

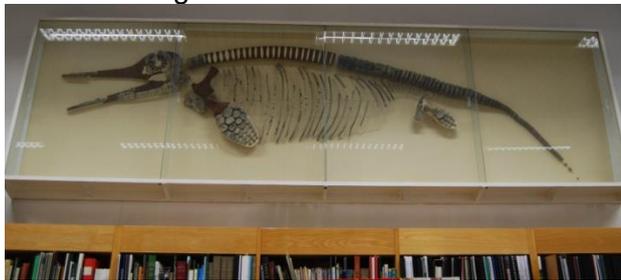


Buckinghamshire Earth Heritage Group

Newsletter No. 26 December 2015

The Milton Keynes Ichthyosaur

As Keeper of Natural History at Bucks County Museum I was asked last year to come up with an idea for a small exhibition in Milton Keynes Library's Event Space. Knowing that they had a 75% complete fossil ichthyosaur hanging on the wall of their Reference Library (photo below) it seems like a good idea to tie in with that.



In January 2015 I headed up to the library with a van containing a variety of Oxford Clay fossils including bits of Ichthyosaur and other marine reptiles to put together a two month exhibition entitled "Swimming with Ichthyosaurs" (photo below). Linked to the exhibition where a number



of associated events including a Rock & Fossil Day (supported by other members of the Bucks Earth Heritage Group), an evening talk and an afternoon "Meet the Keeper" session. These provided great opportunities to talk geology with local Milton Keynes resident which was great but what really surprised me was how few people knew that their central library had a 160 million year old Ichthyosaur on permanent display. This in turn, made me wonder how many of our members know about this fantastic fossil.

Originally dubbed the Caldecotte Monster, it came to light in 1982 when contractors were excavating what was to become Caldecotte Lake just to the south-east of Simpson. (See photo below). A keen-eyed workman spotted what turned out to be fossil ribs and informed his supervisor who carefully parked a large lorry over it to prevent it being destroyed by the range of large vehicles manoeuvring around the site. Bob Williams, then, the Milton Keynes archaeologist, inspected the site and quickly realised that this wasn't archaeology and called Leicester University's Geology Department who had a lot of expertise in Jurassic marine reptiles.



A four day excavation then ensued by Dave Martill - a young palaeontologist. Dave may be more familiar to you as the editor of the Palaeontological Association's book, Fossils of the Oxford Clay. Each fossil bone was meticulously mapped and bagged and taken back to Leicester. A lengthy conservation programme revealed that it was an ichthyosaur belonging to the genus *Ophthalmosaurus*, a group of ichthyosaurs dubbed Big Eyes due to their 23cm diameter eye sockets.

The conserved bones were then mounted to reveal an animal 5m in length. Big Eye returned to Milton Keynes for a short tour in 1983 before taking up permanent residence in the reference library of Milton Keynes Central Library. My Swimming with Ichthyosaurs has now ended but Big Eye 'lives' on in the library. If you haven't already seen it I highly recommend a visit

