



Cambridgeshire
Geological Society

NEWSLETTER

Autumn 2023

Cambridgeshire Geological Society



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www.cambsgeology.org
www.fenedgetrail.org

Editorial : Reg Nicholls

Dear member, in this issue of the Newsletter, we return to my earlier format! In order for this publication to be relevant and “living” - it needs input from yourselves. Have you a question that might interest the other members, or perhaps you found a rock/ pebble Plesiosaur bone on holiday and want to share it! If so then please get in touch in

the normal way (info@cambsgeology.org) and we will be happy to include it in the next issue.

Help needed on the Committee: I know we are always asking, but things are getting to a point that we do **really need support** to keep the activities at this level.

If you can afford a few hours each month to help us, it would make a big difference.

The committee meetings are roughly 4 per year and at present, by zoom. You do not need to be a Geology expert to help make a difference. The AGM in November will be the time for new volunteers to be voted onto the committee, so please do consider giving the society a little bit of your time.

During 2023, the Society has been active offering several local field trips which were all well attended.



Simon cleaning up Commissioner's Pit

A Tribute to Dr Simon Kelly

It is with sadness that we announce the passing of Dr. Simon Kelly whom many of you will remember as the expert on the Upware Jurassic succession. Since 1984, he had been a member of CASP and worked primarily in the Jurassic and Cretaceous sediments in a range of locations including Svalbard, Greenland and Arctic Canada. Simon was awarded the Polar Medal in 2000 and a second

clasp in 2023 in recognition of his multiple expeditions in the Polar regions. Simon kindly led several field trips for the GA, Geo-East and CGS to the Upware area in Cambridgeshire and amongst his 70 odd publications are seminal works on the Upware Limestones and the surrounding rocks. In the last few months, Simon had been ‘getting his house in order’ by curating his large collections of rocks from Upware and beyond to get them into a fit state to donate

to the Sedgwick. We are grateful to one of our CGS members who assisted him in this enterprise. Those of us who had the good fortune to accompany Simon (and his dog) on his outings can testify to his gentle spirit and general kind nature. He was soft spoken, but carried an authority of deep knowledge. Our condolences are extended to his family. Simon will be greatly missed.



Oxford Archeology



Peterborough Museum

Roman Fossil Collector

Archaeologists have found a Plesiosaur vertebra whilst investigating some Roman remains in the King's Hedges area. It was found among a number of other animal bones and pottery items

dating from mid 2nd to late 4th century. The dinosaur bone is quite smooth and rounded, probably compatible with being handled for some time. It is likely that this was a

keepsake for someone—but who knows what they thought it might be! Once the dig is complete the artefacts will be given to Cambridge County Council.

*Visit to Hibbitt's stone yard, Near Newmarket**By Dr Nigel Woodcock / Penny Coggill*

Totternhoe Stone, from Bedford



Anacaster Stone oxidation boundary

Hibbitt Masonry Ltd have their main commercial base and cutting facilities in Victoria Road, Cambridge, but keep their unworked stock of stone blocks at their yard near Newmarket. The Society was shown round the yard on an increasingly rainy morning by Paul Hibbitt, geologically assisted by Nigel Woodcock.

The stone blocks that we saw were as delivered from the quarry; typically about a cubic metre in volume and therefore weighing about 2.5 tonnes. The blocks, mostly limestones, showed the signs of being cut or levered from the quarry faces, rather than being freed by blasting. Blasting causes small fractures in the stone, which tend to promote faster decay when set in a building and subjected to weathering.

Paul explained that no block is used until it has spent at least one winter in the yard. This strategy reveals blocks that are susceptible to freeze-thaw weathering, which tends to micro-fracture or otherwise disintegrate the stone surface. Nigel explained that, counterintuitively, the most durable stone types are often those that readily let water flow in. The durability arises from the fact that such permeable stones also allow water to drain out, so that only low volumes of pore-water are present to aid physical and chemical weathering.

Paul showed us in turn the products of a number of active quarries. Lincolnshire Limestone (lower Middle Jurassic) dominated, either from Clipsham or Ancaster, both north of Stamford, Lincolnshire or – in small quantities only – from

Ketton, Rutland, to the west. Superficially similar Bath limestones from the Great Oolite (upper Middle Jurassic) were of interest because they form the dressings of most Victorian houses in Cambridge. Blocks of white limestone from the Portland Group (Upper Jurassic) were easily identified from their large preserved bivalves and other shells. A French Middle Jurassic Limestone from Charmot was also seen.

