland habitat supports many grasses and wildflower species, including meadow vetchling, birdsfoot trefoil, oxeye daisy, goatsbeard and red bartsia. Wardens hope to get more species growing there.

The grassy meadows also provide a valuable open and sunny habitat for ants, whose hummocky hills litter these areas. Numerous butterflies, including ringlet, small copper and meadow brown also call the meadows home. Great, blue and coal tits, nuthatch, robin, blackbird, wren, green and greater spotted woodpeckers are just a few bird species to be seen and heard at the reserve. We heard many of these during our day clearing the quarry. We finished our day at the quarry around 2.00 whilst waiting for the bonfire to die down.

Cotwall End 'Old' Quarry after clearance

More information on the Cotwall End Valley can be found in Dudley MBC's Wildspace leaflet – Countryside Walks in Dudley and on the BCGS website at:
https://bcgs.info/pub/local-geology/sites/cotwall-end-local-nature-reserve/.

Once again, with the current season drawing to an end, I would like to thank the volunteers and staff from the BBCWT, the Friends of Rowley Hills and the Wren's Nest Wardens for providing these opportunities to the BCGS. I would like to remind members that these days provide a great opportunity to get out and explore the local Black Country landscape and the interconnected relationship between geology, human heritage and biodiversity. As always I would encourage members to come and get involved, come out and enjoy a day socialising as well as helping out with the all important and ongoing conservation work which is fundamentally important to the BCGS. ■

Andy Harrison

St John New Brunswick

Home to the Reversing Rapids and gateway to Stonehammer North America's first Global Geopark

The city of St John situated on the western shore of the Bay of Fundy, famous for the world's greatest tidal range, is home to a unique phenomenon where the incoming tide reverses the flow of the St John River in a spectacular display of nature's power.

The rapids owe their existence to glacial diversion of the St John River which originally entered the Bay of Fundy five kilometres to the south west. 15,000 years ago glacial meltwater created a moraine of sand ►

and gravel necessitating the river to find a new course via a channel cut through tightly folded Lower Palaezoic sediments entering the sea as a waterfall. However a combination of river bed erosion and sea level rise resulted in the creation of the Reversing Rapids which are thought to be only about 3000 years old.

The maximum tidal range within the Bay of Fundy is some 50 feet, however, this reduces to 25 feet at the mouth of the St John River which is still sufficient for the tidal effect to be felt at Fredericton, the state capital, some 80 miles upstream from the rapids. A combination of water depth at 200 feet to the seaward side, 75 feet over the rapids and 300 feet immediately thereafter with a restricted 1000 feet width over the rapids causes the river to reverse flow at high tide. The ebb value of the water then released has been calculated at 2 million cubic feet per second. This natural spectacle occurs twice daily with each high tide and can be observed from a specially constructed viewing platform with ample parking and frequent connections by public transport back to the city centre some 1.5 miles away.

The area of the Reversing Rapids is itself a noteworthy geological outcrop comprising the Caledonia Terrane of Cambrian and Ordovician sediments tightly folded into a syncline, and these have yielded graptolites and trilobites. These sediments rest unconformably upon Pre-Cambrian rocks belonging to the Brookville terrain (750 million to 1.2 billion years old) which have themselves yielded stromatolites. The site has been known since the 1830's and was visited by Sir Charles Lyell in 1852.

An additional geological trail known as the 'Fort Howe and Somerset Street Geology Walk' links the rapids back to the city centre enabling observation of rocks belonging to not only the previously referred to Caledonia and Brookville terrains but also the Kingston terrain thought to represent an Early Silurian Volcanic Arc. This comprised granitic plutons and mafic sheets metamorphosed to upper green schist - lower Amphibolite facies. All of this is detailed by interpretive boards and covered by excellent leaflets published through New Brunswick Museum/Canadian Geological Foundation. (Museum currently closed and undergoing refurbishment with planned re- opening in 2027). ■

Mike Williams

Eric Robinson, 30th October 1929 - 3rd May 2025

It is with great sadness that I bring you news of the death of Eric Robinson, a towering figure in the geological world, and good friend of BCGS. His reputation as an inspirational teacher is his lasting legacy.

(See my tribute: 'A Living Legend' in Newsletter 288, Dec. 2024. Ed.)

Mike's Musings No. 56 - addendum

Postscript on the subject of my last Musing: 'Spheroidal Objects'

I have just returned from a brief visit to Knapdale and came across this information concerning a 'carved stone ball' discovered on the Iron Age site of Dunadd Fort, believed by some to be the capital of the ancient kingdom of Dál Riata (or Dalriada), situated on a broad swampy plain north of the Crinan Canal (Argyll and Bute, Scotland).