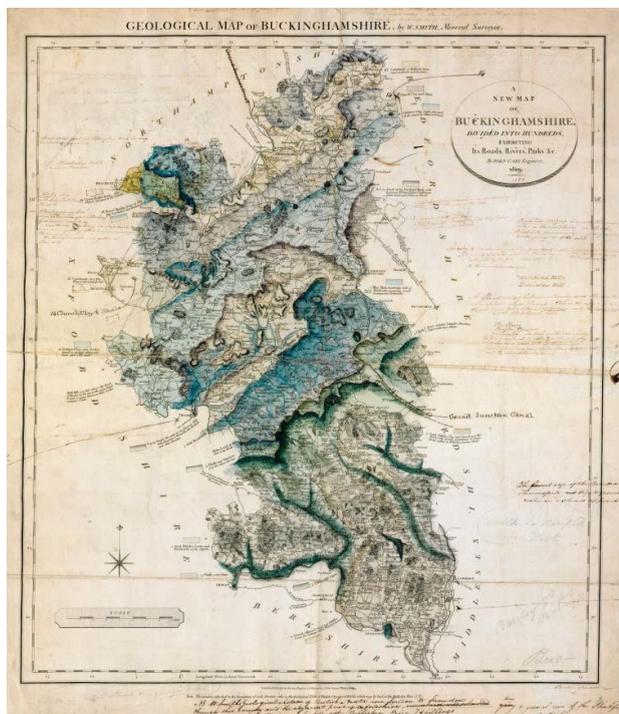
Mike Palmer

William Smith's Geological map of Buckinghamshire

2015 is the bicentennial celebration of William Smith's Geological Map of England and Wales. Earning himself the title "Father of English Geology" William's map laid the stratigraphic framework for geological mapping. As a self-taught land surveyor one of his purposes was to describe where geological resources could be found and exploited aiding Britain's rapidly Industrialisation in the early 19th Century.

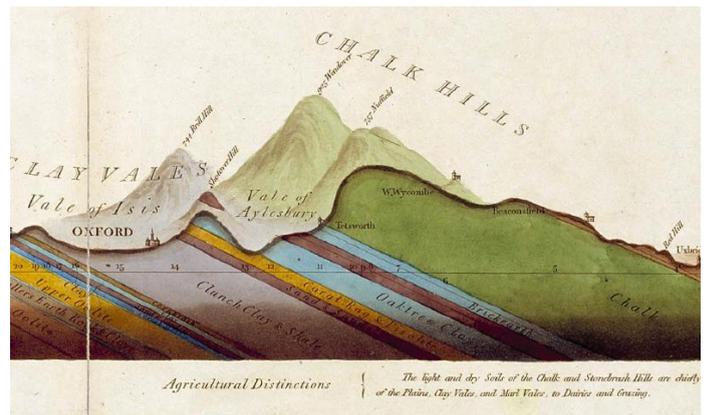
Despite financial problems which results in his imprisonment for debt in 1819, with the help of his publisher John Cary, William went on to produce a series of detailed geological maps of each County. Buckinghamshire County Map was published in part III in 1820 with a short memoir describing Buckinghamshire geology:

"Buckinghamshire has all the varieties of Oxfordshire, but differs from it in having but a small portion of that kind of stony land which characterizes the north-western part of the latter county. it has considerable breadths of poor sandy and gravelly heaths above the chalk; a bold ridge of chalk; its clay-land vale of Aylesbury, succeeded by a sand and sandstone ridge; a district of strong clay-land, with its usual wet surface, and a drier limestone, which skirts the northern part of the county, in a north-eastern direction, parallel to the river Ouse."



Geological Map of Buckinghamshire, by W. SMITH, Mineral Surveyor. Published by John Carey 1820. scale 1 inch = 3 miles.

So how well did William Smith know Buckinghamshire? For a start he was born and grew up not too far way in Oxfordshire. During the height of his map making project (1799-1815) it is estimated that he travelled up-to 10,000 miles per year on poorly made roads by horse and cart, this in itself an astonishing achievement! His exploits were largely self-funded while he was working on commission for land and mine owners across England and Wales.



Buckinghamshire part of the Snowdon to London Cross-section – William Smith 1817.

William Smith's diaries and memoirs describe several trips to Buckinghamshire and nearby locations. During 1802 and 1803 he was employed by the Duke of Bedford to work on drainage problems at the Woburn estate. His diary records expeditions as far as Aylesbury surveying distant properties belonging to the Duke accompanied by the steward (Mr. Farey). Again in October 1811 he travelled to inspect a failed attempt to find coal at Sir John Aubrey's estate in Brill, Buckinghamshire and then on to Aylesbury. In November of 1816 he travelled to Wendover and Tring to consult on water issues associated with the Grand Union canal. There are no doubt other accounts of William Smith's visits to Buckinghamshire which will come to light, currently his diaries and documents have been scanned but not transcribed making it difficult to search.

