



Newsletter No. 274

August 2022

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To find out more about this photo - read on!



Copy date for the
next Newsletter is
Saturday 1 October

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<p>For enquiries about field and geoconservation meetings please contact the Field Secretary. To submit items for the Newsletter please contact the Newsletter Editor.</p> <p>For all other business and enquiries please contact the Honorary Secretary.</p> <p>For more information see our website: bcgs.info, YouTube, Twitter: @BCGeoSoc and Facebook.</p>		

Future Programme

Indoor meetings are normally held in the Abbey Room at the Dudley Archives, Tipton Road, Dudley, DY1 4SQ, 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.

Wednesday 7 September (Evening Field Meeting): The Geology of the Rowley Hills Geosite, Sandwell, led by Graham Worton. Meet at 6.30 in the lay-by roadside parking on Darby's Hill Road, B69 1SG, (grid ref: SO 96704 89278). This evening walk will take in the views, look at exposures of the famous 'Rowley Ragstone' at the Blue Rock Quarry Geosite, and some millennium Geoart installations. Joint meeting with the Geological Society, West Midlands Regional Group.

Monday 12 September (Field Meeting): The Building Stones of Birmingham - Trail 3 'Around the Shops', led by Julie Schroder. 11.00 - 12.30. Meet at the Bull Statue, Rotunda Square, St. Martin's Walk. This is the first BCGS guided walk on this trail since the leaflet was published in 2021. It is a Birmingham Heritage Week event. [Click here](#) for more information and booking.

Sunday 18 September (Field Meeting): Walk around the Stiperstones, led by Albert Benghiat (Chair, Shropshire Geological Society). Joint trip with Lickey Hills Geo-Champions. Meet at 10.30 at the car park: GR: SO 3697 9768 ([see map on website](#)). The walk is 8km with 188m of ascent. Bring a packed lunch, and clothing for rough ground and exposed hillsides. This walk is an opportunity to compare the Palaeozoic quartzites of the Lickey Hills, with those exposed at the Stiperstones. Finish by 4.00. There are still a few places remaining. To book, contact Ray Pratt: geostart@btinternet.com

Monday 19 September (Indoor Meeting): 'Celebrating the Origins of Animal Life: Building a UNESCO Global Geopark in Charnwood Forest, UK'. Speaker: Jack Matthews (Geoheritage Conservation and Interpretation Officer for the Charnwood Forest Geopark, UK). Charnwood Forest in Leicestershire is host to some of the oldest animal fossils in the world. This presentation will outline the internationally significant geodiversity of Charnwood Forest - including the outstanding ancient fossils - and the ways it has shaped the landscape, communities, and people of Britain's 'unexpected upland'. *More information on our website. Ed.*

Monday 26 – Friday 30 September: BCGS visit to the Dingle Peninsula. Field trips led by Ken Higgs. More information: Newsletter 271, Feb 2022. Contact Alan Clewlow: treasurer@bcgs.info

Saturday 8 October (Geoconservation Day): Wren's Nest. Directed by the reserve wardens. Meet at 10.30 at the wardens' office at the end of Fossil View, off Wren's Hill Road (GR: SO 93699 92118). Park along Fossil View. The day will involve scrub clearance. Bring gloves, stout footwear and packed lunch. Wardens will provide tools, hard hats if necessary and a hot drink. Finish around 2.30.

Monday 17 October (Indoor Meeting): 'Geology of Iceland and the Fagradalsfjall eruption 2021'. Speaker: Alan Clewlow (BCGS Treasurer).

Monday 21 November (Indoor Meeting): 'Bilston Stone Quarries - Digging up the Past'. Speaker: Graham Hickman (President of the GA and member of BCGS). Graham wrote about his family connections to these quarries in December 2010 (Newsletter 204). Combining his genealogical and geological research, this talk will explore the geology where his ancestors dug a living for themselves alongside the historical documents and evidence they left behind. *More information on our website. Ed.*

Monday 12 December (Indoor Meeting, 7.00 for 7.30 start): A Christmas Members' Evening at the Dudley Archives.

Other Societies and Events

Lickey Hills Geo-Champions

Sunday 9 October 10.30 – 12.30: A walk back through time in the Lickey Hills. Led by Malcolm Coghill (Lickey Hills Geo-Champion and BCGS member). A free guided walk suitable for all the family. Meet at the Lickey Hills Country Park Visitor Centre in time for a 10.30 start. The walk is about 1.5 miles and may be rough and muddy in places. Going back almost 500 million years to an ancient shoreline, you will explore evidence for the convulsions of rocks suffered as Britain collided with North America. You will see pebbles washed by rivers from France around 250 million years ago, and an unconformity on Bilberry Hill ridge where you can see a junction between the underlying Lickey Quartzite and a later formation of quartzite breccia.

The Geologists' Association

9-11 September: 2022 GA Annual Conference. Fantastic Fossils at Hull University.

Saturday 10 September talks:

Professor Danielle Schreve - Devon Mammoth,
Will McMahon - Howick Arthropod,
Simon Penn - Isle of Wight Spinosaurs,

Dr Emily Swaby - Rutland Water Ichthyosaur,
Dr Tim Ewin - Cotswold Echinoderms,
Natalia Jagielska - Isle of Skye Pterosaur,
Professor Malcolm Hart - Lologosepia from Lyme Regis.

See the websites for further details. Conference: <https://geologistsassociation.org.uk/conferences/>
Geology from your Sofa: <https://geologistsassociation.org.uk/sofageology/>

Teme Valley Geological Society

Saturday 1 October: Field Trip to The Dowards led by Jim Handley.

Non-members £3. For field trip details and further information contact John Nicklin, email: martleypfo@gmail.com or phone on 01886 888318 or visit: <https://geo-village.eu/>

Shropshire Geological Society

Wednesday 14 September: 'Platinum Group Metals - an increasingly valuable commodity'. Guest speaker: Dr Hannah Hughes, University of Exeter.

Lectures are being held using Zoom and commence at 7.15 for 7.30. Further info: <http://www.shropshiregeology.org.uk/SGS/SGSEvents.htm>

Warwickshire Geological Conservation Group

Tuesday 20 September at 7.30: 'Dinosaurs: New Visions of a Lost World'. Speaker: Mike Benton. Talk held at: St Francis Church, 110 Warwick Rd, Kenilworth, CV8 1HL.

There is a charge of £2.00 for non-members. For more details visit: <http://www.wgcg.co.uk/> or email: WarwickshireGCG@gmail.com.

East Midlands Geological Society

Thursday 25 August: Field trip to the Bonsall area, led by Mike Allen. Meet at 10.30 at the car park in Clatterway, Bonsall (O.S. Grid: SK 280 579).

Non-members are welcome and should register with the secretary. Further info: www.emgs.org.uk or email: secretary@emgs.org.uk

Mid Wales Geology Club

Wednesday 17 August: 'Study of the Church Stretton Fault near Gladestry'. Speaker Geoff Steel.