The hard local Chalk Group stone (Upper Cretaceous) known as Clunch is no longer available, but Paul showed us a very coarse block from Totternhoe, Bedfordshire.

The main sandstone blocks in the yard were Woodkirk Yorkstone (Upper Carboniferous) from West Yorkshire, used especially for paving and other high-wear settings.

*Book Review: "Assynt—The Geologists Mecca"
Edinburgh Geological Society 2014*

Statues of Peach and Horne—famous NW geologists by Alan Herriot

This 2nd edition of the Edinburgh Geol Soc is a handy introduction to the geological history of one of the most fascinating areas in Britain (if not the world) The geology of the NW Highlands spans over 3 billion years and was one of the last to be understood. This booklet covers heavily the history of the exploration, which is as complex as the rocks and not without some deep controversies between some

of geology's giants.

The Moine Thrust is now seen to be the key to understanding the stratigraphy and structure of the area, but the earlier geologists were unfamiliar with this mechanism for moving mountains. The booklet describes the way that thrusting can develop and how it affects the succession of rock layers—placing older rocks on top of younger ones.

There is much historical description of how the true structure was arrived at and it deals with what has been termed the "Highland Controversy". One of the "greats" Murchison, made up his mind about the simple structure, but it was Lapworth who vindicated Nicol's observations which had been roundly rubbished by Murchison and his ally, Geikie.



Franziska explaining to the group



Dawn Redwood in Autumn



Editor note: Whilst in the Botanic Garden, do not miss the raised walkway taking you on a journey through Geological Deep Time showing the evolution of plants.

'Living Fossils' visit to Cambridge Botanical Gardens, June By Maggie Aldridge

Who would have believed we would take a trip back to the Cretaceous period in Cambridge; to be guided round Cambridge Botanical Gardens (CBG) to look for living fossils (trees)!

Our guide **Franziska Norman of CGS**, had planned the tour in detail and provided us with intriguing and fascinating facts about each of the living fossils we encountered, most going back to the Cretaceous period of history. The trees we were shown all varied hugely in size, shape, leaf colour, bark, seeds – every aspect in fact. Isn't nature amazing!

Here's a sample of the things we learned about:

- 1) The Dawn Redwood tree was discovered in 1943 in China. The tree in CBG is the first one to be planted in Britain, there are several more examples of this beautiful tree in CBG and in other parts of our country. They are deciduous with feathery, elegant foliage and have small seeds.
- 2) Wollemia nobilis Pine,

planted close to the Dawn Redwood but this specimen had unfortunately suffered during the harsh, long, cold periods we experienced during the winter of 2022/3. The Wollemia Pine was found in 1994 in a remote gorge in New South Wales, Australia growing up to 40m in the wild. We saw a more robust and mature specimen at the exit to the glasshouses nearest the café.

3) Conifer genus Araucaria araucana or as we know it 'Monkey Puzzle' tree. Another living fossil. In the wild there are whole forests of these extraordinary conifers growing in South America where they are endangered. They are unusual as they drop their lower branches, as they grow taller. There are many Monkey Puzzle trees in different areas of CBG, ranging from small (2m) through to more mature (25m).

4) Ginkgo – this beautiful tree is well known. An interesting fact is if you look at the underside of the

leaf, the veins fan out from the leaf stem which is completely different from other leaves where the veins lead off a central stem that runs down the leaf – look, carefully.

5) In the glasshouses, enter from the school area end and notice Araucaria biamulata, a small tree in a pot on the right-hand side. They are found in New Caledonia which is in the Pacific Ocean.

6) Enter 'Mountains' glasshouse and notice the Japanese Umbrella pine (Sciadopitys verticellata) on the left, part of it looks like the spokes of a wheel. The sap from this pine tree is a strong contender for being the origin of Baltic Amber – yet to be confirmed.

This event was fascinating and all who attended enjoyed learning about these extraordinary 'living fossils' – our eyes were opened and the more we looked, the more detail we saw; helped and supported by our expert guide.

Thank you to Franziska and thanks to Penny Coggill for organising the trip.