Graham Hickman

Sources:

- <http://www.handwritteninstone.com/>
- <http://www.williamsmithonline.com/who/locations.html>
- <http://historyofgeologygroup.co.uk/>
- <http://www.oum.ox.ac.uk/collections/>
- <http://www.strata-smith.com/>

BEHG Minutes of AGM – Bucks County Museum Resource Centre, Halton,

Saturday June 20th 2015

Present

Tony Britten, Jill Eyers, George Lewis, Mike Palmer (minutes), Judith Stanton

1. Apologies

Julia Carey, Graham Hickman, Ian Hudson, Mick Oates

2. Minutes of previous AGM, 24th May 2014

Agreed as a correct record. No matters arising

3. Membership report

No membership report was available for the meeting due to an organisational oversight. Mike to ask Julia to draft a brief report to append to the minutes

4. Review of the previous 12 months

4.1 Conservation

Jill noted that very little conservation work had been carried out over the last years due to protracted transfers of management for a number of sites, e.g.

Whiteleaf Quarry from BCC to Chiltern Society

Coombs Quarry from BCC to Thornborough Parish Council and who?

Northmoor Hill from BCC to the Denham Conservation Group

Many of these groups are organising their own volunteer groups to carry out maintenance, however, they are happy to have input from BEHG in a specialist advisory role.

Buckingham Sandpit is still managed by the Aylesbury Vale District Council although concerns were expressed over their capacity to carry out maintenance with the reduction in staff in the biodiversity team from three to one. Jill noted that some of the wooden walkways were rotting

Jill suggested that we produce an action plan for the above sites along with Stowe

4.2 Field meetings and Talk

Ivinghoe Hills Walk (11th May 2014). How did this go?

Coombs Quarry visit (5th July 2014). This meeting was organised to view the new layout of the quarry and recently exposed strata and also to collect samples from the soft marl layers for wet sieving (2 and 1mm) It is hoped that the samples may reveal early Jurassic mammal teeth similar to one found at this site in 2001. Jill noted that the sieved samples still required looking at and suggested a future session with binocular microscopes at the Museum Resource Centre. All agreed that this was a good idea and should be progressed

Matthews Brickworks (30th July 2014). A fascinating visit on a lovely day to Buckinghamshire's last remaining brickworks. 11 people in attendance

Pitstone Droving and Geological Walk (30th August). An enjoyable meeting but with a low turn-out due to a publicity mix up

Mundays Hill Quarry trip (3rd May 2015). How did this go?

Sunrise visit to Stonehenge (17th May 2015). A field meeting with a difference, much enjoyed by the 24 people present

Jill also carried out a number of outreach projects including sessions at Whiteleaf School, Griffin House (Little Kimble) and a family event day at Northmoor Hill

In addition, four members ran a Rock & Fossil Day event at Milton Keynes Library (31st January 2015) as part of the two month long Swimming with Ichthyosaurs exhibition put up by Bucks County Museum

Mike thanked Jill and Ian for their ongoing monthly visits to the Museum Resource Centre to carry out identification and checking work on geology collections requiring incorporation into the main collection. If any other members would like to become involved in this please contact Mike at the museum

4.3 Newsletter and Website

No report was available for the meeting. Mike to ask Graham to draft a brief report to append to the minutes

Mike also noticed that his old email address was still present throughout the website pages and needed updating to mpalmer@buckscountymuseum.org

5. Treasurer's Report

Due to work pressures Jill was unable to present the Group's accounts at this meeting. Jill reported that the current balance was £5,614-45. Jill will prepare the accounts and pass them on to Joe Ibbett for auditing before being appended to these minutes.

Jill suggested that some of the money could be spent on publicity to recruit new members. The committee will review publicity and membership issues at the next committee meeting.

Tony was keen to ensure that non-members attending meetings pay a fee both to increase income and to ensure they are covered by our insurance policy. Insurance will be discussed at the next committee meeting.