The object itself is preserved in the splendid museum in Kilmartin. This village lies in the heart of Kilmartin Glen, an area of many archaeological remains of various description, and is 'essential visiting' for anyone with even a passing interest in the ancient history of Britain.

An information board on the hill fort itself advises us that 'according to local legend, stone balls and other artefacts with magical powers were abandoned by fairies in a farmhouse below the hill fort'.

So, now we know! ■

Mike Allen

Mike's Musings No. 57

And still more laughs – more of those Howlers

The time has come around again for a further collection of nonsense, courtesy of that revered publication from the Geological Society of Glasgow, *'Geological Howlers'* (1980).

As you may know, I just love all this modern technology (not!!), but I have been unable to find any ***'sexontidised maps'***.

These apparently ***'enable you to locate your position more accurately'***.

For the time being I'm happy to carry on with simple, old-fashioned, O.S. grid references. However, I cannot deny that technological innovation has been of much service in scientific discovery. Did you know, for example, that

'from underneath the microscope much can be learnt'? *(Fig.1)*

Talking of microscopes provides a segue into the understandable confusion for beginners with the term 'Greensand', which, experience tells us, is often something of a misnomer. Thus we learn that: ►

'Greensand is a clay. It is formed in the usual way that sands are formed, but it differs from other sands in being clay. It is green because of its colour(!)***. Under the microscope*** (cf. Fig.1!) ***you can see it is composed of blue mud coloured by the presence of iron. The iron is usually oxidised to yellow. It turns brown on weathering. Before weathering it is grey. I wonder why they call it greensand'.***

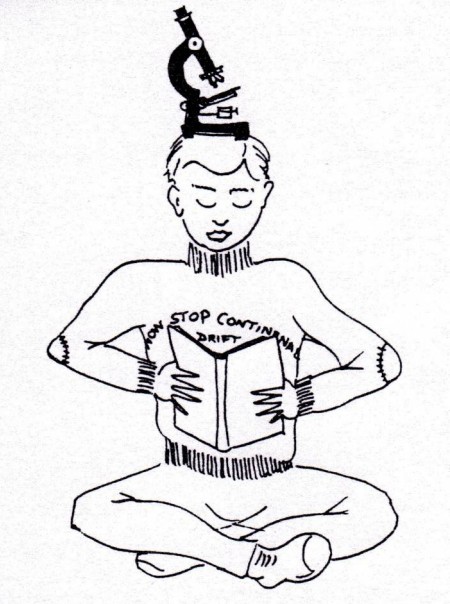


Fig. 1: From underneath the microscope much can be learnt

The following candidate found the best way to overcome confusion with a simple, direct approach to description:

'Greensand – as its name suggests – is a green sand'

which unfortunately isn't always the case. Another candidate offered the following observation which has more than a grain of truth:

'The Lower Greensand of the Weald is red in colour',

although the reality is rather more complicated.

Structural geology, especially 3-dimensional thinking, seems to be an area of geology that creates considerable confusion amongst newcomers to the subject. I'm not sure that the author of the following observation is likely to get far:

'the folding was on a north-south, east-west axis'.

I can only hope that they managed to find their way home from the examination centre!

The fundamental concept of dip and strike also seems to be a hurdle some find difficult to surmount if the following two statements are anything to go by:

'dip horizontal, strike unknown' or 'the strike tells us the horizontal slope of the rock'.

The latter observation suggests an understanding without being able to explain things clearly. Quite what was intended here, however, is anyone's guess:

'the strike of an outcrop is the line which when viewed vertically on a map or in the field is recorded by a compass as from due north'.

Unconformities are another fundamental principle that appears to cause much confusion amongst beginners:

'The unconformity was laid down later than the original rock and so has suffered less erosion'

suggests a lack of basic understanding. A more common error:

'beds lying uncomfortably on other beds',

or, more specifically,

'with Permian resting uncomfortably on Carboniferous Limestone' may be down to a lack of concentration or, perhaps, may be deliberately contrived for humorous effect? Another variation might just be down to difficulty in remembering a jargon word:

'the Limestone laid unconformidably on older strata'.

Sometimes it may just be a lack of geographical knowledge that results in observations such as:

'the Highland Boundary Fault goes across Loch Lomond in the Bahamas area', ►

or perhaps it's due to stress under exam conditions, much like those examples of 'Dumb Britain' which Private Eye likes to harvest from various television quiz shows.

Other sources of amusement arise from failure to recognise the literal meaning of a statement. Thus

'the general succession of the area can be seen by running from the north west corner of the map to the south east corner'

might be an unintentional trap we all fall into on occasion. But, of course, that is no way to treat a map! In this example of literal nonsense from a completely different context (glaciation?) we learn that:

'this forces the crack to widen until it falls off'!

