# Occasional Erratics

Newsletter of the

**MEDWAY FOSSIL AND MINERAL SOCIETY**

www.mfms.org.uk

No. 14 July 2020

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The editor of this edition of the MFMS Newsletter was Nick Baker

**Cover picture**
**Blue Lias, Lyme Regis, Dorset**

**Index to editions 01-13**

**Contents of this edition No. 14**

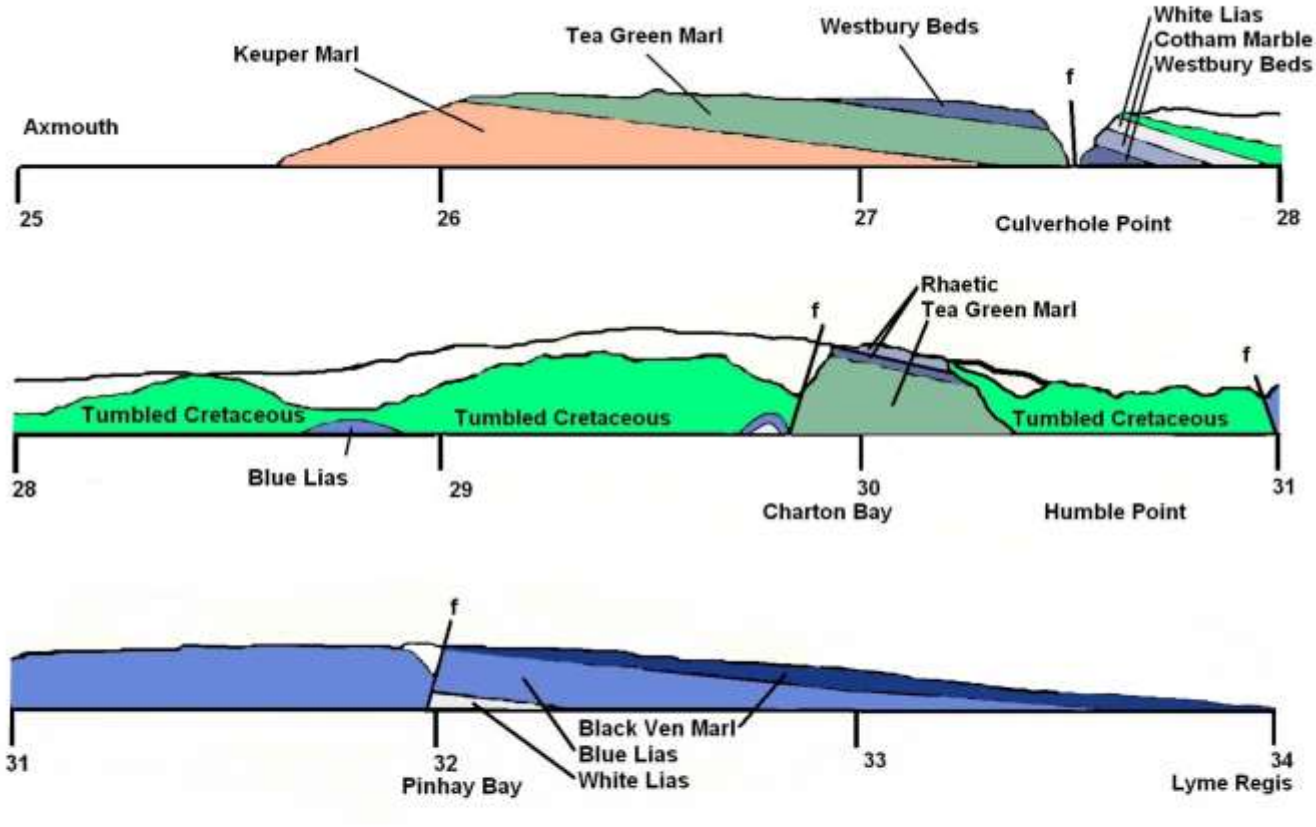


## Editor's notes.

Welcome to edition No. 14 of *Occasional Erratics.* This is the first (and I wish it were the only) under the conditions of the so-called 'lock-down'. With better times on my mind, I have described an itinerary from Lyme Regis to Branscombe (Devon) and, yes, you would need a good part of a week to do it justice. Gary has got to no. 4 in his 'tour' of American geological Parks. James has described a (speculative) Roman means of transporting Ragstone from the Greensand outcrop to the Medway. Gary is then back with Dinosaurs on coins. And then comes the great innovation. Meetings by way of Zoom. For the uninitiated, imagine a sort of multi- Skype. (what's Skype? - save it!) We have had ups and downs. We are allowed just 40 mins per session. If you want a second session the host must make sure he/she is using the same identifier. I have described the first meeting on pages 14-20. The second meeting was mine, with just 10 pictures, Pages 21-23. I think the method is useful for business meeting, and even simply transmitting information. But our normal meetings are more than that. There is a biological *ethos* that decides the difference between the individual and the group. I think those natural history sciences, which I count geology as one, rely on it the most. In the mean time I will try to inform on the results of our 'experiments.'

**ATTENTION - This year we have had 21 meetings but have missed c16. So, there needs to be some discussion on next year's subs. A suggestion has been made for a half rate of £13. Also a suggestion of £10. But there will need to be a discussion between now and October. From my view it is fair and necessary to make a reduction. Watch this space!**

# An Itinerary. Lyme Regis to Seaton.




**Axmouth- Lyme coast section**

Numbers indicate grid - kilometres easting
Vertical aspect not to scale.