6. Election of Officers

The current committee is as follows

Officers

- Chairman – Mike Palmer
- Secretary (acting) – Mike Palmer
- Vice Chair and Membership Secretary – Julia Carey
- Treasurer (acting) – Jill Eyers

Other Committee members

- Webmaster and Newsletter Editor – Graham Hickman
- Committee members - Philip Clapham, Jill Eyers, Ian Hudson, Nicky Muizelaar, Mick Oates, Judith Stanton

All members of the committee are happy to stand for another year. All present were happy for this to be the case

7. Any other business

Mike reported the Geologists' Association's invite to their annual Festival of Geology at University College London which this year will take place on Saturday 7th November. If anyone would like to represent the Group at this event please contact Mike

Mike also noted that as part of the Nature Detectives exhibition at Bucks County Museum it would be nice to run a Fossil Fun Day. This would possible take place on a week day during the summer holidays or a Saturday if during October (Jill being unavailable during September. If you are interested in helping out on the day please contact Mike who will send out more details as arrangements become more clear

8. Date of next Meeting

Date and venue of the 2016 to be confirmed early in 2016 [*Saturday 21st May 2016 has been provisionally confirmed*]

End of minutes



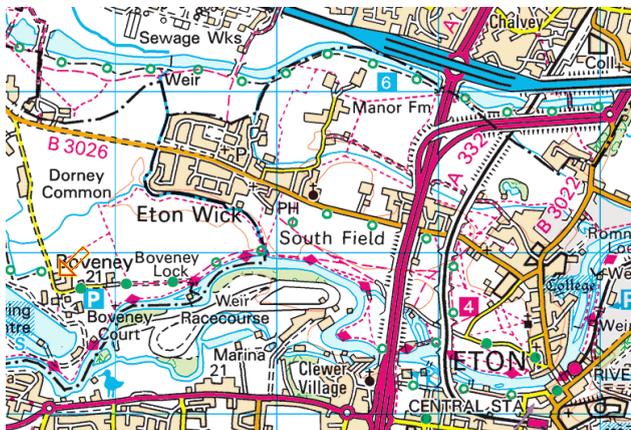
Photo Above: Members view Whiteleaf Quarry face after the AGM

A walk on the Wet Side - by Phil Clapham

A pleasant and flat walk begins just the other side of Dorney village in South Bucks, Start at Boveney car park (grid ref SU936778). Within a few hundred yards of the car park is the church of St Mary Magdalene, built in the 12th century it is constructed of chalk rubble and galleted flint. (photo below)



Next to the church was a wharf. The river was a major thoroughfare. Barges transported timber from Windsor Forest into London, among other commodities. Henley and Marlow developed as river ports, serving Windsor and beyond. Cotswold stone from the Tayton quarry near Burford, Oxon, was brought by ox-cart to Henley and then transported downstream to Windsor and London. In the 13th Century Penn floor tiles became a major industry and they were brought to Hedsor wharf and carried by barge to Windsor and London.



Following the Thames, with Windsor Castle in the distance, on its high chalk bluff, pass Boveney Lock with Windsor Racecourse visible on the other side of the river. After the lock the path runs beside open fields and pasture, going under the long brick viaduct of the railway, then into the Brocas. This is still cultivated as a traditional meadow. On reaching Eton, there are plenty of cafes and pubs for refreshment. Turn away from Windsor Bridge and walk towards Eton College. A surprising amount of brick can be seen in the various buildings of the college complex but there is still a lot of stone as well. The college itself is probably the focus of the

walk as far as geology is concerned – but you would require a knowledgeable eye. There are Jurassic limestones from Lincolnshire and the Cotswold. Caen stone from Normandy was also brought up-river to Eton (as it was to Windsor). Some 407 tons are recorded in the accounts for 1443. Even more remarkably was the Upper Permian Magnesium Limestone from Huddleston quarry in Yorkshire. This was a prized building stone. Ragstone from Kent (Medway) is also recorded in the accounts (from the Lower Greenstone formation) but probably the most interesting was the Upper Greensand Reigate stone, also known as Surry Firestone, which was quarried at various locations on the slope of the North Downs.

After leaving the College make your way along the road towards Slough, near the RH turn for Datchet you will cross a medieval bridge known as Beggars Bridge – the local burghers, who paid for the construction, being unable to charge a toll to travellers – as most of them were on the King's business, going to Windsor were reduced to asking for a payment – or begging for it.

