

Newsletter

Full steam ahead with GCLP project

By Bev Fowlston

A lot has happened since the last newsletter, we have completed some of the outputs we agreed in our bid for this substantial (for us!) Heritage Lottery Fund.

Firstly the new Eastern Geotrail has been printed and was launched at the Greensand Country Festival event we held at the RSPB back in May. Secondly the wheelchair access ramp at Potton Scout Hut has finally been installed with funding of £2,039 from London Luton Airport Operations Ltd via the Bedfordshire & Luton Community Foundation, as well as £1,000 from Tesco's Bags of Help Scheme. If you know of any groups or individuals that would like to make use of this great educational facility at Potton then let me (Bev Fowlston) know in the usual way.

The Eastern Geotrail, the first of these significant outputs has been achieved through the hard work and dedication of a few members, namely Tony and Janet Baker for their long walks in establishing the route and the input from Martin Leggett, Anne Williams, Henrietta Flynn and Derek Turner for their feedback on the wording and images.

Finally, in launching the leaflet at the Festival, thanks must go to those who helped on the day, Tony and Janet Baker and Emma Fowlston along with Michael Taylor from Bedfordshire Rural Communities Charity **(cont page 2)**.



One of the walking groups during the Greensand Country Festival in May



A special thanks to Bev for all her hard work in making this project happen

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BGG members at the Greensand Country Festival

Continued.....Next steps for the GCLP project

Work is continuing on the new General booklet, it is currently in its first draft stage. We have agreed most of the text with our funders, Geologists' Association's Curry Fund, and it will be going to final draft during July.

The Central Geotrail is also under development in the Maulden area but we've encountered some problems along the way. *Find out more on page 6.*

The WALL of GEOLOGY takes shape *"Have we got enough stone?" By Derek Turner*

*Derek Turner laying out the rocks for the
Wall of Geology*



A second workshop on The Wall of Geology will be held in the Autumn. If you can help in any way, then please let Bev Fowlston know.

"Have we got enough stone?" That was the question that three members of the committee were trying to answer in June when they gathered together materials for the Wall of Geology.

The Wall is one of the projects we are contributing to the Greensand Country Landscape Partnership and it will be installed in the rebuilt churchyard wall at Clophill Old Church. With bricks also representing the Oxford and Gault Clays, the Wall of Geology will include examples from the strata that underlie Bedfordshire.

It looks as though we have now assembled enough material for the construction. This includes Jurassic limestone, a variety of bricks, Woburn Sands and having just received a quantity of Chalk and flint from Kensworth, courtesy of Jan Munro, we can soon start the build.

We hope that members will be able to take part when the wall is built, probably on Saturday 11 August (subject to confirmation). Please let Bev know if you're interested in this.

Thanks very much to everyone who has made contributions of materials and to Tarmac Limited Landfill Community Fund who have awarded us up to £4,785 and to the Heritage Lottery Fund whose generous funding will include £478 towards the Wall.

*Thanks Bev & Derek for keeping us up to date
on developments.*

Walk & lunch in Clophill

Did you forget the 'Summer Social'?

Those that remembered enjoyed a sunny walk around the little village of Clophill to examine the use of Greensand as a building stone, led by Derek Turner. His knowledge ensured an interesting stroll in the sweltering heat as he pointed out noteworthy walls and houses. We visited part of an old quarry which showed well defined cross bedding and structures. (See photo). Unfortunately all the exposures were found in private gardens so there was no touching!



Relief from the heat came with a visit to The Stone Jug pub in Back Street, where our thirsts were quenched courtesy of BGG funds. Thank you! A delicious lunch followed with good social time. Then a speedy exit by all to get home to watch the football!