Further information: Tony Thorp tel. 01686 624820 and 622517 tonydolfor@gmail.com
Web: <http://midwalesgeology.org.uk> lectures start at 7.15 via Zoom.

Open University Geological Society, West Midlands

Saturday 3 September: Field trip exploring geological exposures in the north Malvern Hills. Led by Adrian Wyatt. Contact Dave Green: davepgreen@btinternet.com

Thursday 6 October: Field trip visiting the location of Glacial Erratics, walking from Northfield to B'ham University. Contact Dave Green: davepgreen@btinternet.com

Abberley and Malvern Hills Geopark - Geofest

The 2022 Abberley and Malvern Hills Geofest is running from 28 May to 4 September with the usual variety of events and exhibitions. Click [here](#) to view or download the Geofest programme.

For further information go to: <http://geopark.org.uk/>

Editorial

Local news dominates this issue, with Andy's detailed report from the Dudley building stones field trip, Graham's Black Country Geopark update, Matt's Maps covering Bumble Hole and Warrens Hall Geosite, and an update on our partnership Erratics project covering the SW Birmingham area. But perhaps most notable of all is the item from Graham Hickman. Born and bred a Black Country boy from Bilston we congratulate Graham on his recent appointment as President of the Geologists' Association, and celebrate his long-standing BCGS membership and ongoing commitment to our Society. We look forward to Graham's talk on the Bilston stone quarries in November (details on p.2). Mike Allen rounds off the Newsletter with the final instalment of 'A Question of Trust' highlighting more elaborate hoaxes.

For those who have signed up to the Stiperstones trip please note that the full details are in our programme of events. There are still a few places left. Details are on p.2 and there is a map on our website. This trip may inspire you to visit or re-visit the Lickey Hills to compare the Stiperstones and Lickey quartzite formations. Details of a guided walk in the Lickey Hills in October are on p.3.

The Erratics project now has 3 leaflets in print and the 4th, a cycling trail is at the printers. 'Boulders by Bike - SW Birmingham' will be launched on 11 September with limited places on the guided cycle tour (details on p.13).

The Rowley Hills set the scene for Graham's final walk in the summer series of evening field trips on 7 September. These have taken us on a fascinating journey around the Black Country with the benefit of Graham's knowledge and endless store of anecdotes. To prepare for this final trip, have a look back to Matt's Maps in Newsletter 269, October 2021: 'The Rowley Hills and Blue Rock Quarry'.

We look forward to a more normal season of indoor talks, and the chance to meet again on a regular basis. Alan Clewlow, our treasurer, has kindly stepped in as acting Meetings Secretary for a short time, but we still need someone to take over this role.

Please remember to share your geological experiences, photos and questions. We will always make room for members' items in these pages. ■

Julie Schroder

BCGS Committee: vacancy for a Meetings Secretary

We urgently need a new Meetings Secretary. If you can help, or would like more information about the work entailed, please don't be shy to put your name forward! Please use this email address: honsec@bcgs.info

Field Meeting Report

Wednesday 8 June: Dudley Town Centre. Led by Graham Worton

Introduction

We met outside the old Museum and Art Gallery in St James's Road. The visit aimed to see how geology has influenced the Dudley townscape, through building construction and the stories that could be told from the building materials.

After some stories relating to the nearby historic buildings, we walked south-west along Priory Street. Along the way we took in Court Passage and an unmarked alley before crossing Wolverhampton Street (B4176) and continuing southwards along The Inhedge to Top Church (aka St Thomas and St Luke's). Our route continued north-east along the High Street, passing Rutland Passage to the pedestrianised central market place. The walk finished at the Earl of Dudley's statue at the junction between Castle Street and The Broadway (A459).

The Lie of the Land

The land generally drops from Top Church (in the south), northwards towards The Broadway (A459) before rising sharply in a north-easterly direction to Castle Hill. Graham explained how the landscape reflects different Carboniferous and Silurian strata. Top Church sits on the Coal Measures strata and a 10m thick seam of the 'Thick Coal', which in vertical succession sits beneath a 10m layer of hard sandstone called the 'Thick Coal Rock'. Earth movements and tilting have, today, placed this sandstone layer immediately behind the Church to form a ridge. Falling ground elevations towards the north reflect softer interbedded strata comprising coal, shale and sandstone layers. A slight rise towards the market place marks a significant change in the underlying strata, where the Coal Measures give way to Middle Silurian shale and limestone beds. The boundary represents the Silurian/Carboniferous unconformity and 100 million years of missing geological history.

Early History of Dudley

Dudley's history stretches back to Anglo-Saxon times. The castle was constructed around 1070 following the Norman conquest. The castle itself is constructed from the fossil-rich Upper Quarried Limestone (Wenlock Series), which breaks easily into blocks that are ideal for building. It was also used in the Priory (c1150). A wall on the northern side of The Broadway (A459), opposite the Earl of Dudley's statue, was pointed out at the end of our visit as a good example of Upper Quarried Limestone.



Court Passage Burgage Plot

Historically, the castle provided a centre from which the town grew with early coal and iron works helping to establish it as a major market town during the Middle Ages. Top Church originated around this time, initially as a timber framed structure, and it is reportedly dedicated to Thomas Beckett who fell foul of Henry II's knights in December 1170. The original church reportedly held a relic belonging to Thomas Beckett which made it a well known pilgrimage destination. The early timber frame structure was replaced with the existing stone church in the mid 1800s. The stone used is Tixall Sandstone from Staffordshire, which is early Triassic in age. ►

Along Court and Rutland Passages, there is more Medieval history. Both passages cut across numerous long thin plots with stone walls at 90° to the modern passages. These plots represent 'burgages' that date to around the 13th Century. They were used to hold livestock before going to market. The burgage plot wall we saw in Court Passage is constructed from Upper Silurian Gornal Grit from Sedgley, along with another larger wall in Court Passage and a part of the wall forming the Saracen's Head. These are all that remain of a monastery dating from the 12th century. Following the monastery's demise the stone was stolen to build other structures, such as the burgage plot walls.



Alley with Silurian Limestone Cobbles

As the town continued to develop, a new road system emerged that cut across the earlier land parcels defining the burgage plots. The early roads were paved with cobbles and lined with stone to prevent cart wheels riding up on to pedestrian areas. Early cobbles and kerb stones were made from the local Silurian Wenlock Limestone. In an unnamed alley on the opposite side of Priory Road to Court Passage, the way the

cobbles were laid reflects their use and an understanding for the character and properties of the rock. Along the edges where the cart wheels would run, the cobbles were laid parallel to the alley. In the middle they were laid crossways to enable horses to dig their hooves in, get a grip and pull themselves along when hauling carts along the slippery surface. Over time it was realised that these limestone cobbles are prone to wear and degradation. Later a harder tougher cobble in the form of Rowley Rag (dolerite) was used to replace the earlier limestone ones.

