



Bedfordshire Geology Group

Grand Opening of Wall of Geology

Saturday May 4th

By Henrietta Flynn

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A rather changeable day weather-wise greeted the set-up team as they prepared for the official ribbon-cutting ceremony of the 'Wall of Geology' beside Clophill's Eco Lodges.

There was a good turn out of BGG members, Greensand Trust officials and volunteers, Clophill Heritage affiliates and the public. There were geological activities for children and a colourful display of rocks and fossils which engaged the adults in much discussion (besides exhibits of the best of the Woburn Sands).

Bev Fowlston opened the event with an introduction to the Earth Heritage of Greensand Country and work that BGG had done in building the Wall with support from the GCLP (Greensand County Landscape Partnership).

As this was GeoWeek, a national designated week to celebrate and recognise geology in the UK and also GCLP Festival week, it was appropriate to welcome Nick Pierpoint, President of the GA to cut the green ribbon around the wall and interpretation board. Nick applauded the efforts of BGG and praised our endeavours to make this site easy for the public to understand. He also acknowledged our hard work in making the Potton Scout Hut Quarry accessible to those less able.

Did you see this?

Outside the Eco Lodges at Clophill, on the footpath, a large boulder of Greensand sandstone came to our attention.....See picture below.....

Easy to dismiss but on closer inspection this boulder shows some magnificent fossil burrows in a honeycomb formation. We wondered who had found it and who owned it.

Talking to the cafe management, they told us it proudly belonged to the Ecolodges but they would happily lend it to us if we needed to show an impressive example of fossil burrows.

Thank you Ecolodges, we may take you up on your loan offer.



Nick Pierpoint cutting the ribbon assisted by Bev Fowlston

The 'Wall' shows a schematic of Bedfordshire geology, made from the 5 major rock types in our county. (From NW-SE; Jurassic limestones, Oxford Clay, Woburn Sands, Gault clay and Chalk. These were inlaid into the reconstructed wall which used some fine examples of the reddish-brown Greensand. The interpretation board explained the geology of the wall and surrounding views in text and map formats.

Behind the wall sits the beautiful 11th century Old St Mary's church, now a ruin but with its outer walls restored. It now stands proudly on the hilltop surrounded by its old cemetery. The old tower has also been restored and provided an extra excursion for the fit. It was worth climbing the narrow staircase for the magnificent views. In the grounds a giant rock lizard has been made from leftover sandstone rubble by Rory, one of the apprentices from Clophill Heritage Trust.

As is typical of any May Bank Holiday weekend, we had 4 seasons in 4 hours including a pelt of hailstones! Thankfully most of us managed to retreat to the EcoLodge café for much needed refreshments, apart from those unlucky ones left sheltering under the trees!

The BGG would like to express our thanks to Tarmac who sponsored the construction of the wall, the builders, the GCLP, the Ecolodge staff, Greensand volunteers and the Heritage Lottery Fund who funded the interpretation board.

Women in Geology Conference at the Geol. Soc.

By Glynda Easterbrook

On the 21st May, Bev Fowlston and I attended a conference at Burlington House in London, arranged to celebrate the Centenary of First Female Fellows of the Geological Society.

I presented a paper about Professor Janet Watson, the first female President of the Society, she having been the supervisor of my 3rd year undergraduate mapping project when I was a geology student at Imperial College in the early 1970s.

A total of 16 papers were presented, featuring the fascinating stories of early female geologists, some well-known, others less so, and their history and influence within the wider geological community. Robbie Gries, the keynote speaker from the USA, gave a fascinating talk entitled “World War 1 through Affirmation Action – women in Petroleum Geology Make a Difference”.

A number of posters on related topics were also on display during the day. The conference had a good attendance and the subjects very well received.

A celebratory dinner followed in the evening, together with an appropriately decorated 100th birthday cake! Approval has been given to publish the proceedings in a Special Publication of the Geological Society which is expected to follow sometime in 2020.



Above: A collection of female Geologists; Glynda second from right.

Below: The magnificent 100th birthday cake.



