

# Newsletter

## *Clearance team blitz Kensworth chalk face*

Saturday April 8th

By Anne Williams & Henrietta Flynn



*Hard graft at the chalk face*



*The contrasting colour of the pinkish solution hollow shows up well and, like the rest of the exposure, was capped by about 0.5 metres of talus.*

A scorcher of a day greeted the hardy BGG clearance team. Armed with Jan's equipment and a selection of garden tools, brushes, trowels, hoes and loppers, the team tackled the loose chalk face and unruly vegetation at Kensworth with vigour.

This was a chance to maintain one of our Local Geology Sites. The face is located within the Kensworth Nature Reserve, next to the working Kensworth quarry (a geological SSSI). This is an important exposure of a section of Chalk from the Lewes Nodular Chalk formation to the Top Rock, at the junction of the Middle and Upper Chalk. The face also exposed three small faults, solution hollows, large flint nodules, as well as an important marl seam which can be correlated over wide distances in Southern England, and the overlying clay-with-flints.

The site had not been cleared for some time and these important features had become obscured. Break-out time with much needed refreshments led to some fossil hunting with abundance evidence of sponges, gastropods, echinoids and bivalves amongst the scree. (Photo's by Derek Turner)

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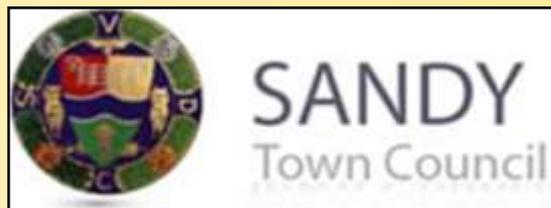
*The clearance gang*

# Greensand Country Landscape Partnership

## Latest update.....

A lot has happened since the last update. We are now fully into the delivery phase of this massive project. Some things still need to be ironed out for the project to fully proceed. These include: Landowner Agreements and specifications for some of the building works at Potton and Clophill, but these are being progressed through various meetings with the relevant parties; finalisation of the three new geotrails, again progress on these is underway; and finally, match-funding is still ongoing but progress has been made.

We have received £3000 match-funding from the Geologists' Association's Curry Fund for help in producing the 4 new leaflets. The first draft of the general leaflet is well on the way, as is the Eastern Geotrail with the help of Tony Baker, Janet Baker and Martin Leggett. In addition, we have received £200 from Sandy Town Council to help with improving access to Sandy Warren Lodge Quarry but we will still need more money for this part of the project.



The disability access at Potton Scout Hut Quarry has been assessed and again we need to obtain further funding for this area of the project.

***We have arranged several events related to this year's delivery of the GCLP project. Please see our Events section on page 7.***

If you want to help in any of these areas then please contact me. Fundraising is the biggest problem we have now, so if you can suggest other avenues of funding that would be a massive help.

*Bev Fowlston.*

## THE GCLP LAUNCH

*On Wednesday June 14th, Henrietta, Bev and Anne attended the official GCLP launch Event at the Safari Lodge in Woburn Abbey. A number of presentations followed the opening speech by The Duke of Bedford.*

*We were told about the £1.66m National Lottery funding from the Heritage Lottery Fund and the array of projects to raise awareness of the heritage of the Greensand Country. All attendees were asked to make an individual pledge to actively engage in the Greensand mission .....food for thought!*

*The event was a chance to talk to the board, partners and put a face to some of the staff who we've had contact with. The evening was rounded off with an offering of drinks and rather nice canapes on a wonderfully sunny evening.*

***A big thanks must go to Bev for her continuing hard work on this important project.***

# BGG assess Munday's Hill Quarry

Saturday March 25th

by Henrietta Flynn

We had an excellent turnout of members at our visit to Munday's Hill quarry in Leighton Buzzard. This quarry, along with several others in the Eastern Way complex of sand quarries is under review following a restoration planning application. The plan is to extend this quarry and use the overburden to infill the neighbouring Nine Acres quarry (see *Spring 2017 newsletter for details*). After a health & Safety briefing by quarry manager Paul Sargent, we made our way into the depths of the quarry, all kitted out in hi-vis jackets, hard hats, gloves and boots!