The Inhedge, between Wolverhampton Road and Top Church, is on the site of a former Medieval duelling field, which would have been much flatter than it is today. In the 1500s, tenant farmers mined the Thick Coal from beneath this area until the Earl of Dudley evicted them as he wanted the field for alternative uses. With the ground beneath Top Church being sacred, no mining was allowed in this area. One farmer who was incensed at having been evicted, set fire to and burnt out all the coal beneath the Inhedge but luckily this did not reach the church.

Around Stone Street Square

Through the 17th to 19th centuries, buildings and structures changed as more people and wealth came into the area. Around the starting place for our walk there is a rich mix of buildings and architecture. North of St James's Road stands the County Court Building (formerly the Brook Robinson Museum) and Dudley Town Hall. To the south is the former Dudley Museum and Art Gallery building complete with geologically themed, engraved windows. North of Stone Street stands the Saracen's Head pub, and to the south is Stone Street Square with the Old Glassworks building on its southern edge. The old museum building is constructed from large red bricks with little mortar between the brickwork, and terracotta, an easily moulded clay. Dating to around 1884, this building was constructed at a time when mortar was expensive, but bricks and terracotta were cheap. ►



Stone Street Square

Forming a large open space between the Saracen's Head pub and the Old Glasshouse building, Stone Street Square reflects much of Dudley's heritage. Formerly, the square was known as the Old Horse Pool due to its origins as a drinking and resting area for working horses. The pool was later filled in, and in 2011 a 100m diameter circular feature in Chinese granite paving stones was laid in the southern part of the square tracing the outline of the former Dudley Flint Glassworks. The feature has a central circle with several smaller circles surrounding it, representing the central furnace and melting pots within the former glass cone. Dating to the early-mid 1800s, this structure stood around 100 feet tall and dominated the landscape. It closed during the late 1800s and had been demolished by the end of the 19th century.

The old Glass House building is a much later, long, red brick structure with big red doors at one end. Today it is a bar and restaurant, but historically it was the former fire station. It was built in the late 1800s to fight against blazes resulting from the mix of timber frame buildings and newly introduced gas and electricity.

Like the Coroners Court (Brook Robinson Museum) and Town Hall complex (1925) and the Saracen's Head pub (1920s), the old fire station architecture reflects late 19th and early 20th century construction. In comparison with earlier brick structures, these buildings use less terracotta and smaller bricks with more mortar. Sandstone, usually Gornal Grit, is used around door and window frames. Such construction reflects a time when bricks had become more expensive and mortar was cheaper. Along Priory Street, the Old Court House dates to the late 1880s and is an example of a red brick structure faced in sandstone to make it look empowering.

Prior to 2011, Stone Street Square was a cobbled car park and has since been made into a space for people and public events. Many cobbles were preserved and made into a maze towards the square's northern end, showing another change in cobble technology through history. Where Silurian limestone cobbles didn't wear well, dolerite cobbles proved to polish and become slippery over time. Therefore a new stone was found to replace the dolerite in the form of a granite from Mount Sorrel in Leicestershire. The cobbles forming the maze show many different features that represent different melts and inclusions within those melts. Examples of where these cobbles have been used can be found elsewhere in the town.

Dudley High Street and Market Place

Dudley High Street and Market Place reflect more recent architectural styles dating from the 1960s onwards, when concrete, glass and metal have been the more popular construction materials. After the Second World War, a popular building stone due to its availability was Jurassic Portland Limestone from the Isle of Portland in Dorset. Particularly popular is the Whitbed limestone which is durable and relatively fine-grained with some fossil shell content. Various buildings around Dudley Town Centre exhibit Whitbed limestone as columns or, as with Barclay's Bank on the High Street, are faced with it. ►



The James Forsyth Fountain

Modern transport improvements have meant that building stones from around the world are readily available and often cheaper than local buildings stones. Along Upper High Street, many buildings survived being replaced with concrete during the 1970s and their upper stories have kept their art-deco look dating from the 1920s. Greater building stone choice and availability has resulted in using 'corporate' building stones to dress shop and building frontages at street level. Corporate stone is a term given to the material used to dress building frontages to identify them with a particular business. Along the High Street, we were introduced to many such corporate stones from numerous sources and ages showing various colours, textures and geological processes, which included:

Travertine or tufa (3Ma), from near Rome, Italy (MacDonald's)
 Brecciated marble (50Ma), the Alps (Nationwide Bank)
 Larvikite, syenite (292Ma to 298Ma), village of Larvik, Norway (Shipley's Amusements)
 Serpentinite (~50Ma), Greece (No. 3, Stone Street)
 Rustenburg Gabbro (~2 Ga), Bushveld Complex, South Africa (Tobacco, Vape and Drinks Emporium)
 Gabbro (unknown age and origin) and Dartmoor Granite (280 Ma), Cornwall (Wilkinsons)
 Cumberland and Borrowdale Volcanic slates, Ordovician (480 Ma), Lake District (HSBC Bank)
 Rapikivi 'Baltic Brown' granite (1.62 billion years), south-west Finland (Max Spielman)

In 2016, the Market Place on the High Street underwent major revamping and repaving works. Much paving was replaced with sandstone slabs, exhibiting Leisegang banding, ripples and cross bedding, from the Rajasthan region of India. Such slabs are commonly used for modern paving in urban areas.

The James Forsyth fountain standing proudly towards the market place's southern end was a gift to the town from Lady Dudley to provide clean drinking water. The fountain and its associated waterworks were restored in 2016 during the market place revamping works. The base is grey Rubislaw granite (~1,500 Ma) from Aberdeen that supports a plinth made from Finnish Balmoral Granite (2,500Ma) and carved Italian Carrara Marble (50 Ma). The main fountain and carved stonework above are Portland Stone, Whitbed (150 Ma). In plan the fountain has been specially designed to resemble the head parts of Dudley's most famous trilobite fossil - *Calymene blumenbachii*. South from the fountain the animal's body plan is defined using grey granite paving slabs.



The Earl of Dudley

During the repaving works, the foundations from a former row of houses, called Middle Row, was identified down the centre of the Market Place. A paving mosaic where the current market stalls stand depicts an archaeologist at work, commemorating these houses and the people who collect and record the historic information in the field. At the northern end of the market place stands a statue commemorating another famous Dudley legend - the footballer Duncan Edwards who was born on the Wren's Nest Priory Estate. Erected in 2016, the statue's pedestal is made from white, fossiliferous Hopton Wood Limestone from the Matlock area in Derbyshire.