Educational talks

Bev Fowlston gave a presentation to Flitwick U3A at the Rufus Centre where there were about 200 people. The audience enjoyed a PowerPoint presentation on “An Introduction to Bedfordshire’s Geology” and a display of rock specimens from Bedfordshire. The new geotrail leaflets were well received and we ran out of them on the day.

This presentation will be given to The Geologists’ Association’s Home Counties North Regional Group on 13th November at Husborne Crawley Reading Rooms, please look out for the flyer in due course.

Bev also gave a talk to the Potton Scout Troop about installing the access ramp on their site, and telling the story of the Woburn Sands and the importance of Greensand Country.

Potton Scout Hut Quarry Opening Ceremony *by Bev Fowlson*

On 23rd March BGG held the Grand Opening of the newly constructed accessible ramp with handrails that will allow visitors with limited mobility to access the geology of Bedfordshire. On the day we had many visitors and our VIP was Simon Daize. Simon used to work for the Disability Resource Centre and acted as a consultant prior to the work being carried out.

Many stall holders supported us on the day: Potton History Society, Rockwatch from The Geologists'



Association, Greensand Country Landscape Partnership and Bedfordshire Rural Communities Charity Community Transport.

After a short presentation at the ramp Simon and Bev Fowlston cut the ribbon to a round of applause. There followed tea and biscuits and inspections of the stalls by visitors from the local area and further afield.

Again, our thanks go to the many grant givers and donors who have helped us complete this unique visitor experience: Tesco Bags for Help, Postcode Local Trust, Bedfordshire Luton

Community Foundation together with London Luton Airport Operations Limited, Potton Town Council plus many others.

Greensand Country Landscape Partnership Update



By Bev Fowlston, BGG's GCLP manager

We are almost at the end of the Delivery Phase of this four-year project funded by the Heritage Lottery Fund and have completed even more in the last few months since the previous newsletter:

- ◆ Installed a tactile board for the visually-impaired visitors to our educational site at LGS Scout Hut Quarry in Potton
- ◆ Delivered a talk to a U3A group and a presentation to a local cub scout group, increasing geological education in the county

- ✦ Installed an interpretation board at the Wall of Geology explaining the local geology of Bedfordshire as it crosses the centre of Greensand Country at Clophill
- ✦ Started the draft for the last of the three geotrails. This one is based around Rushmere Country Park and Gt Brickhill and includes the Jurassic clays that flank the edge of Greensand country.

With just over one year left on the project we still have a few things left to complete:

- ✦ Western Geotrail leaflet (scheduled for completion Dec 2019).
- ✦ Site clearance of Dick Turpin's hideaway at Rushmere Country Park (scheduled for completion end of Summer 2019).
- ✦ Waymarking of geotrails (scheduled for completion Dec 2020).

Looking to the legacy of this project, we need to continue to use the geotrails and sites for their educational and heritage interest through guided walks and site clearances. We need to keep the geology of Greensand Country alive for future generations so they too can understand the importance of the rocks beneath their feet.

The Greensand Country Festival took place throughout May and was hugely successful across Greensand Country. BGG hosted three events:-

1. *May 4th. The wall of Geology opening (front page)*
2. *May 8th, Guided walk on the Eastern Greensand at the RSPB lodge (cancelled due to bad weather)*
3. *May 29th, The launch of the Central Geotrail*

Our third event launching the new Central Geotrail was held at The George Inn in Maulden. We had a promotional stand and Derek Turner led two shortened walks of part of the new Central Geotrail. There were many walkers for the afternoon walk but only two for the morning – maybe it was too early in the day for some!

This Central Geotrail, along with the Eastern Geotrail is now available on our website information page <http://www.bedfordshiregeologygroup.org.uk/information.html>



A future project for BGG?

By Malcolm Oliver

Just across the border in Wing, Buckinghamshire lies the church of All Saints'. The building has substantial elements built in the 7th Century and clearly has had a number of building stages since. Interestingly, each stage seems to be reflected in a different geological assemblage including Totterhoe Clunch, Jurassic fossiliferous sandstones and Greensand and flint cobbles. Some years ago, BGG looked at working with archaeologists to identify the different stages of development and learn more of how the church evolved – other projects took our efforts though.