Nick Baker 1980

The coast line between Lyme and Seaton is subject to much slippage. In fact there are similarities to this area and Folkestone Warren, in so far that there is a large mass of Chalk just to the north, which has slipped on the Lower Cretaceous—Upper Greensand. This has created a botanically– rich wooded area, through which passes the Devon Coast Path. So, much of the beach between Lyme and Culverhole is strewn with large boulders of Chalk, Cenomanian Lime-stone, Foxmould and Chert Beds. Fossil collecting from these boulders is best when they are freshly fallen, otherwise, over time, the seawater turns the boulders as hard as concrete.

Starting from Lyme Regis, there is a low headland composed of **Black Ven Marl,** often producing mud-flows, but the underlying **Lias** often forms platforms on the beach in which very large ammonites can frequently be seen.

The dip of the beds is to the east and so we are heading into older strata as we

head towards **Pinhay Bay**. Remember that the base of the Jurassic does not coincide with the base of the Blue Lias, but is marked by the first appearance of the ammonite *Psiloceras planorbis*., about five metres above the base of the Lias. So the lower part of the cliff within the bay is of the upper-most Triassic and some of the underlying **White Lias** can be seen in the centre of the bay.

A fault in the west side of the bay down-throws to the west, replacing the hard Liassic cliffs with Black Ven Marl, with a jumble of fallen Cretaceous strata as we arrive at **Humble Point.** It was possible between 1976-86 to take the coast path and then gain access to the beach at Humble Point. I cannot say whether that is still the case. Back then you were committed to the beach or path all the way to Axmouth. If you like botany, take the path. Otherwise stay with the beach.

In the landslip there is some *in-situ* **Chalk** but the area is heavily fissured, so try to keep to the Coast Path if you are going that way. When I first saw Humble Point, there had been a fresh slippage and collecting from the boulders was easy. The fauna from the **Cenomanian Limestone** is particularly rich. The fossils are those of the Lower Chalk but preservation, particularly of the ammonites, is often better. The **Chert Beds** are what they say—thick beds of chert, interspersed with sandy bryozoan-rich beds with chert nodules. Occasionally, the sandy beds give well-preserved bivalves and gastropods, especially in the highest division known as the **Top Sandstone**.





And in the Top Sandstone is item one in the gallery—*Neithea quadricostatus*.

Below the Chert Series is the **Foxmould,** a glauconitic grey-green silt and siltstone, which we will see more clearly at Seaton, but items two, three and four come from this bed—*Rotularia concave, Exogyra conica* and *Holaster fossarius.* The *Rotularia* and *Exogyra* are very common in the Foxmould and I have often wondered about an environment that supports a worm and a bivalve, almost in exclusion to everything else.

As we move westward again we approach **Charton Bay**, where the Upper Triassic **Tea Green Marl** forms the cliff, with some Rhaetic Beds at the top. Another fault downthrows the strata to the west and so we are back to a badly drained scree, filled with tumbled Cretaceous. Just beyond the fault a small anticline brings the White Lias up to beach level once more—note the heavily dark glauconitic nature of the Lias above, but the beds are also noted for a high pyrite content.

The top of the Triassic, working downwards is **non-Jurassic Blue Lias, White Lias, Cotham Marble, Westbury Beds, Contorta Shales, Bone Bed 1 and 2**

In the picture, the slightly darker lower beds may be Cotham Marble. In some years enough of the shingle may be removed to expose the Westbury Beds as well as the Contorta Shales, named after the presence of the small bivalve *Rhaetavicular contorta*.

These beds can be heavily pyritic and are often loaded with needles of selenite.

In the next two kilometres towards **Culverhole Point** the beach is strewn with boulders of Cretaceous strata. The boulders of chert bed are numerous at this stage, although more often with **semi-nodular chert** rather than thick bedded form. (See right)

Culverhole Point gives the best exposure of the top -most Triassic, but is subject to much erosion. A layer formed of sandy 'Gault' lies unconformably on the **White Lias and Cotham Marble**. (see below)

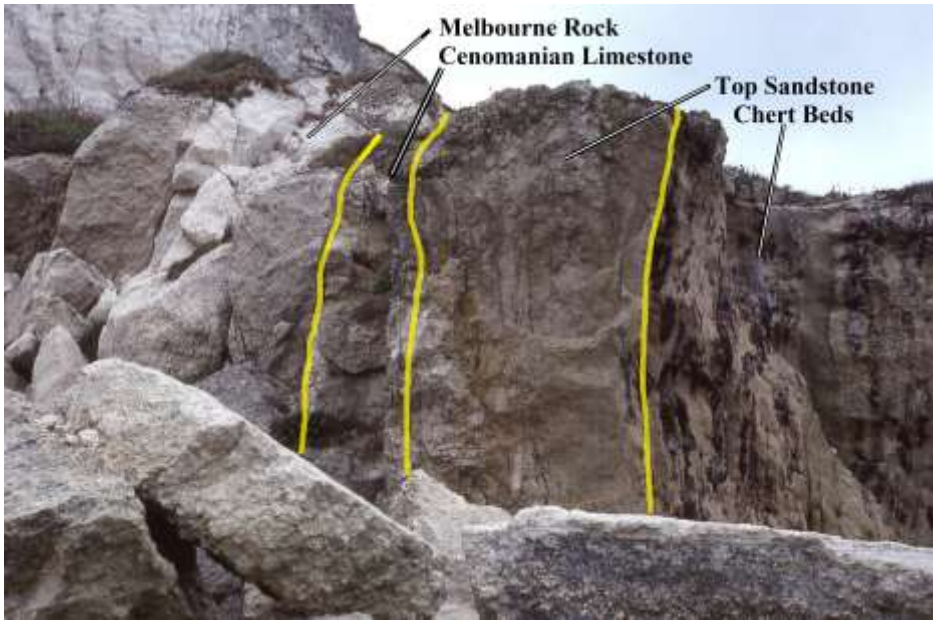
The **Westbury Beds** lie below the beach shingle in most years and only on one occasion did I locate the **Rhaetic Bone Bed**. There is a fault at this point, which downthrows to the east, so that we are suddenly confronted by almost two kilometres of Triassic. The cliffs are first composed of **Tea-Green Marl** but eventually the red **Keuper Marl** rises in the cliff. Gone is the jumble of fallen Cretaceous, but be prepared for heavy going in the two kilometres of shingle beach.