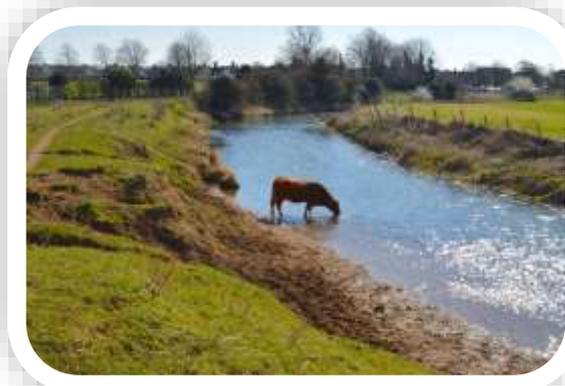
Bedfordshire's largest common BGG walk along the Ivel Valley

By Derek Turner

BGG members enjoyed an early dose of fine weather on Biggleswade Common at the end of April. Bedfordshire's largest Common is a cattle-grazed riverside pasture occupying the flood plain of the River Ivel. A substantial embankment testifies to dredging of the channel over a long period and is a reminder that the river was canalised below Biggleswade in 1758 and upstream on the Flit tributary as far as Shefford from 1823.

We passed the site of the Biggleswade North lock in a cut-off across the neck of a meander. All traces of it have vanished since the navigation fell out of use in 1876 after the nearby railway had stolen its trade.

Cattle use some of the deposited gravel 'beaches' to drink from the river. (See Photo). As we approached the northern part of the Common, the trees of the RSPB estate began to rise overhead and reminded us that the valley used by the Ivel cuts through the Greensand Ridge. The valley has been here a long while, having been used earlier on by a tributary of the pre-glacial Thames that flowed southwards in the opposite direction before the ice changed everything.



Bedpop Science Labs, 10th March

By Anne Williams

Following the success of **Bedpop Fun Palaces at The Higgins museum** (see our Winter 2017 newsletter), we repeated the exercise on 10th March with 'Bedpop Science Labs'. There were eight amazing science labs for parents and children to explore all over Bedford as part of British Science Week, bringing science, tech, engineering and maths (you may have heard of STEM subjects) into the heart of the town.

These were hands-on and free, including one I unfortunately had to miss, 'The Alchemy of Ice Cream'. Among the exciting workshops, experiments and demos in The Higgins we had a pitch in the Settlement Gallery with a large selection of minerals, rocks and fossils, including a giant mammoth tooth, for handling and discussion with our experts.

Thanks go to Jean Griffiths, Jack Kirby, Mike Bird, Jenny Zed and Glynda Easterbrook for their help and erudition, and to the large number of enthusiastic children who were keen to get their hands on actual specimens and often knew more about them than we did. The day closed with the tour of Tango the large and rather alarming T. rex and exploding sweets in the courtyard.



Glynda Easterbrook, Jenny Zed and Mike Bird in action

Workshop for Queen's Park Academy 18th March

We had a request from QPA and the Education team at The Higgins to provide a workshop on Geology related to key Stage 2 of the National Curriculum. About 90 pupils, the whole of Years 3 and 4 (that is 7 to 8 years old) had walked with their teachers from Queen's Park to the museum along the river path – and they returned the same way at the end of the day! Well done.

The children came to us in four groups throughout the day. Jean and I had set out separate tables with samples of the rocks of Bedfordshire, with hand lenses, water bottles, big pins to scratch with and simple instructions to try to identify the rocks from their properties. It is amazing how much mess a few children can make with these and a piece of Lower Greensand or Oxford Clay. I held onto the acid bottle to demonstrate fizzing of limestones. We also placed lots of fossils from the handling collection on other tables to handle when they had finished their tasks. In the discussion at the end it was very interesting to see how many children had family (grandfathers and great grandfathers of course) who had worked at the Stewart-by brickworks.

Biddenham Gravel Pit clearance, March 14th

by Anne Williams

This is a Site of Special Scientific Interest because of its former archaeological importance and now for its geological interest as a rare exposure (apart from working gravel pits) of the Ouse Valley Formation's top terrace.



It is a very small site in the middle of Deep Spinney housing estate built and becomes rapidly overgrown with vegetation as well as offering opportunities for fly-tipping.

This remnant of the once much larger quarry is being managed by the Wildlife Trust and the parish council and now has a volunteer warden who lives nearby and has been liaising with the BGG and other relevant parties as well as the residents of Deep Spinney to agree a management plan and see that the area is properly maintained.

Thank you to Tony Baker who met up with the new warden and with Andy Fleckney of the BCN Wildlife Trust to hammer out the details.

I attended an open meeting of Biddenham Parish Council on 11th March to report on progress with this and to answer any concerns, but everyone seemed happy with the arrangements we had made.