Like so many local buildings the stonework is now in a poor state with the actions of water and frost picking out the weaknesses in the rock used. A project to restore the tower is being considered as there is danger from lumps just falling off. Apparently, many believe that the church originally had some form of render coating and that it was the Victorians who stripped it off to expose the beautiful stonework beneath. A solution might be to cover it all up again.

One of the questions is why the different stages had different stone used. Anne Williams has already identified from BGS and other publications that, in an area where durable natural stone



suitable for building purposes is generally scarce, people used the ferruginous 'carstone' from the Woburn Sands, 'Portland Stone' from the outcrops around Stewkley (just 3 miles away) and Totterhoe Stone from the Lower Chalk, quarried from adits in the steep slopes near Totterhoe that BGG has visited.

The BGS records that limited amounts of erratic material from the glacial sands and gravels has also been incorporated in some older buildings and the presence of such deposits around Wing is mentioned, with cobbles and boulders mainly of flint and chalk, but notable proportions of 'Bunter' quartzite pebbles, Carboniferous limestones and sandstones, Jurassic cementstone nodules, limestones and thick-shelled fossils and Cretaceous 'carstone' also used with igneous rocks found more rarely. Additionally, a limited amount of pale, shelly, marly limestone has been worked from the Portland Formation where it is seen in some old farm buildings and walls which came from a formerly worked in a quarry at Warren Farm, just south of Stewkley so not a million miles away. Limestone from the basal part of the Portland Formation was also repeatedly dug from two small pits near Old Park Farm, Wing – just down the hill from the church.

Work on the geology of the church might unlock some of the wider quarrying history of the area. There is a story to unpick and tell. So, is BGG interested?? Let the committee know what you think.



Apologies if labels are too small
to read or not clear

Thanks Malcolm, definitely worth a visit



The John Catt Symposium Field Trip

Sunday July 14th

by Anne Williams

This took place following the Symposium on 13th July organised by Hertfordshire Geological Society and Hertfordshire Natural History Society to commemorate Professor John Catt who died in 2017.

We met at The Gateway Centre on Dunstable Downs, with a good turnout despite the array of sporting events on offer - Wimbledon men's final, Cricket world cup and the Grand Prix. Haydon Bailey led the walk along the ridge to Five Knolls, explaining the Chalk stratigraphy and geomorphology, including how the Anglian ice-sheet helped create the gaps through the Chalk scarp now used by major transport routes and how the presence of fault lines in the bedrock allowed ice to penetrate the scarp face.

Archaeologist Stuart Bryant described the significance of the Five Knolls barrows. It is thought that they were initially used as burial grounds for Kings or Chiefs, although excavations in 1850 revealed no treasure to support this. Lying on the edge of the Downs, this Scheduled Ancient Monument is the only such site known in Bedfordshire. Later burials (usually cremations) were dug into the outside of the original mounds. First noted

by William Stukely in the 18th century, the burial mounds were excavated in the 1850s and 1920s, revealing that they originated in the late Neolithic and Bronze Ages and were re-used for burial in the Roman period.



After lunch at The Gateway Centre we walked into Kensworth Nature Reserve noting the location of the underground pipeline which takes the chalk slurry from Kensworth to the cement works at Rugby.

The BGG had cleared the exposure at Kensworth Nature Reserve in June in preparation for this visit, but since then there had been some sheetwash and a small rock fall. Dr Bailey was still able to unravel the mysteries of the site, important for the location of the Chalk Rock Complex and its glauconitic hardgrounds and wider correlation of the Chalk stratigraphy. Archaeologist Bernard Jones had his eye on the wonderful flints lying around to practice his flint-knapping skills. Not easy to carry out!

There followed a walk around the edge of part of the main quarry, the largest chalk quarry in Europe, to observe slight variations in the dip, a possible anticline, and the significant solution pipes infilled with rust-coloured clay-with-flints.