After crossing the Ax river, we walk along Seaton Prom. Another fine scene awaits us—**White Cliff**. All the jumble of Cretaceous strata can now be seen *in situ*. It is most spectacular on a fine day. The embayment to the right is **Seaton Hole**, where a fault comes in, up-throwing the Keuper to the east. At the time of the photo (1980) there had been a cliff fall and so pickings were good, and the location probably safer, but I did bet my life on that one. A sign does warn visitors of cliff falls.

So, what are we looking at? Well, the strata are dipping to the left, so the oldest strata is on the right and the grey-green sand is the **Foxmould**, part of the **Upper Greensand**, equivalent in age to the Upper Gault But fossils are mostly marine worms (*Rotularia*) and a bivalve (*Exogyra*). Echinoids such as *Holaster fossarious* can also be found The reddish bands above the Foxmould are the **Chert Beds**. Sometimes bivalves can be found in the beds between the chert. The beds can also be bryozoan-rich. Two to four metres of fine sandstone form the **Top Sandstone,** containing occasional shark teeth and bivalves such as *Neithea*.

Now, we come to the Upper Cretaceous. Above the Top Sandstone are 1.5 to 12.5 metres of hard and rubbly limestones, the **Cenomanian Limestone.** They are discontinuous stages of the

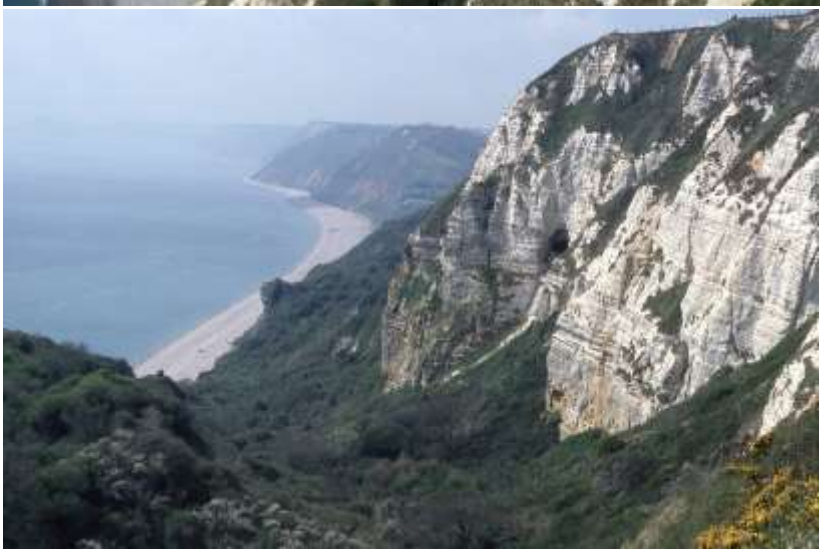
same age as the Lower Chalk. They are difficult to see *in situ* but sometimes whole fallen sections can be seen just south of White Cliff. There they are just 1.5 metres in thickness. In the Hooken Landslip they are 12.5 metres. The differing thickness is thought to be due to faulting at the time of deposition. The photo below is of a fallen section south of White Cliff (1980) There are four divisions to the limestone (Oldest first) The thicknesses are those seen in the Hooken Landslip.




**The Pound Pool Limestone**.
This is equivalent to the basal beds of the Chalk—The *Hypoturrilites carcitanensis* sub-zone (*Mantelli* zone) 3.5 metres.
**The Hooken Limestone** is equivalent to the *Mentelliceras saxbii* sub-zone (*Mantelli* zone) 5 metres
**The Little Beach Limestone** is equivalent to the *Turrilites costatus* sub-zone (*Rhotomagense* zone) 2 metres
**The Pinnacles Limestone** is Equivalent to the Zone of *Metoicoceras geslinianum*—The *Plenus* Marls. 2 metres.
A fresh rock fall can contain more easily extractable fossils and preservation can often be better then in the Kentish Chalk, in the case of those otherwise preserved as moulds. Gastropods such as *Bathrotomaria* and ammomites such as *Scaphites*. After the 1979 rock fall, a rich fauna could be obtained. Myself, Ann Barrett and Luke Booth visited the area in 2011. The scree was very overgrown and the rocks were like concrete. One must remember that cliff-top properties in the location will put the local councils under strong pressure to do 'a lavakite' on the screes. Enough said. Forget the hammer and chisel—bring binoculars!

It is worthwhile taking the paths towards the Hooken Landslip, where one can see the best sections and some remarkable landscapes. So, our first picture is the view from the top of **Beer Head**, looking down on The Pinnacles and the seaward side of **The Hooken Landslip.** Sections are generally not accessible but fallen boulders can be examined on the beach, so check on the tides beforehand.