At the big roundabout with the Eton Relief Road. Go through a small car park on LH side and then to the pathway that runs alongside the tranquil Jubilee River flood relief system. Proceed along the made up path but beware of cyclists coming up behind. The route continues as far as Maidenhead but around the halfway point you will reach a tall weir. At this point you need to turn on to a path on the LH side which will take you over a small stream and then continue alongside the stream as it swings to the LH side, following pasture to the Dorney to Eton Wick road. It emerges at the last house in the latter village. At this point cross the road and follow the field across pasture again, at a slightly diagonal line. Lots of walkers use this route so the path is visible in the grass. It leads towards a hedge line which marks another small stream. Here you will find a bridge that is little wider than a plank with one rail. On the other side you take the path on the RH side which follows the other side of the hedge, to the end of the field (usually barley) and then the path to the LH, remaining in the same field, At the end of this field is a line of Horse Chestnut trees, and a driveway that leads to Boveney Lock. Turning to the RH you will approach the several houses that make up Boveney village – and the car park where you began.

Phil Clapham

Members Questions & Answers:

Question: The two images below are of what looks like some sort of ironstone nodule that was described as being the size of a grapefruit. The enquirer brought it into the museum for me to look at, but has since taken it away again. It was found under a patio in Aylesbury in 'reject' sand from an unknown source but probably within Bucks or neighbouring county.

Can anyone hazard a guess as to what strata such nodule may be found along with what it is likely to look like inside and how it formed? The enquirer suggested that the raised lines with a soldered appearance where evidence of someone having either made it or at least tampered with it. I would suggest that these are cracks that have allowed a greater degree of oxidisation and therefore expansion.

Your thoughts on any of these points will be gratefully received. All the best

Mike Palmer



Answer: While it is difficult to say exactly where this stone may have originated, there are some clues to suggest that it would probably be from the basal Cretaceous, Whitchurch Sand or Lower Greensand, which occur in patches along the Buckinghamshire outcrop from Long Crendon to Linslade. An unusual looking stone like this probably was picked up by someone passing, as a garden ornament, only to be forgotten and buried later.

Some observations about how it formed are possible. First, the object did not form at the same time as the sand in which it formed was deposited. The sand subsequently became "sandstone" after deposition, as the grains were compacted and cemented together. The process whereby sediment is modified after deposition is called diagenesis.

Some of the diagenetic changes occur fairly soon after deposition. One of these is the formation of concretions - the local cementation of sediment in approximately spherical masses, due to the precipitation of a cementing agent between the rock grains, normally seeded by something different in the rock, like a shell or different mineral grain. But to provide a cementing agent, there must be an increased concentration of something in the groundwater. This is thought to be provided by the increased acidic conditions associated with the decomposition of organic matter in the sediment. To increase the iron content in the water, the matching decrease in groundwater oxygen will enable more iron to be dissolved from existing grains. If the moving groundwater encounters a patch where the conditions more favour precipitation than dissolution, a concretion will form.

Iron in solution occurs abundantly in fresh river water. On mixing with saline water in an estuary, the iron tends to precipitate out and is incorporated in the sediment typically as one of several iron carbonate minerals. This type of environment is envisaged for our area during the period following Jurassic deposition and preceding the global sea-level increase later in the Early Cretaceous. The brown and yellow sands (Lower Greensand) of Leighton Buzzard and Brill are good examples of this type of iron enrichment in sandstones.

Mick Oates

2015-2016 Future Programme –

Further trips and talks will be scheduled as the year progresses. Please check the BEHG website or email the organisers before any event, for the latest update.

Sunday January 10th 2016, 10:00am -1:00pm. Ivinghoe Beacon Winter Walk. To confirm meeting location please pre-book with Jill. For details contact Jill Eyers: at (j.eyers@btopenworld.com) or call 01494 881325.