Perhaps this is related to the following explanation of glacial erosion:

'The fresh snow melts on the ice and works its way through it, pushing the ice further away all the time and forming a hole between the rock and the ice in which the water then accumulates. Later the ground moraine at the bottom relaxes and bends upwards and crevices are then found under the ice'

before dropping off, one presumes?? On the subject of glaciers, did you know that:

'a glacier is something in Australia that explodes'.

A different view on the action of glaciers holds that:

'a glacier has passed through the area, cutting off the landscape'

which sounds even more drastic than cracks falling off. Alternatively,

'glaciers spread a murrain over the land' which could be worse still!

With BCGS's interest in glacial erratics in mind, this is fecund territory for interesting observations such as:

'if you see a big boulder that looks as if it came out of the sky, the chances are that it is an erratic'.

Another theory suggests that

'erratics have been left as isolated rocks which have been allowed to wander'.

And perhaps we shouldn't be surprised at some joker coming up with the concept of

'glacial erotics' (Fig.2). ►

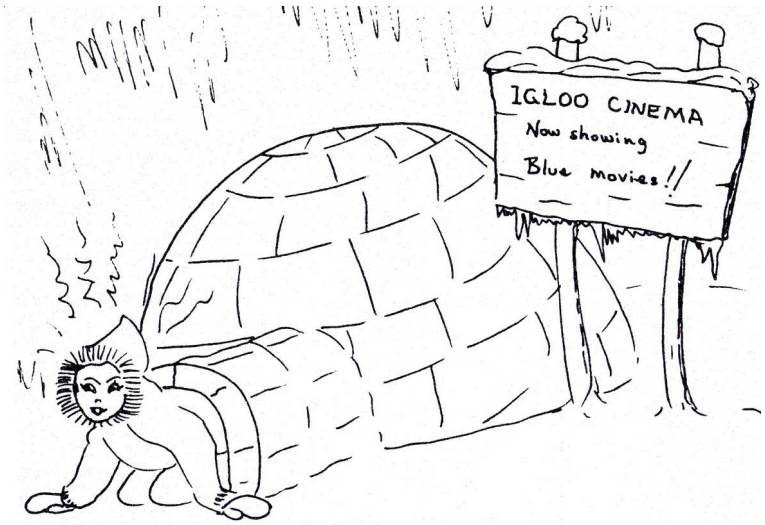


Fig. 2: ... 'glacial erotics'!

'Phossils' are always good for humorous invention, not always intentionally though:

'the trilobites that did not have eyes were, very appropriately, described as blind'.

This is another one of those statements with which it is difficult to argue, but is completely vacuous. At least the next two efforts try to move on to some sort of conclusion concerning trilobites' visual capabilities:

'the trilobite lived in Cambrian times at the bottom of the sea and was not very intelligent it had a very bad sense of smell and eyesight at a later date some trilobites developed without eyes because they lived in an area where it was so dark that they did not need them'

(a lesson in punctuation would not go amiss either) while:

'some trilobites had large eyes to enable them to escape from their creditors more easily'.

There is plenty more to be said about trilobites which I shall leave for another occasion, and pass on to the entertaining insights we learn about the ever popular dinosaurs. Thus:

'a dinosaur is a plant-eating mammal that preyed upon its fellow reptiles…

(a subtle error there)

…it appeared in the Triassic period and died at a very ripe old age in the Cretaceous' and

'a dinosaur was fairly large, about 200 feet high. It balanced itself on its tail with the help of its hind legs'

rather than the more obvious other way around! Some offerings strain credulity as to whether the student was particularly concerned with passing an exam rather than just having some fun:

'Trace fossils, such as dinosaur footprints, may also be used. A dinosaur would not walk, for example, on the roof of a cave, so a bed is overturned if footprints appear on the rocks of the roof'.

Even more absurd and surely contrived?:

'a dinosaur is an extinct animal still found in Australia (!). ***It was sometimes so large that its feet are found in the Precambrian and its head in the Silurian because it was too big to lie down where it died'.***

Some answers are no doubt genuine, but unfortunately wrong. Perhaps one can forgive muddling things up, as with:

'oysters are brachiopods'

(both are, after all, 'shellfish') but confusion can go a bit beyond:

'oysters are bivalved shellfish' (correct) ***belonging to the graptolites'*** (oh dear!)

to sit comfortably as simple misunderstandings.

Of course, we should always make allowance for students for whom English is not their native language; thus we hope that in responding to the editor of a journal, the author of my final item for this Musing didn't really intend things to be taken too literally:

'Please thank the referees for their suggestions. I would like to execute them' (!!!). ■

Mike Allen