The lower picture shows the valley with the path going down through the landslip. The cliffs appear to show well-bedded chalk. This is a combination of marl seams and flint bands. This local **Seaton Chalk** is packed with flint bands, unlike the equivalent Holywell Nodular and New Pit Chalk of Kent. It may be the closer aspect of the Upper Cretaceous shoreline (relative to the South East) that gave a greater supply of silica. In the 1980s there were rock exposures close to the footpath. Near the top of the path there were good exposures of the *Lata* zone, with abundant minute *Terebratulina lata*, while lower down, some levels of The Hooken Limestone were packed with *Holaster laevis*.



The adit half way up the cliff is an abandoned mine, which extracted **Beer Stone**, much prized as a local building stone. This area is the most westerly outcrop of the Chalk in Southern England, apart from the Wilmington pits, which show mostly Cenomanian Limestone.

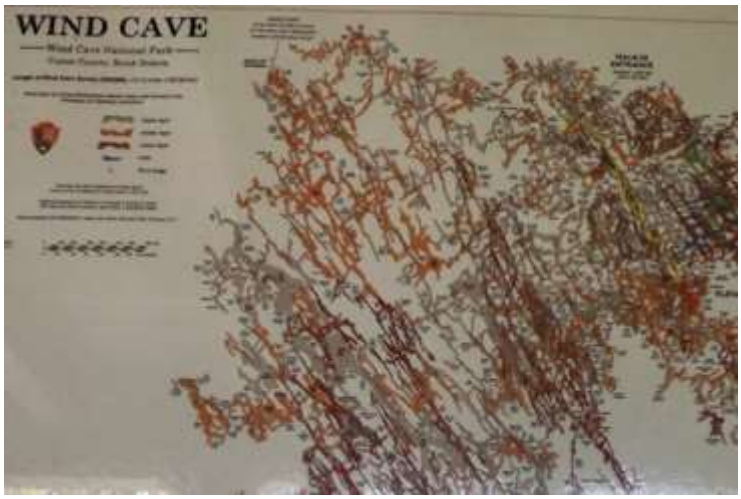
In 1976-86 I would rent a caravan at Charmouth and spend a week there each year, usually in April. I would then explore the Jurassic coast to the east. But 2/3 of the week would be spent examining the coast I have just described. I think I paid £10 rent for the week in the first year and about £15 in the last..

**American Parks Part 4: Wind Cave**

**by Gary Woodall**

Yet another park that is close to the 'US national parks route' is Wind Cave National Park which is situated in the Black Hills of South Dakota this time some 60 miles south of Rapid City. As the name implies at its heart is a cave but the park is much more than just this as there are also extensive grasslands and forests with abundant wildlife. For this reason the park was elevated to National Park status, rather than just being a National Monument. The cave was discovered in 1876 by Tom Bingham who saw a small hole about 1 foot square in the ground. When he bent down to look into it, air rushing out of the hole blew his hat off! He went back several days later only to have his hat sucked into the same hole! This strange phenomenon is caused by differing air pressure between the cave and the open air. When the outside is low pressure air rushes out of the cave and vice versa. Today a park ranger demonstrates this using a ribbon. A wider entrance was eventually dug into the cave but a clever double door airlock system was installed to preserve the effect which gave the cave its name.

**Blow Hole**




**Plan of cave system**

The cave system is the 6th largest in the world with over 140 miles of tunnels formed in limestone. The limestone was laid down some 300 million years ago, and is contemporary with the Carboniferous Limestone of Britain, which also contains extensive cave systems. Some passages contain stalagmites and stalactites but the cave is famous for the occurrence of boxwork formations, the most extensive deposits in the world.

Boxwork is quite a rare type of formation and formed because the limestone also contained large amounts of gypsum, the chemical breakdown of the gypsum produced sulphuric acid which dissolved pockets and small caves in the limestone. Dissolving and re-crystalising of the gypsum created cracks is the surrounding limestone many of which filled with calcite. Over millions of years the area rose above the sea and became land. The caves were then enlarged by the usual method of rain water that has picked up carbon dioxide from the air forming a weak acid that percolates through and dissolves the rock and creates the cave system. But as the calcite is more resistant than the limestone the veins of calcite are left and these line the roof of the tunnels and have been called boxwork.

For safety reasons, the cave can only be visited on a tour and once inside you descend down several flights of steps to the main level. The ranger tells the story of the caves' discovery and warns of the dangers of wandering away from the group. You then start to trek through the quite large tunnels and soon the boxwork is seen covering the ceiling. The tour lasts about an hour and eventually you arrive at a set of elevator doors, (lift to you and me!) Yes it must be the only cave system in the world with a lift built in to save the walk back to the surface.

Descending into the cave

The elevators

Above ground the park is still very interesting with lovely forests and grasslands with many hiking trails for visitors to walk. It is also important for the wildlife with many deer, pronghorns and prairie dogs. But most spectacular are the bison which were successfully re-introduced many decades ago. Today quite large herds roam in the grasslands.