Altogether a very informative and satisfying day, so thank you to all the leaders from Hertfordshire.

The enigma that is Ravensburgh

April 7th

By Derek Turner

They say that two heads are better than one and the same applied when two organisations and 20 of their members got together in April. BGG and North Herts Archaeology Society (NHAS) shared their expertise on the hills above Hexton, just over the Hertfordshire boundary, to see how Iron Age folk had made use of a unique hilltop site.

There are many so-called 'Hillforts' spaced a few miles apart along the Chilterns, each apparently a special place serving the community. Modern boundaries mean that only one exists in Bedfordshire, namely Maiden Bower northwest of Dunstable, and this has been partly quarried away. At Hexton, the remains of Ravensburgh Castle that we visited are largely intact.

To reach the site, our group had to climb up the 60m high chalk scarp- some of them more nimbly than others! At Hexton, several textbook examples exist of steep-sided dry valleys, formed under periglacial conditions towards the end of the Ice Age when powerful springs undermined the chalk and cut V-profiled valleys back into the hillside, which in this area are called 'Holes'. Despite the extensive tree-cover today, we were able to see how Church, Claypit and Fairy Holes have isolated part of the plateau where the earthworks of the Castle stand.

The steep slopes surrounding the site are reinforced with chalk banks and ditches. It has been assumed that it was built as a defensible refuge where you and your livestock could shelter when under threat. However, Gil Burleigh of NHAS explained that archaeological work on this and other hillforts gives little support to this theory, with only occasional burials found within them and little evidence of battle injuries on the skeletons.



Over there! Derek Turner points to the approach entrance at Ravensburgh (Photo supplied by Kris Lockyear)

The presence of pits used for food storage has suggested early market trading, but evidence for this is limited. Instead, many investigators now think they were meeting places where families congregated for special ceremonies and feasting to cement their heritage. Whatever their purpose and however much they were helped by the geomorphology of the site, it's clear that many people invested a great deal of hard work to construct hill forts like this.

Before leaving the area, we inspected Burwell Springs which must have provided a supply of water to Ravensburgh. With the top of the aquifer at least 10m lower now than in the past, the water flows sedately these days, appearing where Claypit and Fairy Holes meet. It's easy to imagine much more powerful springs emanating thousands of years ago, washing soil and chalk downstream and leaving the head deposits that the geology map shows trailing down towards Hexton village.



The steep banks of Claypit Hole drop away steeply to the left of the lower bank (Photo supplied by Bernard Jones)



‘Delving into Heritage’ GCLP Conference 2019

July 16th

By Anne Williams

This year's Greensand Country Landscape Partnership (GCLP) conference was on the theme of Monastic Heritage in Greensand Country, held in the elegant surroundings of the Sculpture Gallery at Woburn Abbey.

Our own Bev Fowlston gave an excellent talk on 'Exploring Greensand Country Geology', followed by Brian Kerr's 'Gaining God's Approval and Making a Profit: Monastic Farming on the Greensand Ridge' which posed the interesting question as to whether land was given to the monasteries because it was 'wasteland', given the poorer soil on much of the ridge due to the underlying geology.

Richard Hoggett was the inspiring keynote speaker on 'The Archaeology of Medieval Monasteries'. He was followed throughout the day by excellent talks from volunteers passionate about their own researches into monasteries on the Greensand Ridge – Warden Abbey ('400 Years on the Greensand Ridge') and Chicksands Priory ('Monastery, Mansion and Military Base') – and finally by our hosts, Woburn Abbey ('Cistercian Abbey to 21st Century Stately Home'). Other related religious houses existed on the ridge, so that now it has more open parkland than anywhere else in the country.

All had displays of their activities in the Sculpture Gallery and we of course had lots of rocks and drew a lot of interest, even new members. Lunch was eaten in the glorious Sculpture Gallery Gardens with optional tours by the Senior Gardeners (meeting on the dance floor!).