The Wildlife Trust has been clearing vegetation for us and the BGG did a clearance of the face on 14th March, although I had to penetrate a jungle again on a visit today. This is an ongoing task - but worth it for the geological interest of the glacio-fluvial gravel, an assemblage of rocks from far and wide brought by the Anglian ice-sheet and meltwater flow.

Stevington walk event, 16th June

By Anne Williams

This walk round the North Bedfordshire village of Stevington took in the parish church of St. Mary the Virgin built of the local Great Oolite limestone on its impressive river cliff overlooking the floodplain of the Gt. Ouse, and the Holy Well which issues from the foot of the cliff.

This groundwater spring never dries up and is a constant 11 degrees, and the water is said to be good for bathing the eyes. The area around fed by the spring is very boggy, supporting a large community of butterbur and other marsh plants. The attractive older buildings of the village are built of the same limestone, including the windmill, still with its sails, but we were unable to have the key to go inside as it is undergoing remedial work with a view to its reinstatement as a working mill. The village recently had an Open Gardens Day on 1st July to show the best of its gardens.

Preparing the Central GCLP Geotrail at Maulden

Sunday May 13th

By Derek Turner & Henrietta Flynn



Our walking team leaving St Mary the Virgin church in Maulden

Preparations for the Central Geotrail continue and we found a promising route based on Maulden in a 'desktop study'. Before checking it on the ground, we heard that one of the public footpaths that we intended to use had been closed due to a spill of cattle slurry and that it would take quite a while before it would reopen. Undaunted, we took another look at the map and realised that another path and an extra 400m of walking along a minor road provided a viable diversion.

A group of eight members set off from Maulden church in June to check the revised route. of about 5km (3 miles). Heading into farmland north of the village, we passed a disused quarry which contained a promising exposure of the greensand bedrock. It was partially obscured by vegetation and weathered material but we thought that clearing this might make a fine task for members later on. Further along the walk, we passed over a stream containing glacial detritus and noticed ploughed fields scattered with glacial deposits. Approaching the top of the Greensand Ridge, we had terrific panoramic views over Maulden of the Chilterns towards Sundon Hills, the water tower at Pulloxhill and in the other direction, the trees of Kings Wood. Returning to Maulden we passed a pond rumoured to be a bomb crater from WW2,

Unfortunately, we learnt subsequently that despite being sympathetic towards our plans, the owner of the quarry is unable to let us carry out the remedial work in the foreseeable future. Without its main feature, we have decided to abandon developing this route and to look elsewhere.

Following the setbacks, we have returned to the drawing board and devised a largely different route which we think may be suitable. It is still in the Maulden area and we will be 'roadtesting' it in August. You will be welcome to join us and the Secretary will let you know the date when it has been confirmed.



The remains of Bolebec Quarry, which could potentially have provided a good Greensand exposure

Higgins half term event 1st June By Anne Williams



The Higgins organises exciting activities for parents and children during half terms and our BGG geology table of minerals, rocks and fossils gave the children ideas for patterns to print onto pencil cases with the amazing array of art materials available to them in the barbican room.

They were able to take their chosen specimens with them for inspiration; ammonites, fossil leaves and the trilobite were very popular.

Thank you to Jean for her inspired help.

Archaeological excavation in Leighton Buzzard

By Bernard Jones

A small scale archaeological excavation was carried out in June this year behind No. 4 Bridge Street, Leighton Buzzard which is the property next to the Old Stables, once part of the Prebendal Manor of Leighton Buzzard.

The site is in the historic heart of Old Leighton Buzzard close to the Norman Church of All Saints which most probably has Saxon origins. Here is a strip of land lying between the prehistoric trackway, leading from the old settlement (High Street) to the ford (now a bridge) across the river Ouzel and the boundary of the Prebendal Manor. It is about 200m from the river and the street level is approximately 6m above the normal river level. The excavation site is approximately 2m above street level.

This was marginal land and in ancient times must have been used by squatters who encroached upon the land along what is now Bridge Street.