Art sculptures with various geological connections and stories, put in place during the 2016 revamp, can be found around the town. A Dudley Time Trail leaflet has been produced using bronze plaques for people to follow, providing more information about the history, places and features to be seen along the way. ►

Our final stop, on the corner of Castle Street and The Broadway (A459), was at the statue commemorating William, Earl of Dudley, which was erected in 1888 and paid for by the local townspeople. Paving around the base is Indian Rajasthan sandstone and rough granite. Carrara Marble and Dartmoor granite form the plinth on which the statue stands. The statue itself is made from carved Portland Stone. As Graham pointed out, the statue contains the three representative rock types: sedimentary, metamorphic and igneous, from sources that include the Indian and European continents and Southern England. As the sun headed for the horizon, we finished the tour around 9.00 and headed off to a local hostelry for refreshment. I'm quite sure that no-one on the visit will see Dudley in quite the same light again and would like to thank Graham for another very interesting trip. ■

Andy Harrison

President of the Geologists' Association Graham Hickman - BCGS member

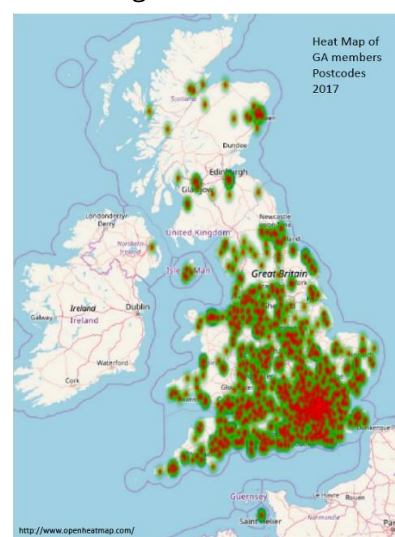
In May this year I was honoured to have been elected as President of the Geologists' Association (GA). I have served on the GA Council since 2017, in the post of GA UK Field Meeting Secretary and then last year as the Senior Vice President. I am excited by this position as I hope to use it to strengthen links between the different geology groups across the country. The post will last for two years.



The photo here shows me receiving the badge of office from the outgoing President, Dr Vanessa Banks. I am grateful that Vanessa stays on as the Senior Vice President for the coming year.

Many readers will be aware that the Black Country Geological Society (BCGS) is affiliated with the Geologists' Association. The GA is a large and long-standing organisation with origins dating back to 1858. While based in London, it aims to actively promote interest in geology across the country. The network of over 80 Local and Affiliated Geology Groups is important in achieving that mutual aim.

One of the benefits that the BCGS currently gains is the Public Liability Insurance Cover, which the GA organises on behalf of the participating geology groups. The GA negotiates with the broker, pays the premium and then recovers the premium costs which are allocated based on the size of individual group. However, there are several other benefits that Affiliated Groups can obtain from the GA but rarely do; advertising in the GA magazine and website, access to GA Regional Meeting Grants and specific project funding through the Curry fund. The GA also recognises the work of individuals and annually awards a number of medals, prizes and financial assistance. For example, back in 2013 the BCGS Chairman, Graham Worton, received the Halstead medal from the GA for his outstanding work promoting geology. ►



There are around 1,200 individual members who belong to the GA. In 2017, while organising field trips, I was curious to learn where they lived and used postcode data to produce the map shown here. While this shows a definite clustering in the south-east, there is also a good scattering across England and indeed the West Midlands. Individual GA members get additional benefits such as the professionally produced journal - the Proceedings of the Geologists' Association (PGA), a quarterly magazine, monthly lectures, field trips and discounts on GA guides. Many are also members of local geology groups as well as the regional GA group.

As the incoming GA President I hope to strengthen the links with societies like the BCGS and enhance the reputation of the GA being a friendly and inclusive organisation that welcomes everyone, regardless of their level of knowledge.

If you are interested in learning more about the GA take a look at the link below or drop me an email. I would be more than happy to discuss with you my experiences of being part of a regional geological association. <https://geologistsassociation.org.uk/> ■

Graham Hickman

Black Country UNESCO Global Geopark August update from our Chair, Graham Worton

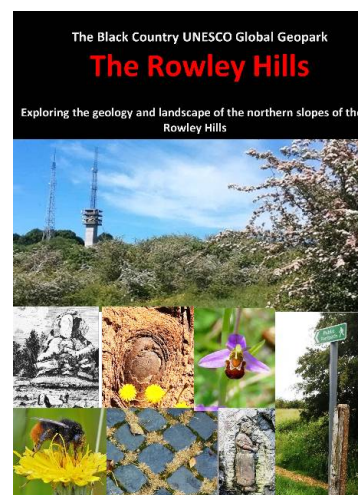
Between 14 and 16 June the Black Country hosted the UK UNESCO Global Geopark's Committee Meeting. This meeting is held over a few days for the UK Geoparks to talk about new initiatives and to meet aspiring Geopark applicants. These meetings all involve informal gatherings and field visits around the hosting Geopark, so we took the delegates to various Black Country sites including Dudley Museum at the Archives, the Singing Cavern and Dudley Canal Trust, where a formal reception was held (*see photo right*). We also visited the Bumble Hole & Warrens Hall LNR Geosite, Barr Beacon Geosite and West Park Wolverhampton. Political support was shown by all 4 Black Country mayors and mayor's consorts at the evening welcome event for representatives from all UK Geoparks, Associated National Organisations and aspiring Geopark teams.



The Geosites and Geotrails

At Bumble Hole Geosite the mining heritage and the canal networks were introduced, and the new accessible footpaths installed during 2021 were seen. A discussion about linking Geosites via the canal network and the idea of the long distance cycling and walking route 'The Black Country Geopark Way' were discussed with visitors. The Geopark is now working with the Friends of Bumble Hole to update geological displays in their visitor centre and is in the process of creating a new Geological Trail here too in time for the September Boating Festival event. In August the new Geological Trail leaflet produced with Friends of Rowley Hills community group will become available. The Friends secured funding through the community fund to create some new themed walks. The aim of these is to encourage local people to explore the hills and enjoy benefits to physical and mental health. Other ►

themed leaflets are planned, including trails of the ventilation shafts of the Netherton Tunnel below the hill (called the 'Rowley Pepperpots' trail) and a Rowley Hills wildlife trail is also in progress. BCGS via Graham has created the Rowley Hills geological leaflet with the friends' groups and funders. As soon as this is launched it will be shared with BCGS members. New UNESCO branded signage is being discussed for the geological exposures at the Rowley Portway Hill (Blue Rock Quarries) site.



The Geopark - embracing Transport, Art, and Industrial Heritage

On 15 May a number of the new Black Country Transport team members were shown around various Black Country Geosites to get the context of the transportation history, and the opportunities and challenges to future transport into and around the Geopark and its Geosites. This looked at existing transport options, transport interchanges and hubs, new walking and cycling opportunities. It was a great opportunity to talk about the larger scale transportation needs for the future and where new connections like those of the Midland Metro stations will occur.