Walking down into the quarry



Beautiful soft silver sands

The last time BGG visited this quarry was back in June 2013. Since then quarrying has removed vast areas of sand and created a new landscape. Thankfully Paul had supplied us with a route map outlining the best geological exposures and the no-go areas.

The huge sandstone faces from before were not so evident but there were plenty of opportunities to see the Silver Sands of the Woburn Sands Formation. Evidence of a near shore tidal environment was evident from the current bedding, tidal bundles, mud drapes and lumps of charred fossilised wood, indicative of forest fires.

Ferruginous banded layers, nodules and red iron staining provided great colour contrasts across the quarry. Not forgetting the incredible rainbow iridescence colours from the mineral vivianite. Fossil hunting in the overlying Gault Clay and slumped material proved very productive, with finds of belemnites, bivalves and some ammonite fragments.

There was no in-situ evidence for the Shenley Limestone but we did find clumps of it in the scree slopes. It was very hard and densely packed with fossils but could have come from anywhere in the quarry.



Scrambling in the iron stained sands.  
Note the grey Gault Clay above the sands.



A very fossiliferous chunk of Gault Clay

As a quarry worthy of recognition, it still provides a wonderful environment for Woburn Sands investigation and a good site for Gault Clay fossil collecting but is not worthy of a SSSI designation. The quarry operations are now infilling as work progresses so good sand exposures come and go. It would be very difficult to preserve any of these fragile faces, even in sand peels so perhaps photography will be the best preservation tool we have.

## Planning a summer break in the UK with a geological twist? How about the English Coast Path?

So Bedfordshire has no coastline, but we are no more than 70 miles from the sea. How about a coastal walk this summer to explore our geological heritage.

The **England Coast Path** is a proposed long-distance National Trail. When completed in 2020 it will be 2,795 miles (4,500 km) in length and one of the longest continuous coastal walking routes in the world. The path developed and constructed by Natural England will consist of 62 continuous sections. Work is well underway on 60% of the path with new sections opening up all the time, revealing the geology of our coastline like never before.

The geological heritage exposed around our coasts is second-to-none, providing a rare opportunity for time travel through the evolution of our planet. Think of the iconic English sites of Lulworth Cove, Durdle Dor, the White cliffs of Dover, Land's End, Hunstanton Cliffs, just to name a few easily within our reach this summer. So put your boots on and go exploring our coast.

For further information on the progress of coastal path construction, please visit:

[www.gov.uk/government/publications/england-coast-path-overview-of-progress](http://www.gov.uk/government/publications/england-coast-path-overview-of-progress)

And to find out where your next coastal walk will be this summer, look up:

[www.gov.uk/englandcoastalpath](http://www.gov.uk/englandcoastalpath)



## BGG Spring Social



As a change from the usual Xmas Social, this year we held our gettogether on May 3rd in Husborne Crawley. Did you miss it?

Members brought along a great selection of food. Best dessert of the evening was without a doubt Janet's profiteroles, delicious!!

We asked members to bring along an item of geological interest which stimulated some good discussions. Amongst the specimens we had coprolites, quartz filled geodes, Blue John, a slab of polished mylonite, course grained granites, a fish scale in limestone and an ammonite fragment showing an exquisite complicated suture line (recently found by Tony Baker in Munday's Hill Quarry).

This was followed by a fund-raising raffle and geological quiz to test the old brain cells. Each team wrestled with some obvious, some obscure and some trick questions.