Saturday February 6th 2016, 10:00am-12noon. Introductory Workshop to Rocks, Fossils and Minerals, part 1. This 2 hour workshop provides skills in the identification of rocks, fossils and minerals. Including the interpretation of ancient environments. Members free, non-members £5. For details contact Jill Eyers: at (j.eyers@btopenworld.com) or call 01494 881325.

Thursday February 18th 2016, 6.30 – 8pm. Wolves and Wildcats: surviving the end of the Ice Age in Somerset, Prof Danielle Schreve (Royal Holloway, University of London). Cost £7.50; free refreshments during short interval. This is an externally arranged talk as part of Bucks County Museum Winter Lecture Series. For more information see www.buckscountymuseum.org/museum/whats-on/events

TBD Spring 2016, Geophysics walk/training in South Bucks. Jill will lead and demonstrate the use of Geophysics in Archaeological investigations. For details contact Jill Eyers: at (j.eyers@btopenworld.com) or call 01494 881325.

Saturday April 9th, Rock & Fossil Fun Day at Bucks County Museum. Contact Mike Palmer for further details, Tel: 01296 624519 email: mpalmer@buckscountymuseum.org

Saturday May 21st 2016, time tbd. BEHG AGM and keynote talk. This would be free for BEHG members and chargeable for members of the public. Contact Mike Palmer for further details, Tel: 01296 624519 email: mpalmer@buckscountymuseum.org

June 2016 TBD - Exploring the Tertiary of Buckinghamshire with Jill Eyers. A drive through South Bucks looking at the geological story from 65 million years ago to the start of the Ice Age 2.6 Ma. For details contact Jill Eyers: at (j.eyers@btopenworld.com) or call 01494 881325.

Sunday July 17th 2016 - Charnwood Forest, Leicestershire. Roy Cole offered to lead a trip

Sunday August 7th 2016, meet 11.30am. Coombs Quarry Picnic and Tour. For details contact Jill Eyers: at (j.eyers@btopenworld.com) or call 01494 881325.

Summer 2016 TDB - Duns Tew Quarry (south of Banbury, Oxon). For details contact Jill Eyers: at (j.eyers@btopenworld.com) or call 01494 881325.

Summer 2016 TBD - Bugle Pit SSSI Grand Opening, subject to access issues being resolved. Trip could include a drink and/or meal in the Bugle inn pub next door. For details contact Jill Eyers: at (j.eyers@btopenworld.com) or call 01494 881325.

September 2016 TBD - Geological Fly drive across Bucks. North to South Geological traverse across Buckinghamshire. For details contact Graham Hickman (hickmang@bp.com) or call 07763363266.

Saturday November 2016 TBD. Festival of Geology. University College London, Gower Street, London. WC1E 6BT. Free public event. Family friendly.

Membership

2016 looks like it should be a good year for BEHG. Membership is due on January 1st 2016 but don't wait until then to renew. Members paying early get 1 extra month free in 2015. Please forward on membership fee as soon as possible please to Julia.

Annual membership runs from 1st January. Individual membership for the 2016 calendar year is **£7.50** and family membership is **£12**.

A copy of the membership form is available on our website:
www.bucksgeology.org.uk/pdf_files/BEHGMembershipForm2014.pdf

If you would like to join please complete and send the application form together with payment to:

Membership Secretary, Julia Carey, c/o BMERC. Place Service 9th Floor, County Hall,
Aylesbury. Bucks. HP20 1UY

email: jcarey@buckscc.gov.uk

Alternatively, you can pay your subscription direct to the **BEHG** account at :
Lloyds TSB (White Hart Street, High Wycombe)
Sort code: 30-94-28 Account no. 00744003

Confirmation of receipt will either be by email or by post. The BEHG welcomes all new members.

The Buckinghamshire Earth Heritage Group aims to record, conserve and promote the geology of Buckinghamshire and Milton Keynes.

Website: www.bucksgeology.org.uk

For general enquiries please contact:

Mike Palmer, Tel: 01296 624519
email: mpalmer@buckscountymuseum.org
Bucks County Museum Resource Centre,
Tring Road, Halton,
Aylesbury, Bucks HP22 5PN



Affiliated to the Geologists' Association