Discussions have also been taking place with the midland 'ArtTrack: Metro Art' programme. The Geopark team have been providing information about the local geological, mining and industrial heritage to a number of artists pitching to install artworks at some of the 13 new stations on the Metro line between Wednesbury and Brierley Hill. An exhibition to show these and begin the public consultation stage was held on 15 July in Dudley's Churchill precinct which showcased ideas and draft designs of some of the artists' work to date.



Galton Valley Pumping Station

The Geopark team are involved in ongoing discussions with the Chances Heritage Trust in connection with the Galton Valley Geosite. This was a centre of glass innovation, providing high quality glass for the Crystal Palace and for most of the world's lighthouses during the nineteenth century. The Geopark team is hoping to assist and support their aspirations to re-open the historic site and also to engage with them on work at the Soho Foundry site further to the east of the

Geosite. Graham agreed to be a speaker at an online event for DigVentures called 'Made in Smethwick' which will be a series of online talks looking at the landscape and industrial heritage of the Galton Valley. Graham joined experts from the University of Birmingham and the Canal & River Trust to look at the topic 'Revival to Reuse' of the historic landscape and how the Geopark is helping to bring together multiple heritage assets of the Black Country into one larger landscape story, boosting the profile of the area and bringing numerous benefits to its people. This event took place on Tuesday 2 August.

Other Geopark Collaborations

The Wolverhampton historic environment team have been leading on a project to capture heritage site information for the Black Country for a new heritage listing. The Geopark team submitted details for all of the Geosites of the Geopark to be added to that listing. This will ensure their heritage value is considered whenever future development decisions are being made. ►



Barr Beacon

The Geopark's work includes the pressing subjects of climate change and nature recovery. One of the major environmental/conservation projects that we've been working on is called 'Purple Horizons'. This is spread across the northern fringe of the Black Country into Cannock Chase AONB and Sutton Park. It is a new national nature-recovery project which aims to re-establish a mixed mosaic of heathland habitats similar to those that existed naturally from the end of the last ice age (the

Devensian) and was the stable environment here for thousands of years. It recognises that successful rewilding of the landscape requires a deep holistic understanding of the geology, topography, climate and ecology. So as part of this we have carried out extensive rock-face and soil profile clearance at Barr Beacon and Shire Oak Quarry Geosites and installed 4 new interpretive signs linking the importance of geodiversity to habitats such as the rare habitats of the mining bee and wasp pollinators that are so important to food production in the area's farmland.

Another important project that the Geopark is supporting is called the iTree project. Our Geopark lead on this is Emma Forde (the UK Geoparks Forum's youth ambassador). It has involved a survey of 1000 green areas in the Black Country during the last year. It is based on an electronic system to monitor the state of play with trees and woodlands of the Black Country. Provisional survey results are imminent for this work and will provide a detailed baseline against which we can observe future change.

Spreading the Word!

One of the key recommendations of UNESCO assessors for all Geoparks is that you work to improve your 'visibility'. This is done in a host of ways including walks, talks, publications, films and signage. In particular, since becoming a UNESCO territory in July 2020 the Black Country team has been working on re-branding existing literature and signage. UNESCO itself went through a re-branding exercise in 2020/21 so there was a short wait whilst the new UNESCO logos were being agreed. This is now done and rebranding is beginning in the Geopark. The most exciting part of this is that teams have just agreed 10 new road signs for the Dudley borough, and Walsall borough is now looking to do the same. There is a lot more going on as usual and I'll try to provide another update for the next newsletter. ■

Graham Worton

Birmingham's Erratic Boulders: Heritage of the Ice Age **Introducing 'Boulders by Bike'**

The Erratic Boulders team are pleased to announce that the first of our two cycling trails is now ready and will be launched in Cannon Hill Park on Sunday 11 September. There will be a stall beside the Cannon Hill Park boulder from 10.00 - 3.00 (grid ref: SP 06560 83715, What3Words: miss.hint.solar). It's about half way along the east side of the boating lake. Here you will be able to find out more about the project and the heritage boulders of the Midlands. Leaflets will be available for all the trails completed so far, plus trail guides and much more. In the meantime, you can pre-view or download the leaflet from the project website here: <https://erraticsproject.org/trail-7/> ►

The main focus will be the launch of Glacial Boulder Trail 7, 'Boulders by Bike' - A cycle tour around South-West Birmingham. The leaflet will enable you to take a self-guided tour, and there will be a guided cycle ride for 10 cyclists on the 13.7mile (22km) trail starting from the iconic boulder. Registration is essential: <https://www.eventbrite.co.uk/e/boulders-by-bike-guided-cycle-ride-tickets-400698137917>

The project team and volunteers will also be at Rowheath Pavilion on Saturday 10 September, taking part in their Heritage Open Day, another opportunity to come and see what's going on - and perhaps enrol as a volunteer!

Since my last report our cycling volunteers have been busy testing various possible routes for Trail 7, one of which took them over the top of Frankley Hill (*see photo*). We soon learned that this route involved cycling on busy roads - and that cyclists don't like busy roads or hills! Though the chosen route doesn't involve Frankley Hill, the photo shows the enthusiasm of our volunteer trail testers.



*Volunteer trail testers on Frankley Hill
Photo courtesy of Janice Bridger*

At the Cotteridge 'Cocomad Festival' on 2 July, we launched Glacial Boulder Trail 2: 'The Louis Barrow Trail', Around Bournville and Cotteridge Park. Steeped in the history of the Cadbury Chocolate factory in Bournville, this trail owes its existence to the enthusiasm and dedication of one man: Louis Barrow, Cadbury's chief engineer during the early decades of the 20th century. The story is in the leaflet for this fascinating trail, with more detail on the project website: <https://erraticsproject.org/trail-2/> ■

For more information:

<https://erraticsproject.org/>

<https://www.twitter.com/erraticsproject>

<https://www.facebook.com/birminghamerratics>

<https://www.instagram.com/erraticsproject>

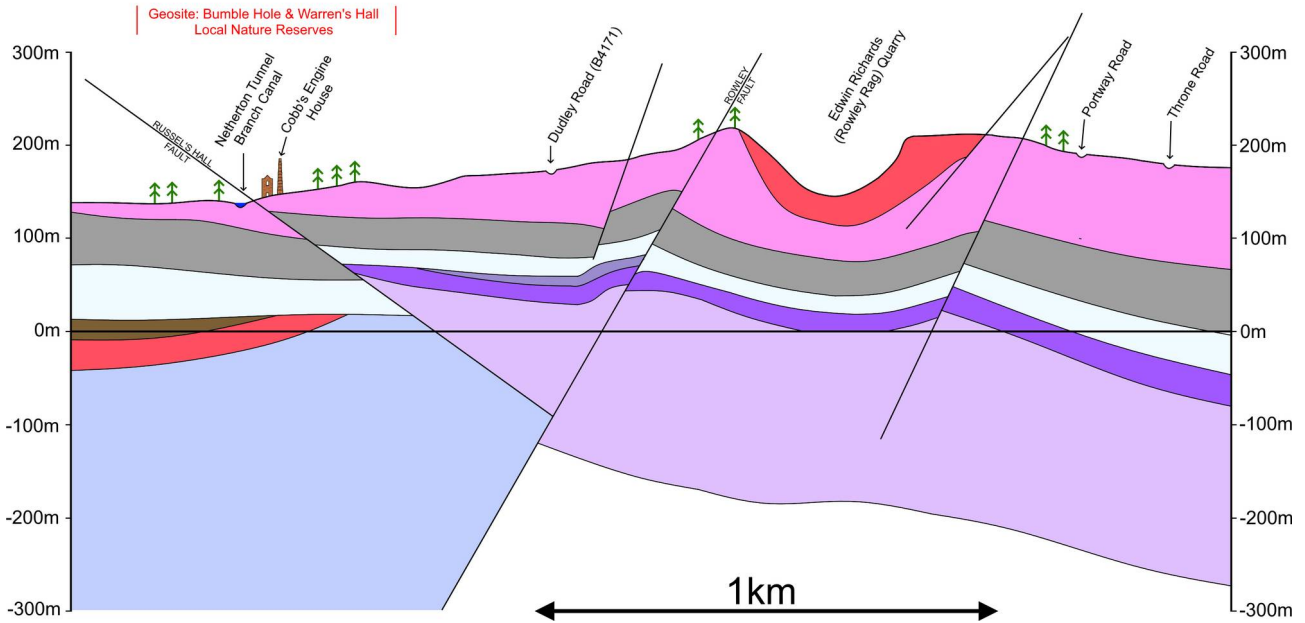
Julie Schroder (BCGS rep. on the Erratics Project steering group)

Matt's Maps No. 8

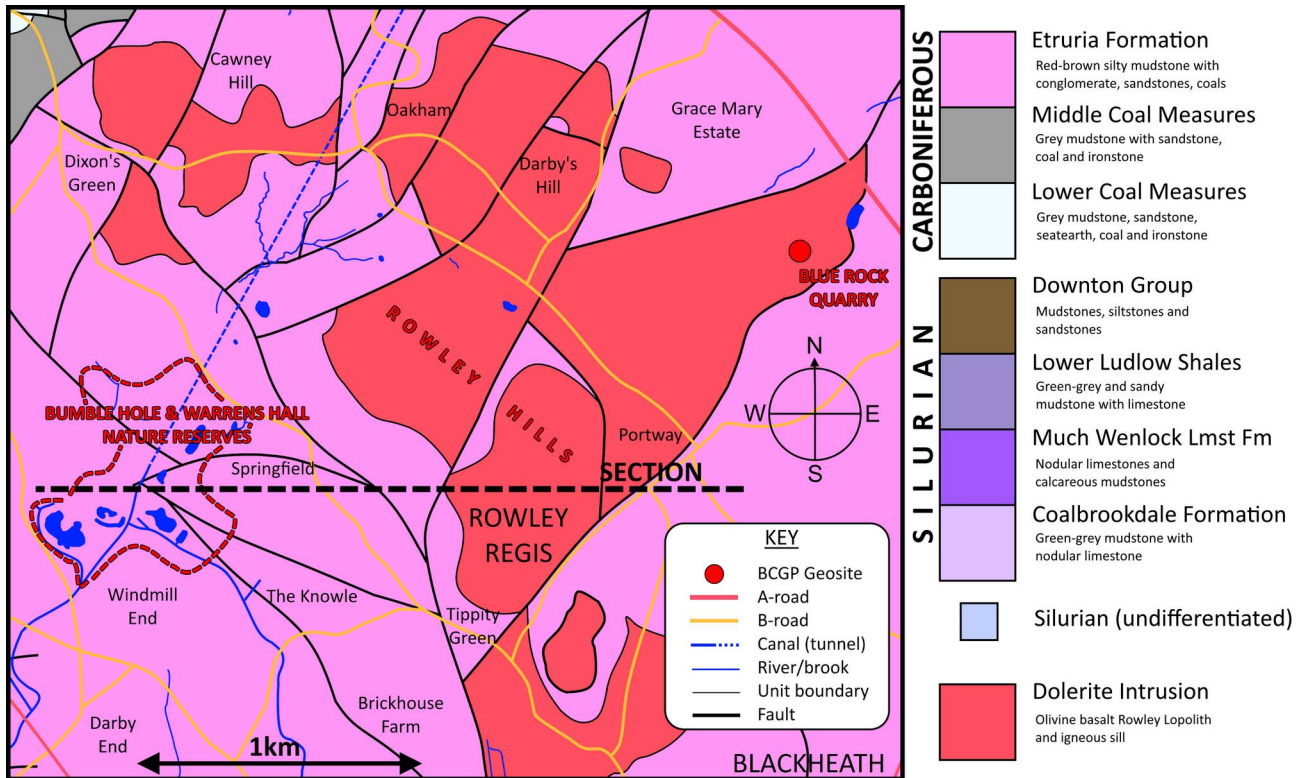
Bumble Hole & Warrens Hall Local Nature Reserve

On late 19th century Ordnance Survey maps, the Windmill End area is a complex smattering of canals, earthworks and collieries. Vast open areas are dedicated to industry, punctuated by smoggy villages whose inhabitants work the mines and factories. Transecting everything is the long gone Netherton & Halesowen branch of the Great Western Railway. As with so much of the Black Country, this area has an industrial legacy that spans centuries. Another feature this site has in common with so many others is how unrecognisable it now is compared to its late Victorian industrial apex. Post-war housing sprawls atop the old colliery land, and acres of former spoil and earthworks are now draped with woodland and greenery. Standing on this site today are Bumble Hole & Warrens Hall Nature Reserves. ►

SECTION 1



Bumble Hole is smaller and the lower of the two, marking the eastern boundary of Netherton. Warrens Hall occupies the broader green slope ascending upwards towards the village of Springfield (and ultimately Rowley Regis). Why exactly this contiguous area is considered to be two nature reserves remains somewhat elusive to me, but conveniently these reserves are amalgamated into a single Geosite of the Black Country UNESCO Geopark. In stark contrast to a century ago, this is now one of the best places locally to escape from the noise and bustle of modern life, to go for a walk, and to admire the expansive views towards Clent and the Malvern Hills. ►





A peaceful stretch of the Dudley No.2 Canal in Warrens Hall Nature Reserve

Geologically, the area shares much in common with the surrounding coalfield. A relatively thin cap of Etruria Marl, only a few tens of metres thick, covers the Carboniferous Middle Coal Measures. Dozens of pits were sunk around this site to access the abundant coal seams. The Etruria Marl thickens towards the north-east in this area which, combined with increasing elevation of the topography and the vertical movement of faults, leave the coal too deep underground to be easily reached in the adjacent Rowley Hills. The Marl itself also offered economic opportunities - its clay layers can be processed to make the blue bricks that were common in this area.