Bison herd

Large Bison

## A Roman Mud Horse Speculation **James Downer**

Lightbulb moments are rare these days. In his talk to the Kent Geologists' Group entitled "Ragstone to Riches" Dr Simon Elliott described how one such insight initiated the research that led to his Phd study of the Roman Quarries of the Medway valley around what is now Maidstone. Over a period of 300 years, they produced the ragstone that was used to build Roman London. He explained that the quarried stone was loaded on to the small Classis Britannica vessels moored along the Medway in the area that was to become Maidstone for onward shipment down the river and up the Thames to London.(see Roman History in Kent). As he described the location of the quarries I visualised the familiar Sheet 288 Solid and Drift BGS map of the Maidstone district and realised that the broad dull green area depicting the Hythe Beds (ragstone areas) of the Greensand Ridge were riven by narrow strips of brighter green (representing the underlying Atherfield Clay) in precisely the areas he was describing - particularly Tovil, Dean Street, the Loose Valley and Boughton Monchelsea. The Atherfield clay must have been exposed by the Roman quarrying. There really is no other plausible explanation in terms of physical geology, that can explain such a narrow and relatively shallow land feature with hard rock removed and underlying soft rock remaining.

A visit to the Loose Valley Quarry Wood RIGS site gives a good insight into the methods used by 19th/20th century quarrymen, They dug out the clay below the ragstone before removing the hassock and breaking off the ragstone they were seeking. The clay seems to have been dumped against the sides of old workings and there is a stone paved trackway leading inland to allow transportation out of the quarry by cart or lorry. Medieval quarrymen also seem to have favoured local transport by cart over a track or road from much smaller pits. They too seemed to prefer their quarries to be dry.

If you move from Quarry Wood across the short distance to The Loose Valley Roman Quarry there is no such trackway to the river and no sign of clay dumped on the old workings. You can see the remains of the last working face at the end of the quarry, marked by a pile of rough hewn ragstone blocks, surprisingly still there, and a small spring of water that trickles down the slope later joining with other springs and seepages along the side of the valley to form a small stream flowing over a mile down the hill to Tovil and the River Medway. I think the combination of a clay bedrock described above and an ever present water supply running down the valley is the key to understanding how the stone was transported down to the riverside. Any palaeontologist who has teetered across the Isle of Sheppey's London Clay at low tide will testify to the friction free properties of a wet clay bedrock. Wheeled transport would clearly be impossible on such clay but a pushed sledge laden with rocks once started would slither down the slope to the river with very little effort - provided the Atherfield clay remained wet. Indeed it might be difficult to stop it.

The sledge would need a wide mud contact surface to support the weight but an example can still be found on the banks of the Severn Estuary where a Somerset mud horse is used by fishermen at low tide to reach their nets and fish traps out in the estuary.

You might expect the roman quarries to run on a broad front parallell to the river to reduce the distance the stone would have to travel to the waiting vessels, but they were excavated in a relatively narrow linear form at approximately right angles to the river. This linear shape of the quarries can now be explained – they simply followed the spring back up the slope, which enabled them to keep the underlying clay wet to facilitate the removal of the stone by mud sledge. I suggest that the slope, the clay and the water are therefore fundamental to the operation of the quarries in roman times. Furthermore it has been suggested to me that although the watercourses down the valleys would have been too shallow to float the sleds back up to the active work face the force of water flowing downhill would have been sufficient to lift the front of the sledge as it was hauled upstream and make the return journey much less arduous.

It is also likely that water saturated ragstone close to the spring was more easily worked by the quarrymen - in a similar way to the Caen stone used by the Normans which was softer when saturated but hardened when it dried after extraction. It may well be that the saturation aureole each side of the spring defined the width of the quarry, resulting in the long narrow features we see today.

Stoneacre, Otham

Looking again at the geological map 288, similar features appear along the River Len near Maidstone and presumably these were also roman quarry excavations. Although the contours around them have softened, evidence of these old linear quarry workings off the Len valley can be easily seen at Stoneacre in Otham, alongside Graveney Road in Senacre and near Leeds village (Maidstone's Vintners Park, Bearsted's Banky Meadow and the lower Lilk Brook valley, might also be candidate sites north of the Len along the Ashford Road).

Senacre Wood

Although this is a speculation based on observable geological details proving it archeologically after the clay has been weathered and turned to soil over the last 1600+ years is likely to be another matter. However it is fascinating to consider that a thousand years later the small streams created by roman quarrymen formed the foundation of Maidstone's industrial past with their water mills, fulling mills and later paper mills.

James Downer, Feb 2020

Click on the Reference Hyperlinks below:

Wikipedia: Kentish Ragstone and Hassock
KentOnline Roman History in Kent a report of Dr Simon Elliott's work “Ragstone to Riches”
Sheet 288 Solid and Drift BGS map (zoomable link)
KGG visit report Loose Valley Quarry Wood RIGS site
'SomersetLive' photograph of a Somerset mud horse