Monthly Society Meetings

All talks are at 7.30 pm (doors open 7.00 pm). Everyone welcome, free to CGS members, small charge for non members. Refreshments available (£1)

Hall 1

St Andrew's Centre

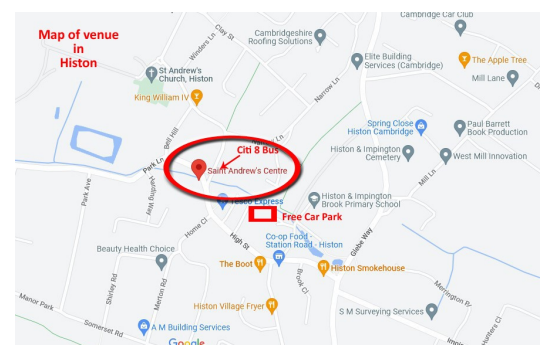
School Hill

Histon

CB24 9JE

Monday 11th Sep 2023 7.30pm

**Shap Granite: geology, origin and celebrity
by Dr Nigel Woodcock, Department of Earth
Sciences, University of Cambridge**





Dr Steve Boreham + group
at Holme Posts

Geosite News: by Chris Donnelly

CGS members enjoyed two field visits to Local Geological Sites this summer. The first, in April, was to two 'clunch' pits at Reach and was led by Dr Steve Boreham who has carried out research at both and had permission from both landowners to arrange the visit for us (both are private with no open access). We hope to propose them for designation this October as the landowners support their geoconservation.

The second, in July, was to the Great Fen, between Ramsey Heights and Yaxley, to visit the area around Holme Fen and Whittlesea Mere which was designated an LGS in 2020. As our county has the largest area of surface peat in the Fens, CGS has recognised the important heritage value of our local Holocene geology i.e. the deposits formed since the end of the last glaciation (about 12,000 years ago). These consist not only of the surface peat (now mostly degraded and comprising the famous 'peat soil'), but also a complex sequence of buried deposits including significant amounts of older peat, some more than 7,000 years old. A band of marine silt and clay, from tidal salt marshes and mudflats, about 4,000-3,500 years old (Late Neolithic and Early Bronze Age), can be found within the peat in many places. The Great Fen has a unique combination of fenland geological features and (again helped by Dr Steve Boreham) we were able to examine a c.3 metre deep 'core' (reaching to the Oxford Clay bedrock) from the Whittlesey Mere area to see some of these: lake marl, the marine clay and a deep section of well-preserved, buried 'Lower' peat made up of reed peat, wood peat, detritus mud and containing several recognisable seeds. An enjoyable day, also with plenty of wildlife and history, such as the Holme Post and the Rothschild Bungalow.



An example
of the Fen
deposits
brought to
the surface
by an auger
coring

Fen Edge Trail Guided Walks: by Chris Donnelly

We have organised three guided walks along the Fen Edge Trail this summer, all of which were enjoyed by members and non-members alike, with each giving an understanding of the local geology and how the Cambridgeshire landscape has evolved. In May, we dodged the late flooding to explore the southern end of the Ouse Washes at Earith, where the drainage of the fenland was brought to life in the company of Peter Daldorph from the Word Garden who had designed the walk after studying the 17th century work of the Adventurers. Four rivers meet at this strategically important point (both historically and currently) where the Ouse enters the Fens and walking along their banks on a sunny day was most enjoyable.



In the garden of Little St Mary's
Church on the Cambridge walk

In a complete contrast to the quiet surroundings on the Ouse Washes, June saw our walk, led by Martin Evans, through the, always busy, city of Cambridge. Exploring the Alluvium-covered riverside pastures and the River Terraces (their gravels now hidden by numerous colleges), the group learnt of the underlying Gault clay and Chalk bedrock, to get a glimpse of the pre-development landscape of the Cam Valley. Various building stones were examined, along with the history of their settings, and there was also information on the, often overlooked, local industry based on the water mills.

Finally, in July, we again enjoyed pleasant weather for our walk around the village of Thorney in the company of Dot Halfhide from The Thorney Society and Museum. In a completely different setting to the other two walks, we explored this attractive village with lots of information from Dot on its historic development by the Earls (later Dukes) of Bedford, as well as its famous Abbey. The location of the village was explained once its underlying geology was described: an area of March Gravels surrounded by low-lying fen covered by Bronze Age tidal silts, the gravels providing protection (from erosion) to the Oxford Clay bedrock and forming enough high (and therefore dryer) land for a settlement.



Thorney Museum

Published Walk Guides for all of these walks are freely downloadable from our webpage www.fenedgetrail.org