Upper part of dig showing the cobbled yard and brick foundations

It was thought that there would be a considerable build-up of occupation debris on the site, dating back to possibly Saxon and earlier times. However, we were surprised and somewhat disappointed to find that there was nothing earlier than 19th and 20th century occupation debris. This was mainly building waste such as slate and peg-tiles, brick rubble, glass and some metal. We knew from old maps that there had been several out-buildings on the site and we found the foundations of two of them. Other features appeared to be part of a cobbled yard (the building was once occupied by the person who looked after the stables next door) and the brick foundations of what appeared to be a much more recent garden feature, possibly the edging to a paved area.

The property was once occupied by a Dr White who also practised dentistry. We found several small bottles, one of which we were able to show was used for 'Temp cavity lining and temporary filling material'. Other small bottles had a distinctly medical appearance. Several small pieces of pottery had images or writing on them some of which we have been able to identify such as a bottle from Phipps Brewery of Northampton and the Coat of Arms of the Great Northern Railway with two shields, one of three lions of England and the other the lion rampant of Scotland. The first railway station in Leighton Buzzard was opened in 1838.

From a geological point of view, we were surprised to reach 'bedrock' at 50cm below ground level. This would make the 'bedrock' approximately 7.5m above the present level of the river Ouzel and there must have been a bank rising from Bridge Street to the boundary wall of the Prebendal Manor. The bedrock was of a coarse yellowish sand with sub-angular flint inclusions of approximately 15%. As a non-specialist, my thoughts about the geology are that it may be part of one of the river terraces of the Ouzel, deposited in post glacial conditions and subsequently eroded in a series of events by glacial fluvial action.



Extent of dig showing bedrock, possibly river terraces of the Ouzel

Thankyou Bernard for a very interesting report on your latest dig.

Metamorphic heaven!

By Henrietta Flynn

A trip to see the complex geology of Knoydart in the Scottish Highlands



Migmatite



Boudinage quartz



Large mica crystal in schist

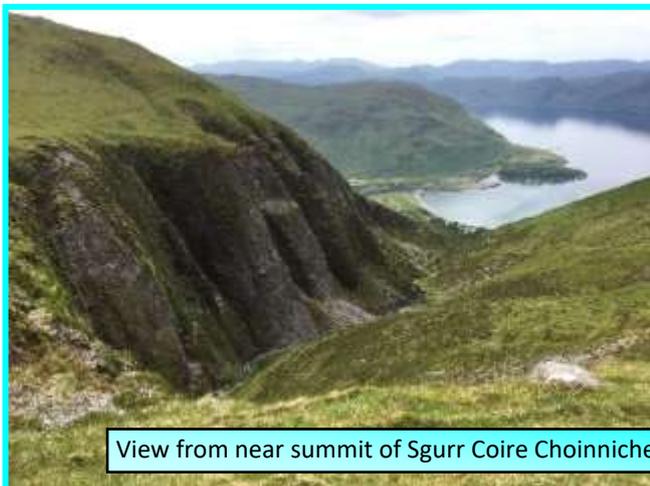
I experienced a geological indulgence early in June when I visited the Scottish Highlands with my walking buddies.

After trekking the Lochaber region around Ben Nevis, Loch Lochy and The Great Glen fault we headed to the Knoydart area, a remote area only accessible by ferry from Mallaig.

The complex geology is such a contrast to Bedfordshire. Knoydart's mountains are great examples of split ridges where one mountain has slipped down along a fault or is thrust over another as exemplified here with the Moine Thrust Fault. This faulting phenomenon is facilitated by the slaty and schistosity character of the Morar Group of rocks. We encountered some fantastic examples of intensely folded and contorted mica schists, the dominant metamorphic rock in this area. The mica here is in such abundance that it was mined here during WW2 when it became difficult to obtain it from the main supplier in India. The crystals are a remarkable size, some as big as 5cm were seen (see photo below).

Structurally it was almost impossible to work out the sequence of events, as the area has been through several phases of deformation with the oldest rocks laid down as shallow sediments over 800 million years ago in the Cambrian period. The scenery was spectacular—the result of episodes of extensive glaciation, the latest being the Loch Lomond Stadial Ice Age, around 10,000 years ago.

For those of you metamorphic geologists this is heaven. We examined magnificent examples of coarse grained banded gneisses, huge quartz intrusions and contorted migmatites. My rucksack was almost too heavy to carry all my bounty and I had to leave some fabulous specimens behind. Easyjet security was certainly a challenge, but I smiled sweetly!