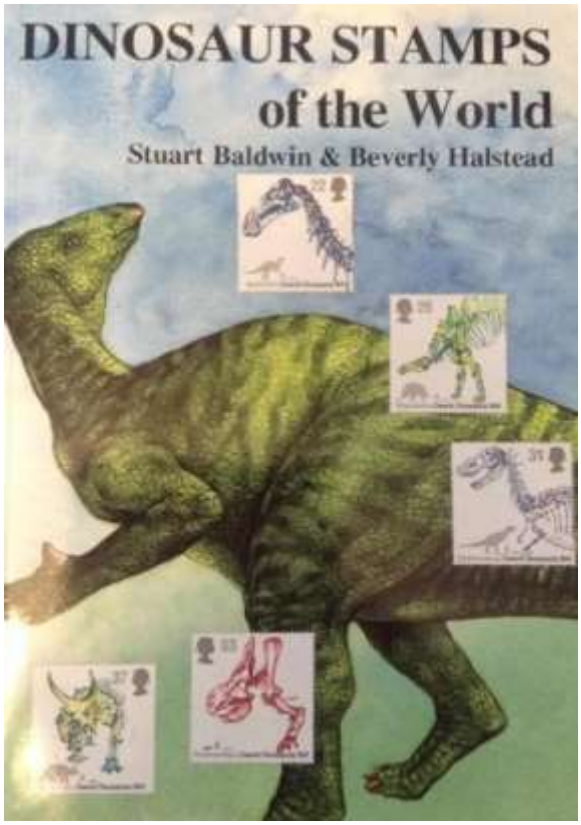
## Dinosaurs on Coins

**Gary Woodall**

Most of you will be aware that dinosaurs, and other prehistoric animals have appeared on commemor-ative postage stamps for years. Indeed the first one was issued in 1951 by India, and showed two mastodons. An unusual local connection to this stamp can be seen at the Wetherspoons Thomas Waghorn pub in Chatham. A large mural in the courtyard depicts this stamp. (To find out why it is there you will have to visit the pub).


**Mastodon stamp from India**

**Book by Stuart Baldwin.**




In 1991 the UK issued it's first set of commemorative dinosaur stamps. To acknowledge this Stuart Baldwin, whom many of you will know from the GA reunion, produced a book called Dinosaur Stamps of the World. This prompted me to start collecting dinosaur stamps, which I did for about five years. But the number of stamps issued each year increased tremendously and it became impossible to keep up with all the issues. So I contented myself with just buying any notable issues, such as the 2013 UK British dinosaur stamps and also getting every stamp in Stuart Baldwin's book.

Some of you may have seen the commemorative penny machines in the USA (now to be found in the UK and elsewhere). For those who are not, what happens is you put a penny (1 cent) and a couple of 25c coins in the slots. Then turn a handle and the penny gets squashed into an oval and an image printed on the coin. These are to be found at most tourist sights in America and those at museums often depict dinosaurs.


When I visited the Brussels natural history museum I saw the famous Iguanodon skeletons found in a coal mine at Bernissart in 1879. I bought a token commemorating the display, not a true coin, but pretty similar.

Anyway back to coins proper. This year the Royal Mint issued three commemorative 50p pieces depicting the first three dinosaurs ever found. Megalosaurus, Iguanodon and Hylaeosaurus. Unfortunately they were not released into general circulation but were only available in commemorative sets. Now I do collect coins, but usually those that are in circulation. But this was so special that I did send off for the which came in nice presentation packs with drawings and information about each dinosaur.

**A few squashed commemorative pennies**




**Bernissart Iguanodon token.**

**Megalosaurus, Iguanodon and Hylaeosaurus.**

# Stone Age Kent.

**The Zoom meeting of July 18th. Hosted and presented by James Downer**


After the introduction of some flint implements found at the Swanscombe site, James introduced us to the details of Swanscombe Woman.

**The Swanscombe skull**

This fossil from the Thames valley in England is in fact the back half of a braincase. It dates from a warm inter-glacial period about 400,000 years ago. It is generally regarded as belonging to an early Neanderthal woman. Her brain left its mark on the surrounding bone. Faint impressions of folds and blood vessels show it was the same size as human brains today, but shaped slightly differently.

The back of the skull includes a characteristic Neanderthal feature: a small pit marking the edge of where the neck muscles attached to the skull, called the suprainiac fossa.

The central skull section (occipital) was found in June 1935 in Swanscombe, Kent, by a local dentist A. T. Marston. The left part (parietal) was found at Swanscombe in March 1936 also by Marston. And the right parietal was found years later in 1955, by archaeologists J. Wymer and A. Gibson.

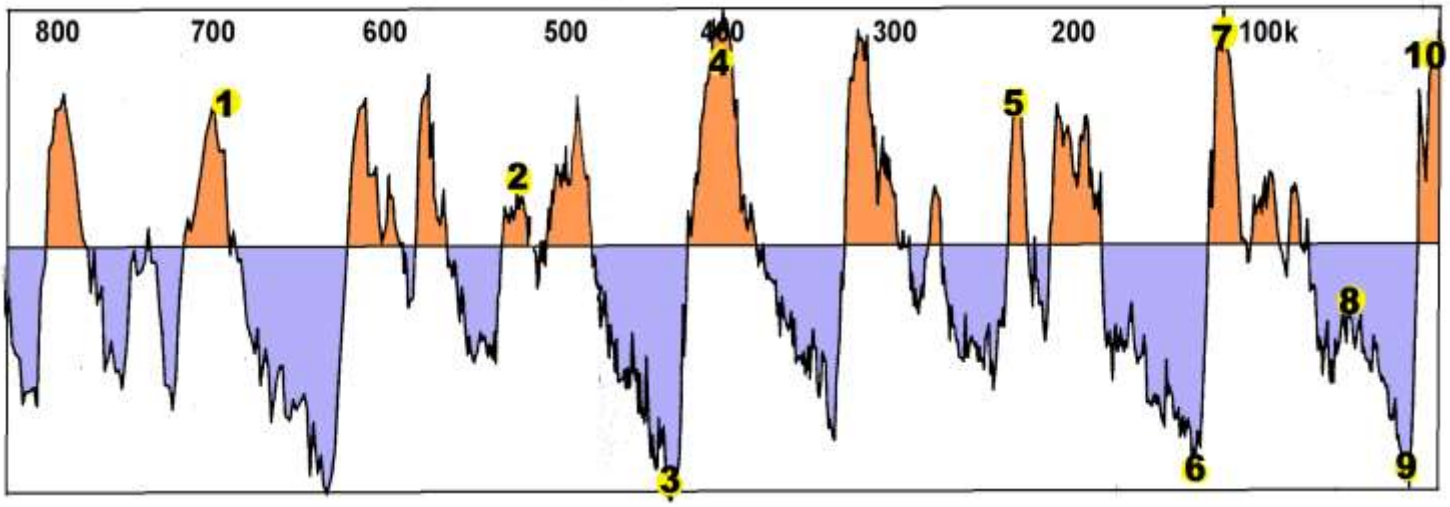
The Swanscombe locality is now a heritage site and is probably the best-known Pleistocene locality in England, if not the British Isles. On the next page is a photograph of the complete section, where the skull was found, (Ed)