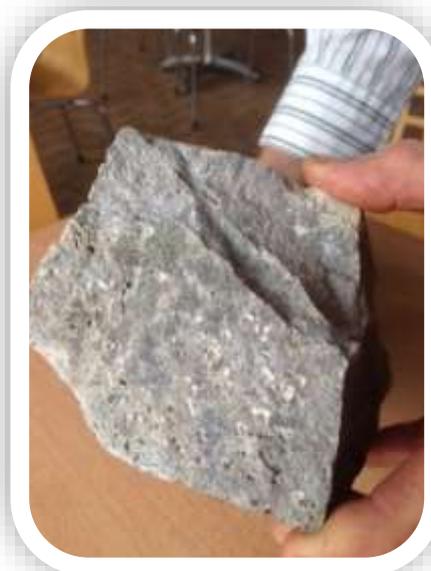
Only one was on Bedfordshire and not many got it right!!

## A Smelly Rock!

*By Anne Williams*

As the fielder of queries to the BGG I often get sent photos of odd rocks for identification. This one from Andrew Hurman of Great Barford, dug up in his garden was one of the oddest in that it smells strongly of sulphur. Could it be a meteorite?! I just had to see it, so Andrew took it to The Higgins, where the Reception desk staff held on to this large smelly parcel for some time before I relieved them of it.

Does anyone have any ideas about its origin? Some clues – it fizzes strongly with dilute hydrochloric acid, so limestone or concrete. Tony Baker, our expert on concrete says it is not concrete - no large clasts in it. Lots of small white fragments could be shells and lots of cavities that could have contained them.



The surface is grey-white with some rusty patches, but the inside is a darker blue-grey. I think the smell of sulphur is fading now. The shape is odd in that it looks as if it may have been shaped as a building stone. The location of Andrew's garden is on one of the gravel terraces of the Gt. Ouse, gravel over Oxford Clay, some distance from the river, and anyway it is too big and angular to be water-borne.

I feel that it is limestone and in the wet anaerobic soil the water in the pore spaces has led to reduced grey iron oxide and the formation of hydrogen sulphide, hence the smell. I have suggested that Andrew takes it to Albion Archaeology for an opinion on its being part of some old buildings on the site. I would like to thank Andrew for taking the trouble to bring it to our attention, and we would welcome any ideas.

One thing for sure it isn't a meteorite!

## Geo-East events this summer & autumn

As BGG is a member of Geo-East, we are invited to attend their events. This summer they are holding a **FREE** morning tour (11.00—13.00) of the **Sedgwick Museum in Cambridge on Wednesday July 12th**, followed by an afternoon of geological talks. Bring your own lunch.

14.00 - 14.50 'The Fuse to the Cambrian explosion, or why it took so long to put men on the moon' (Prof. Nick Butterfield, Cambridge University)

14.50 - 15.10 Refreshments

15.10 – 16.00 Building Stones (Dr Ruth Siddall, University College London)

If you are interested in attending, please email [naomi.stevenson@naturalengland.org.uk](mailto:naomi.stevenson@naturalengland.org.uk) to book a place.

Geo-East are also organising a one-day conference on '**The Ice Age and After**' on **Saturday November 18th**. More details to follow when the programme of speakers has been confirmed.