Whilst the railway and factories are now gone, the one conspicuous component of those departed industries remains: Cobb's Engine House, also known as Windmill End Pumping Station. Cobb's is the external shell that protected the machinery inside from the force of the elements. It was built in the 1830s and housed a Newcomen-type steam engine that ceaselessly transported water from the coal mines below into the nearby canals. Windmill End Colliery Number 3 pit, which was kept dry by this engine, was active from 1830 to 1925. Shortly thereafter, in one of the Bumble Hole's stranger historical footnotes, the steam engine was acquired by the American industrialist Henry Ford for the princely sum of £130 (roughly £7000 in 2022). Ford was obsessed with acquiring English Newcomen engines to occupy his vast museum of Americana and industrial history. (*See front cover photo for the dismantling and removal of the Newcomen Engine, c.1930.*) The engine has lived in his Detroit museum for the best part of a century, and it can still be visited today. If any readers happen to find themselves in Dearborn, Michigan, keep your eyes peeled for a small piece of Black Country history!

Following the cross section to the east, we enter the Rowley Hills and what I believe must be the largest extant hole in the Black Country. There can't be many other places in the UK where sprawling housing estates so closely surround an area of major mining activity. Rowley Rag, the dark crystalline remains of magma that intruded the Earth 300 million years ago, was extracted from the Rowley lopolith intrusion at this site (see the October 2021 Newsletter for more geological background on Rowley Rag). Perhaps mercifully for locals, the quarry stopped operating within the last decade and work is ongoing to gradually refill and restore the landscape to a more natural state.

It's tempting to look on the demise of the Black Country's extractive industries with sadness and nostalgia. Mining and quarrying, and the industries they generated, undeniably forged the Black Country identity, fuelled the industrial revolution and drove an increase in domestic wealth and ►



Cobb's Engine house and chimney today

living standards. We might also remember the costs of these industries too, not just in the human lives that were lost and shortened through hard labour, accidents and pollution; but also in the vast inequalities that emerged between the owners of the mines, forges and houses, and those whose work actually generated the improvements in living conditions that we now benefit from. The closure of Edwin Richard's quarry is the latest in a long line of post-industrial changes to the Black Country. But perhaps we can hold out hope that the ultimate outcome might be a healthier ecosystem, greater access to the land and its history, and a better environment for human beings to enjoy. ■

Matthew Sutton

References and further reading

Simon Briercliffe's excellent article further explores the interwoven connection of geography and history at this site: <https://uptheosroad.wordpress.com/2015/04/17/tekkin-the-wammel-up-the-cut-a-landscape-history/>

Image of Newcomen Engine removal from the Windmill End Pumping Station (Cobb's Engine House) is courtesy of the Henry Ford Archives, Dearborn.

A comprehensive history of Henry Ford's 1928 visit to the UK and his search for surviving Newcomen engines, including a description of the acquisition of the engine discussed in this text, is provided by this 2018 academic paper (it is, unfortunately, behind a paywall):

Perrett, D., 2018. Henry Ford's 1928 English Holiday Part 1-In Search of Newcomen Engines. The International Journal for the History of Engineering & Technology, 88(1), pp.37-56.
<https://www.tandfonline.com/doi/full/10.1080/17581206.2018.1463683>

A brief but well-researched history of Cobb's Engine House can be found here:
<https://industrialtour.co.uk/cobbs-engine-house-chimney/>

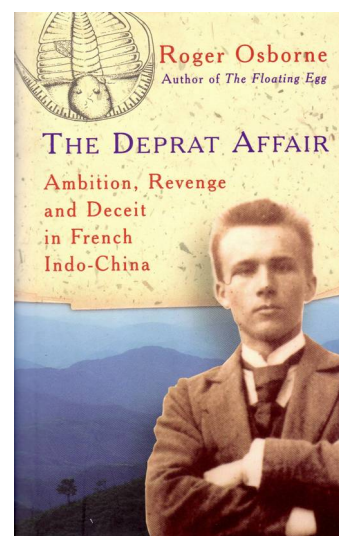
See also Newsletter 269, October 2021 for Andy's field visit report on Bumble Hole and Warrens Hall. Ed.

Mike's Musings No. 40: A Question of Trust - Part 2

In Part 1 (Newsletter 273, June 2022), I dwelt on some older examples of 'dubious activity' of one kind or another. I now examine another, completely unrelated, tale from the time of the Piltdown affair before recounting several more recent and contemporary cases.

The next tale germinated 'a million miles away' but at the same time as the world was being confounded by the discoveries at Piltdown. The action took place in far off French Indo-China, but was only brought to wider attention in 1999 by Roger Osborne (perhaps better known as the author of 'The Floating Egg', an account of the alum industry and other items concerning the geology of the Yorkshire coast, which may be familiar to some readers).

The principal player, and possible victim, was one **Jacques Deprat**, a rising star and Director of the 'Service Géologique de l'Indochine'. Between 1909 and 1917 he reorganised this department and mapped much of southern China and northern Vietnam, but in doing so appeared to have made enemies within the service by his haughty personality and somewhat disrespectful attitude towards authority - the seeds of his downfall had ►



Roger Osborne's book cover

been sown. In 1917 he stood accused of planting certain trilobite fossils amongst the many thousands used to support his geological mapping. If genuine, they would have suggested a continuous seaway extending from Europe to China, which would have been a major discovery at a time before the advent of plate tectonics; enough to raise his profile to even greater heights. It is therefore ironic that this very concept, of the Tethys ocean encircling the eastern hemisphere, is now widely regarded as well established!

Without detailing the ins and outs, or dwelling more on his accusers, the case against him concluded in 1920 with his being dismissed from the service, and thrown out of the French Geological Society, effectively denying him any further employment within geological circles. At the time it appears that opinion was divided over the question of Deprat's guilt, but the opinions which counted more belonged to those he had 'rubbed up the wrong way'.

To his great credit, his talents were such that he was able to carve out a new career as a novelist and alpinist under the new identity of Herbert Wild, publishing thirteen novels, including one which was a thinly veiled account giving his side of the story which brought him down, and his last which appeared to prophesy his own death in a climbing accident in the Pyrenees - a strange life (and death) story indeed!

But what of his downfall? The jury still seems to be out as to his guilt or innocence, but it is slightly strange that the particular trilobites over which much of the case against him rested have never been 're-discovered' at the sites he specified, despite much effort to do so. They are also suspiciously identical to material from Bohemia. Some have argued that they could have been spuriously added to the collections by a third party amongst his detractors, but this is difficult to sustain. He also apparently didn't help his own cause by withholding certain field notebooks from official scrutiny.