Photos on this page are from Swanscombe Heritage / The Natural History Museum

**A section through the deposits at Swanscombe. The skull bones of Swanscombe woman were found in the Upper Middle Gravels. (Swanscombe Heritage)**

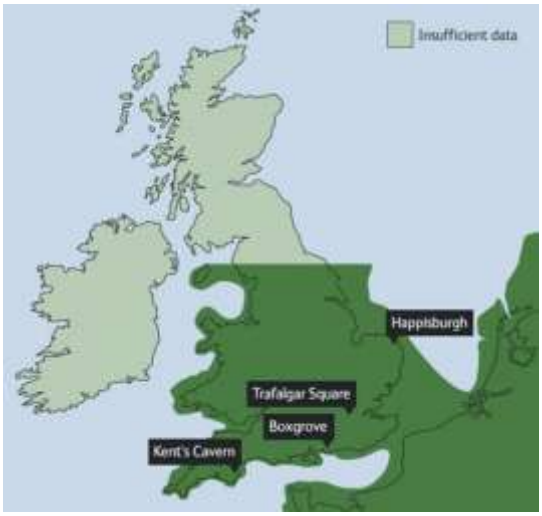

**The chart at the bottom of the page is adapted from the chart James presented—from "Britain—One Million years of Human History" Natural History Museum**

1. Stone tools found at Pakefield, Suffolk.
2. Human remains found at Boxgrove, West Sussex. Much increased immigration.
3. Anglian Glaciation
4. Early Neanderthals occupy Britain, Swanscombe, Clacton , Ebbsfleet. Hoxnian Interglacial.
5. Neanderthal teeth at Pontnewydd.
6. Severe glaciation, Britain deserted
7. Remains of hippos and lions found in Central London. Ipswichian interglacial.
8. Neanderthals return to Britain. Tooth found at Lynford, Norfolk. *Homo sapiens* arrives in Britain. Kents Cavern, Paviland, Wales.
9. Severe (Devensian) glaciation. Britain deserted
10. Today.



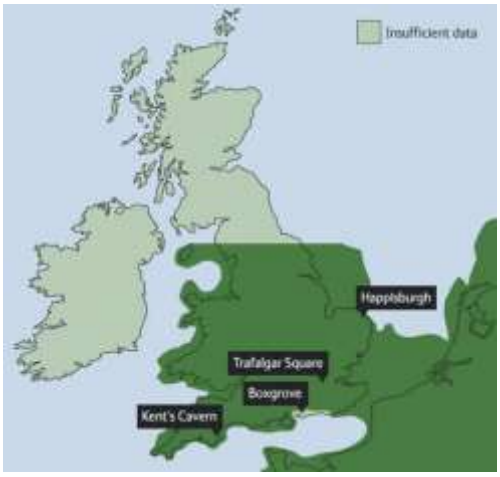

The chart shows relative temperature across 800,000 years, through glacial and interglacial periods

Constructed from data supplied by the Natural History Museum




About 950,000 years ago

A broad natural land bridge connects southeast Britain to mainland Europe. Footprints and stone tools at Happisburgh, Norfolk, were left behind by members of an unknown human species who crossed this bridge, becoming the first known Britons.




About 500,000 years ago
Nearly half a million years later, Britain remains connected to the continent.

Human bones and teeth found at Boxgrove, West Sussex, reveal the identity of Britain's inhabitants at this time: *Homo heidelbergensis*.


About 450,000 years ago
At the peak of the harshest glaciation, Britain is too cold for humans to survive. Thick ice sheets extend across northern Europe.

An enormous glacial lake builds up to the east. When it finally breaks free, its force rips through the land, forming the beginnings of the English Channel.


About 400,000 years ago

Temperatures have warmed and the ice has thawed. The sea has risen to present-day levels, but Britain is still connected to northern Europe by a narrow land bridge. This has allowed early Neanderthals, *Homo neanderthalensis,* to colonise Britain.

Over the next 350,000 years Neanderthals retreat from and return to Britain as temperatures fluctuate.


About 125,000 years ago

Britain is an island. Higher than today, the sea submerges low-lying land, such as parts of Norfolk and Lincolnshire around the Wash.

In the warm climate, hippos wallow in the River Thames and lions prowl where Trafalgar Square now stands. These animals got here as the sea levels rose, before the land was cut off. Neanderthals didn't make it in time, leaving Britain deserted by humans.

(Maps by The Natural History Museum)


About 60,000 years ago

Sea levels drop as water freezes into ice caps and glaciers, creating a vast grass-covered plain between England and the continent.

Neanderthals finally return. A jaw bone found deep in a cave near Torquay on the south coast reveals that within 20,000 years the species *Homo sapiens* also arrives in Britain.


About 20,000 years ago


The most recent glacial period is at its most severe. Ice covers much of Britain again. As conditions start to deteriorate about 25,000 years ago, humans disappear from Britain once more.