Derek manning the stand

Thank you to Derek Turner (manning and dismantling the BGG stall) and Bev Fowlston for her talk on why all the rest is there!



Where is this ?

Photo sent in by Malcolm Oliver.

Answer on last page.

Do you have a photo from a geologically notable place, that readers would recognise? If so, please send to the editor and we'll take a guess!

BGG 2019 Events

- **Saturday 17th August.** We are hosting a day with members of the Reading Geological Society to introduce them to the Woburn Sands with a walk along our Eastern Geotrail, including the RSPB site. Join us at Potton Scout Hut, Sutton Road, Potton SG19 2DS at 10.30am. We will lunch at The Rising Sun in Potton and finish at about 4.00pm.
- **Tuesday 24th September.** Greensand rock face clearance at 'Dick Turpin's hideaway' on the GCLP Western geotrail near Rammamere Farm. We may get Greensand Trust volunteers to lend a hand.
- **Saturday 12th October.** 'Livelihoods of the Chalk.' Join us for a leisurely walk along footpaths and gentle hills to discover the history of the chalk and its uses through time, a walk based on our leaflet 'Livelihoods of the Chalk'. Meet at 10.30am at Stanbridge Road, Leighton Buzzard, LU7 9JG, SP 9700822994, parking along the road.
- **Saturday 9th November.** 'Rock Around Clophill'. A morning walk for BNHS members. Derek Turner will lead a 2-mile walk around Clophill with a geological interest. Meet 10.30am at junction of Readshill and Back St. MK45 4AG. Refreshments after in pub.
- **Wednesday 13th November.** at 6.30pm. A talk to The Geological Society given by Bev Fowlston on the 'Geology of Bedfordshire' at Husborne Crawley Reading Rooms.
- **Thursday 5th December.** Proposed date for Xmas Social at Husborne Crawley Reading Room. MK43 0XB. From 7.30pm

Please note that this years AGM will be held later in the year as many committee members are on holiday in September. Date, time and place yet to be decided.

You will receive a flyer on each event nearer the time with exact details so keep watching your emails and check our website. www.bedfordshiregeologygroup.org.uk

Please let a committee member know of any events you'd like us to organise. Suggestions for 2020:

- Outing to Wing Church (see article on page 6),
- Talk by Haydon Bailey on the HS2 route; geology & engineering
- Day out at Grimes Quarry – (an out of county excursion)
- Visit to Coombs Quarry – (BGG to ask Jill Eyers from Bucks Geology to lead)
- Visit Podington waterfall and the oolitic limestone
- Broom Quarry visit
- Visit to Oxford University Museum of Natural History

Help us to identify this object.....

A rather strange specimen came into the Higgins Museum for identification from a girl called Lola. It has foxed those who have seen it. Is it a fossil? Is it a rock? If you can help us, please take a look at these pictures and give us your suggestions.



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Recognise those cliffs on page 9? Answer from Malcolm.....

The famous red and white striped cliffs at Hunstanton in Norfolk, UK, are an eye-catching attraction. Why are the cliffs striped? The stripes in the cliffs are caused by layers of different-coloured rock. The main layers are:

- Carrstone. This is the brown layer (just visible in base of pic) and consists of sandstone - sand cemented together by iron oxide (rust). In places where the cement is stronger, the rock is darker and less crumbly. There are no fossils in this layer apart from a little fossilised wood.
- Chalk. The red and white chalk is made of limestone. The colour of the red chalk is due to iron staining.

Recent publications featuring BGG or other local sites of interest:

Magazine of the Geologist's Association, vol 18, no2, June 2019 - Article on BGG's Official Opening of Potton Scout Hut quarry.

Earth Heritage, issue 51 - Article on College Lake, Nr Tring about Quaternary Ice age geology & involutions.

Newsletter compiled and edited by Henrietta Flynn.
If you wish to include an article, photo or share your geological interest in the next issue, please contact me by email at henriettaflynn@btinternet.com

Hope you enjoy the read!

Please look at our website for news of walks, talks and events. It's easy to download flyers & geotrails.

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