Unlike all previous cases, where the hand of deception is firmly established, the identity of that hand remains uncertain to this day. Whilst Deprat would seem to be the likeliest villain, his guilt does not seem as easy to argue as Dawson with Piltdown. There remains wriggle-room to establish the fact that, like Beringer, he was the unfortunate victim of other people's spite. A measure of doubt in his guilt may be seen in the fact that in 1991 the Geological Society of France revoked the decision of his expulsion, and a formal apology was even made later to his surviving daughter.

In the next unfortunate tale circumstances surrounding the similar but even more monstrous case of 'salting the collections', takes some beating. This concerns the substantial case against an Indian professor, **Vishwa Jit Gupta**, that has become the largest case of palaeontological fraud of all time, drawing in dozens of unwitting victims in the guise of his many co-authors, and running to over 100 cases of suspected falsification of fossil discoveries, documented in over 300 scientific publications, over a period of some 25 years through the late 1960s, 1970s and 1980s.

I remarked earlier (in part 1) that we live in more forensic times where such activity could be expected to be much easier to identify, but this case shows that the fundamental edifice of trust that underpins scientific investigation can still be taken advantage of - particularly when the subject matter is of a highly specialised nature and of little ►



Vishwa Jit Gupta

interest to the popular press. As with Deprat, the theatre of activity is far away (from British or European perspectives) and concerns falsification of fossils supposedly discovered in the Himalayas. However, it was the misappropriation of material from other sources that first raised suspicion by an Australian academic working in the same field.

His sharp eye began to notice that some of Gupta's fossils bore a remarkable resemblance to certain material that could be purchased from professional fossil dealers, notably some distinctive iron-rich ammonoids identical to material from Erfoud, Morocco. Further investigations revealed more cases of 'misplaced' fossils, including a unique conodont fauna from a particular quarry in New York State, an ostracod fauna similar to one from Oklahoma, illustrations of trilobites lifted from a 1951 monograph of trilobites from the Rocky Mountains, a similar misappropriation of photographs of particular corals originating from the collection of Carboniferous corals at Aberystwyth University (visited by Gupta many years before as a post-doctoral researcher, and given unfettered access to the collections), and... well, you get the general gist.



Tornoceras (goniatites) from Erfoud, Morocco: similar to those which first aroused suspicions of falsification

The accusation that Gupta was a serial fraudster, assigning 'foreign' material to areas he was mapping in the Himalayas was first formally made at a geological congress in Calgary in 1987. Initially the outfall only involved the 'cognoscenti', and publication was limited to relatively little known publications with small circulations. But in 1989 these activities were highlighted in the prestigious journal *Nature*, and soon the issue mushroomed. Some of Gupta's co-authors began to check their own 'histories' of involvement, and some rang further alarm bells, pointing to more misappropriated material including fish fossils almost certainly originating from China.

The difficulties that arise from Gupta's activities are manifold. It brings into question many of his conclusions about the age of the rocks he has described, as well as the environmental information they convey, both of which lead to complete misunderstanding of the geological history of the areas involved. One reason it took so long to uncover the fraud, quite apart from the issues of trust, was that it took time for the inconsistencies they created to become apparent. Despite Gupta's valiant attempts to counter the accusations, the general pattern of misinformation has now been accepted by most of the geological world, and all his journal articles are considered unsafe – a sad state of affairs for his many co-workers who are recognised as 'victims' rather than 'associates'.

The real scandal, if this were not enough, is that Gupta's University is one of the few institutions to disregard the accusations, and have singularly failed to censure him in any way; indeed he retired on normal terms in 2002 without any blemish upon his record. Meanwhile at the same institution, another of his accusers was conspicuously singled out for having promotion denied him, while 27 other 'unconnected' promotions went ahead. ►

Most of the cases so far have involved fossils, and lest you imagine palaeontologists alone are subject to such malpractice, I can offer one instance in which the realm of mineralogy was brought into disrepute. **Arthur Kingsbury**, a respected amateur collector, with an uncanny knack for finding the best material at any given location (overtones of Charles Dawson), took up a post as a research assistant in the mineralogy department at Oxford University. During the 1950s he built up his reputation as a leading expert on British minerals, second only in the minds of many to the great Sir Arthur Russell. Such kudos obviously went to his head, but wasn't enough for him. To be best, he began claiming to have discovered new minerals from British localities, getting fellow analysts to corroborate them, when all the while they were simply taken from foreign collections which came into his own possession.

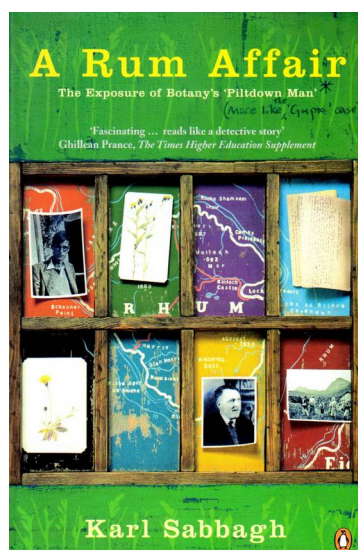
Nobody suspected a thing during his lifetime, but suspicions were roused after his death (in 1968) when his private collection and associated records, having been acquired by the British Museum of Natural History, were systematically re-examined in the 1980s. Eventually, so many of his records were found to have been deliberately given false attributions that his entire work had to be regarded as tainted since it was impossible to separate truth from fiction. Furthermore, lest you imagine that it is only the geological realm that has fallen prey to frauds such as those described, I will mention just a couple from other spheres that you may be interested to look up further for yourself - I'm sure the 'wonderful web' can provide details.

Another case involving the British Museum of Natural History concerns one **Colonel Richard Meinertzhagen**, a larger than life character who was an accredited expert and collector of wild birds (and lice!). He presented his extensive collections (of both!!) to the museum and was made an Honorary Associate in return. But, as with Kingsbury, earlier suspicions of misattribution were confirmed after his death. Many of his ornithological specimens turned out to have been 'purloined' under trust from museum collections, including the BMNH itself! The problem ever since has been to separate the bogus from the genuine.



Colonel Richard Meinertzhagen

Or take the case of **Professor J. W. Heslop Harrison**, the perpetrator of an extensive botanical fraud concerning the flora of the Hebridean island of



Karl Sabbagh's book cover

Rum, and described fully in paperback under the witty, if rather obvious, title of '**A Rum Affair**' by Karl Sabbagh, in which a litany of alien plant introductions on Rum during the 1930s and 1940s, to support Harrison's theory of pre-Ice Age plants surviving in Britain, was only exposed by the determined and expert sleuthing of a knowledgeable amateur.

Fortunately the vast majority of scientific practitioners 'observe the rules', and examples of fraud, deceit or simple pranks are few indeed. The motivation behind such behaviour is generally the same, personal aggrandisement, fame and/or glory. But, as we have seen, such behaviour often ends up achieving the exact opposite, infamy or notoriety, as it usually gets noticed. Eventually!

On the other hand... perhaps I could have made all this up! ■

Mike Allen