# The Northampton Sand Man

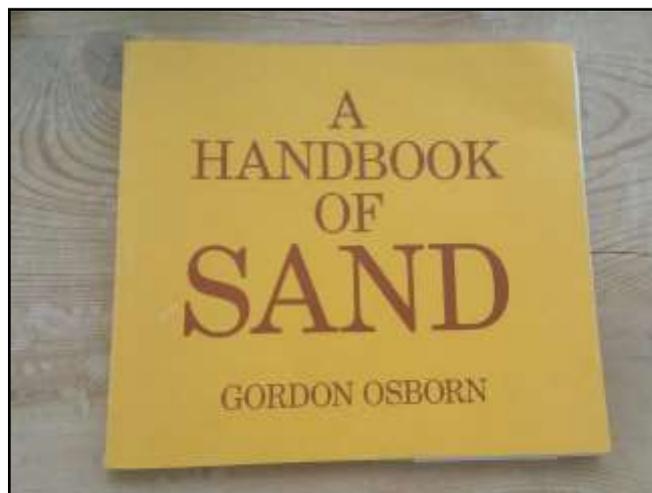
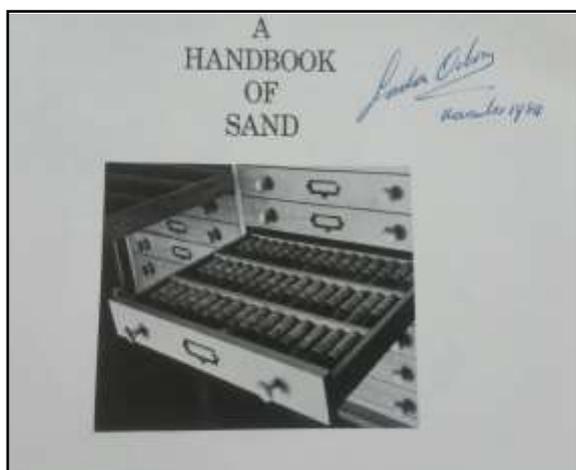
## The Gordon Osborn Sand Collection

by Anne Williams

**H**oused in 8,407 glass tubes within beautiful wooden cabinets, this amazing collection of sand samples from all over the world can be found in the Humfrey Rooms, headquarters of the Northamptonshire Natural History Society in the centre of Northampton. The collection was created by Gordon Osborn, a butcher and fire officer in the small town of Olney, who developed a passion for geology and for sand in particular:

*'Sand is one of the most common ingredients of our natural surroundings, being so widely known that it is all too often taken for granted. Yet it also conjures up immediate associations of mystery and pleasure, from the vast fascination of the world's great deserts to the humble child's sand pit or day at the sea-side.'* (Introduction to A Handbook of Sand).

His book 'A Handbook of Sand' is a comprehensive guide to the provenance, formation and properties of sand, with its classification, mineralogical and textural analysis (complete with histograms and cumulative frequency curves) and microscopic and colour plates, which I found very useful for A-level Geology projects on the Woburn Sands. Though students found it, predictably, rather boring!



Mr. Osborn did not collect all the samples himself but enlisted all his travelling and holidaying friends and acquaintances. The collection has been curated, labelled and entered onto a database by the members of the NNHS.

The first cabinet was presented by Gordon in memory of his late wife Dora. An amateur geologist and naturalist with an interest in palaeontology (and sand of course), he nonetheless became a Fellow of the Linnean Society and the Geological Society and a council member of the Conchological Society amongst other positions.

Having found a copy of Gordon's book in the Oxfam bookshop in Olney and tracked down the location of the collection, I visited the Pumfrey Rooms on one of their curation days and was warmly welcomed and shown, not only Gordon's collection of sand (the floor has had to be reinforced as sand is very heavy!), but also their wonderful fossil and rock collection.

Bev is going to give a talk there later in the year on The Geology of Bedfordshire and we could continue to develop a relationship with their Society. They have several sections, including a Geology one, and lots of field outings.