View from near summit of Sgurr Coire Choinnichean

Examining a huge piece of quartz from a pegmatite vein



How well do you know Bedfordshire?

***Did you complete this quiz from last newsletter (Spring 2018)?
No worries if you didn't, you have another chance to try
.....with answers below.***

- 1) Where is the highest elevation point in the county?
- 2) What is a Bedfordshire Clanger?
- 3) How many miles/km is the Greensand Ridge walk?
- 4) Where is Bedfordshire's only natural waterfall?
- 5) What national organisation has its HQ in Sandy?
- 6) Which of Henry VIII's wives had an association with Ampthill?
- 7) Name the village where the River Ivel joins the Great Ouse
- 8) Where is Bedfordshire's tree cathedral?
- 9) Can you name the two universities in Bedfordshire?
- 10) Where in the county is the oldest and longest narrow-gauge railway?
- 11) What famous poet was born in Elstow?
- 12) Where in Bedfordshire is the longest underground pipeline and where does it go to?
- 13) The largest UK collection of horse drawn vehicles is found in Bedfordshire. Where?
- 14) Name the religious order which founded Chicksands Priory.
- 15) Where would you look for deposits of igneous origin in Bedfordshire?
- 16) What demolition work is due to take place in Stewartby later this year?
- 17) What are Griffin Farm, Warden Abbey and Henry's Field?
- 18) Name the 3 European towns that Bedford is twinned with?

Answers.....

- 1) The highest elevation is 797ft (243m) on the Dunstable Downs
- 2) It is a suet crust dumpling. One end filled with meat & veg and the other end with a sweet filling
- 3) Greensand Ridge walk is 40 miles (64Km) long
- 4) The only natural waterfall is at Podington
- 5) The RSPB has its HQ in Sandy
- 6) Catherine of Aragon. She was held at Ampthill Castle from 1531-3 awaiting divorce from Henry VIII
- 7) Tempsford
- 8) Whipsnade
- 9) Luton and Cranfield Universities
- 10) Leighton Buzzard
- 11) John Bunyan
- 12) At Kensworth Quarry. The 57 mile, 10" wide pipeline carries chalk slurry to Cemex's cement plant in Rugby
- 13) At the Mossman Museum collection housed in Stockwood Park, Luton
- 14) Gilbertine Order
- 15) Around Woburn and Apsley Heath where Fuller's Earth is found
- 16) Stewartby's 4 remaining brickwork chimneys to make way for 1,000 new homes
- 17) The 3 commercial vineyards in Bedfordshire
- 18) Bamberg in Germany, Rovigo in Italy and Arezzo in Italy.

2018 Events

Please note these events are subject to change so watch out for details by email nearer the day. For further info please contact Bev Fowlston. Also look at events at: www.bedfordshiregeologygroup.org.uk

We have held a great variety of events this year so far and have successfully managed at least one event per month. (All reported here in this newsletter! Thank you to all who contributed). Here are the 2018 events still to come to complete our wide program of events for the year.

- **Installation of Wall of Geology.** We hope to start building this in the **week beginning August 6th**. We will be helping heritage experts to restore the church wall at Clophill's Old St Mary's Church and build the geological wall with interpretation. MK45 4BP. Details to follow in August.
- **AGM Sunday 23rd September at 2pm**, Husbourne Crawley Reading Room MK43 0XB. A chance to review our year's work and events and catch up with fellow members. We hope to include a visit to the village church to see the only exposure of Upper Greensand—actual green sandstone!
- **Visit to King's Dyke Nature Reserve**, Whittlesey, Cambs. PE7 1PD in **October. Date TBC**. Excellent place to do a spot of fossil hunting in the Oxford Clay and to observe the natural environment
- **Celebration event at Potton Scout Hut in November** to officially open the new wheelchair ramp and unveil the updated interpretation board. In conjunction with Greensand volunteers.
- **Xmas Social in December.** Ideas please....somewhere new perhaps, different format. Please let the committee have your suggestions.

Bev will be compiling a new Events agenda for 2019, so if you have any events, talks, visits either within Bedfordshire or elsewhere which you think would interest our members, then please let her know.

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