# 2017 Events

<i>Date</i>	<i>Event</i>	<i>Description</i>	<i>Time</i>	<i>Venue</i>
July 15th	Site Clearance & walk	<b>GCLP Eastern Geotrail Event.</b> Meet at Potton Scout Hut Quarry to clear face then after a picnic lunch we will walk the second half of the Eastern Geotrail taking the local stone buildings and hearing about the coprolite industry in and around the town of Potton. This walk will be approximately 3 to 4 miles long. There will be plenty of parking for all those attending but if you can car share then please do so.	10.30am	Potton Scout Hut Quarry, Sutton Road, Potton SG19 2DS
August Date to be confirmed	Visit	<b>College Lake Tring</b> to visit the lake's geology & fossil collection. & walk around the lake with a Ranger.	10.30 am -12.30 pm	2 miles north of Tring, Bucks HP23 5QG
August 27th	Walk	<b>Clophill Geotrail.</b> Walk the Clophill & Maulden Woods geotrail. Run by the Ecolodges . Book at <a href="http://clophillecolodges.org.uk/events/">clophillecolodges.org.uk/events/</a> . Cost £3 pp.	12-2pm	Old St Mary's Church, Clophill MK45 4BP
2nd & 3rd September	Clearance & walkway installation	<b>GCLP working Event.</b> Assist the RSPB in clearing shrubs & trees to enhance quarry view. Help with installation of walkways & steps. Details to follow later.	10am	RSPB Lodge car park, Potton Rd, The Heath, Sandy, SG19 2DL
September 24th	<b>AGM</b>	<b>AGM at Marston Moretaine Village Hall.</b> Meet at Marston Vale Forest Centre (Sat Nav MK43 0PS) at 2pm to walk around the forest before heading to the Village Hall for 3pm to hear our guest speaker, Peter Shelton from the OU talk about local fossils amongst other things before completing the afternoon with our AGM.	2pm for walk. Meeting at 3pm	Marston Moretaine Village Hall, Bedford Rd. MK43 0LD
October 15th	Workshop	<b>GCLP Workshop</b> - Participate in a public workshop that will explain how to conserve our local geological heritage and why this needs to happen. HELP FROM MEMBERS NEEDED	10.30am to 12.30pm	Potton Scout Hut Quarry, Sutton Road, Potton SG19 2EH
November 18th	London visit	A visit to the Geologist's Association to see the famous William Smith map at <b>Burlington House</b> followed by a group visit to the <b>Natural History Museum.</b>	10.30am	Burlington House Piccadilly London W1J
December 6th	Social	<b>Annual Social Evening</b> – Celebrate the year and festive season with a few drinks and nibbles. There will be the usual quiz and picture show along with a display of our newest promotional materials.	7.30pm	Husborne Crawley Reading Rooms, Turnpike Rd, MK43 0XE

*Please note these events are subject to change so watch out for details by email nearer the day. Also look at events at: [www.bedfordshiregeologygroup.org.uk](http://www.bedfordshiregeologygroup.org.uk)*

## Fossils, fences and fun at Totternhoe

Saturday May 20th.

By Anne Williams

Totternhoe Stone Pit is a quarry where chalk was quarried for lime and cement, but within it is the famous Totternhoe Stone, a strong durable chalk horizon (a 'hardground') in the Lower Chalk between the Chalk Marl and the Grey Chalk, which has long been used for buildings, including Westminster Abbey and Woburn Abbey.

It is about one metre thick in the Chiltern Hills but at Totternhoe a channel deposit is 7 metres thick (for details see our leaflet Totternhoe Stone Pit). It has been quarried and mined via adits into the hillside since the Middle Ages and is still extracted at the western end of the quarry.

The BGG had permission to enter these workings to view the man-made cliff showing the white, non-bedded pure Totternhoe Stone. Over the fence we went. It was quite an unorthodox procedure! See photo....



*Walking down into the quarry where much of the quarry floor has been backfilled*



*Don't laugh it's your turn next!  
....and the other leg over!*

At the top of the open pit were large blocks of the coarse horizon which marks the base deposit of the channel and which is very unlike chalk and so is rejected for building stone. It is full of small re-worked pebbles and nodules of phosphate and various iron minerals. We were amazed by the dense pattern of the trace fossil thalassinoides, burrow systems made in the sea-floor by burrowing bivalves, worms and Crustaceans. We must assume there were sharks and other fish swimming in this sea as we found several small brown 'shark teeth', both here and in blocks of chalk scattered about the Nature Reserve. We also found small brown fragments of rhynchonellid brachiopods and impressions of the bivalve *Inoceramus*.  
*Continued next page....*

Parts of the main quarry is a nature reserve and SSSI managed by the Wildlife Trust for its impressive range of wildflowers, chalk grassland, butterflies and reptiles and we had a very enjoyable walk in the sunshine on our way to the open stone pit.

Thank you to Bev for organising it and sharing her knowledge about a rock which is rarely seen except in its use as a building stone.

### So what was the chalk landscape like?

When the British Isles was in the same latitude that the Bahamas occupy today, on our journey northwards, global sea-levels were rising in the Cretaceous 'Greenhouse World'. This was the Cenomanian transgression, about 100 million years ago, and the late Cenomanian represents the highest mean sea-level in the past 600 million years, approximately 150metres above present day sea-level. So global warming and rising sea-levels is not a new phenomenon! The landscape was one of warm broad shallow seas inundating all low-lying land areas. On the surface of these warm seas algal blooms grew rapidly and the calcite skeletons (coccoliths) of billions of these micro-organisms accumulated on the sea-floor forming the thick white Chalk.



*Heads down for that extra special fossil find ..... just a few small shark's teeth this time*



*Well it looks like a bivalve, what do you think Tony?*

## Membership subs increase

*At the last BGG committee meeting the subject of subscriptions was discussed. Compared with other similar groups our membership fee of £7.50 is far below the norm and has never been reviewed.*

*It was suggested to increase it to £10 per annum. Going forward, we would like to redesign and update the BGG website and also reprint some of our geotrail flyers. This increase will go some way to help our funds.*

*This is your geology group and we would like to hear what you have to say.*

*Please send your views to Tony Baker our membership Secretary or attend the AGM in September and voice your opinions.*



**Would you like to become more involved with the BGG?  
Then join the committee?  
Martin Day is thinking of coming off the  
Committee at the end of the year due to other commitments  
so if you'd like to be our new Treasurer please contact  
Derek Turner.**

**We could also do with some fundraising help particularly for the GCLP project. (See page 2). If you have a little free time, we'd appreciate your help. Please contact a committee member.**

## **BGG Committee**

Acting Chairperson	Anne Williams	<a href="mailto:anew36@hotmail.com">anew36@hotmail.com</a>
Group Secretary	Derek Turner	<a href="mailto:derek.turner@phonecoop.coop">derek.turner@phonecoop.coop</a>
Treasurer	Martin Day	<a href="mailto:francis.day@btinternet.com">francis.day@btinternet.com</a>
Meetings Secretary	Glynda Easterbrook	<a href="mailto:glyndaeasterbrook@gmail.com">glyndaeasterbrook@gmail.com</a>
LGS Manager/Information	Anne Williams	<a href="mailto:anew36@hotmail.com">anew36@hotmail.com</a>
Projects/Greensand rep	Bev Fowlston	<a href="mailto:bev.fowlston@gmail.com">bev.fowlston@gmail.com</a>
Geo-East rep	Henrietta Flynn	<a href="mailto:henriettaflynn@btinternet.com">henriettaflynn@btinternet.com</a>
Chalk rep/BNHS rep	Janet Munro	<a href="mailto:janet.munro@bedford.gov.uk">janet.munro@bedford.gov.uk</a>
Events Coordinator	Bev Fowlston	<a href="mailto:bev.fowlston@gmail.com">bev.fowlston@gmail.com</a>
Membership Secretary	Tony Baker	<a href="mailto:tonybaker36.bggmembership@yahoo.co.uk">tonybaker36.bggmembership@yahoo.co.uk</a>
PR/Newsletter Editor	Henrietta Flynn	<a href="mailto:henriettaflynn@btinternet.com">henriettaflynn@btinternet.com</a>

Newsletter compiled and edited by  
Henrietta Flynn

If you wish to include an article, photo  
or share your geological interest in the  
next issue, then please contact me by  
email at

[henriettaflynn@btinternet.com](mailto:henriettaflynn@btinternet.com)

**Hope you enjoy the read!**

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news on events, walks and talks.  
It's easy to download our flyers and geotrails*

**[www.bedfordshiregeologygroup.org.uk](http://www.bedfordshiregeologygroup.org.uk)**

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or Twitter <https://twitter.com/BedfordshireG>*