Today

Warmer now, the ice has melted and over the past 12,000 years sea levels have risen once again, forming Britain's familiar outline.

But the coast is never static - it will continue to change as sea levels rise and fall. As the sea erodes the coastline, it is exposing intriguing new evidence of Britain's early occupants.

(maps by The Natural History Museum)
The Europe that Was—(The North Sea Palaeolandscapes Project. Birmingham University)

**Natural History Museum**

## The Upnor Elephant

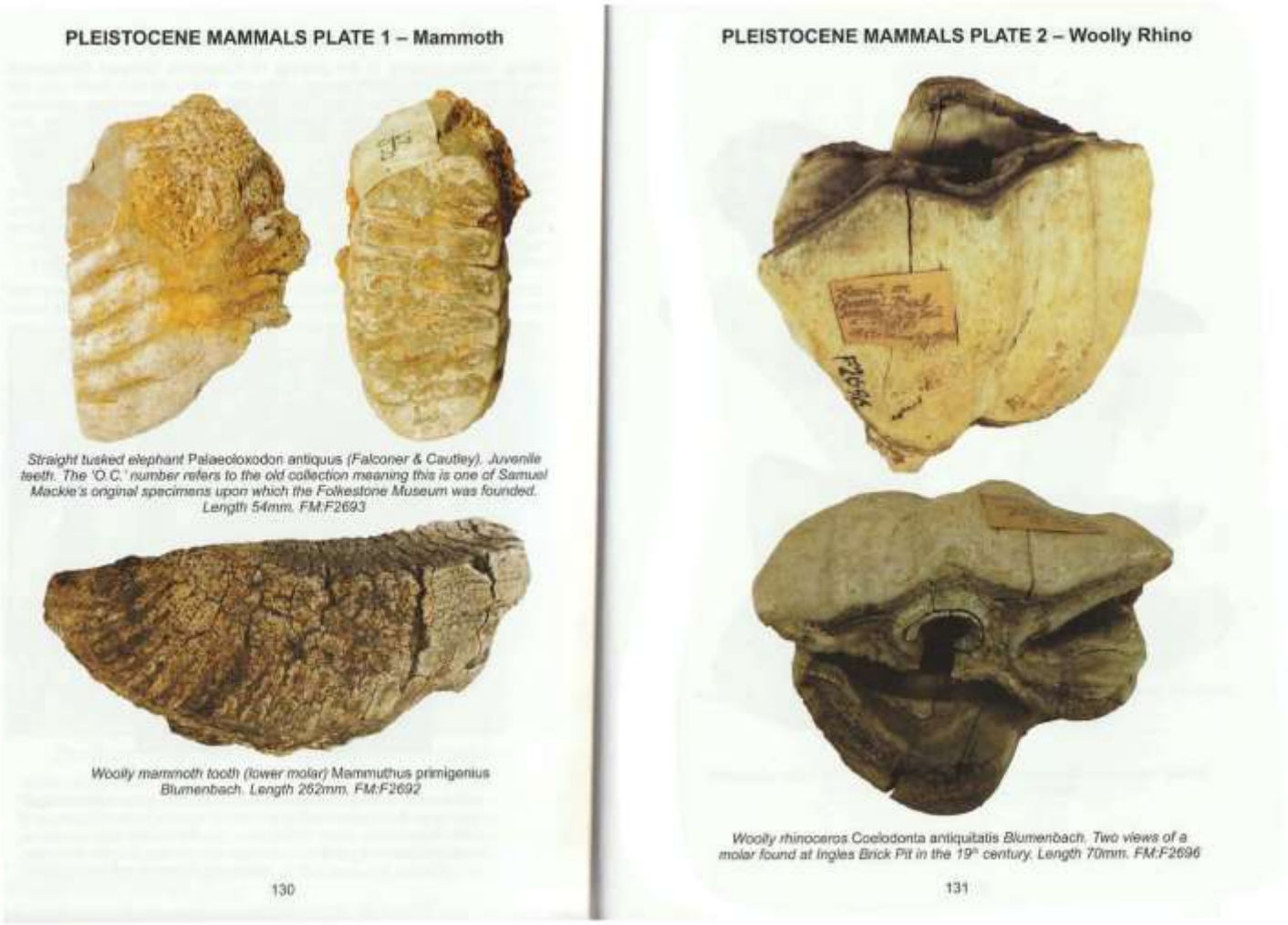
Important finds of straight-tusked elephant *Palaeoloxodon* in Britain include the famous 'Upnor elephant', (Andrews & Cooper,1928) a headless, but otherwise largely complete skeleton found in clay deposits of the River Medway in 1913 during the construction of Royal Engineer's Upnor Hard.

## Straight-tusked elephants

Skeleton finds in Britain are known from only a few sites. Two sites were found in the Lower Thames basin, one at Upnor, Kent and one at Aveley, Essex. Paleontological and archaeological excavations in advance of High Speed 1 revealed the 400,000-year-old skeleton of a straight-tusked elephant in the Ebbsfleet Valley, near Swanscombe. It was lying at the edge of what would once have been a small lake. Flint tools lay scattered around, suggesting the elephant had been cut up by a group of the early humans around at the time, likely *Homo heidelbergensis*.

In 2004 the skeleton of an elephant still surrounded by the flints used to butcher it some 400,000 years ago was discovered by Oxford Archaeology at Ebbsfleet.

**Pictures by Oxford Archaeology**



PLEISTOCENE MAMMALS PLATE 1 – Mammoth

*Straight tusked elephant* Palaeoloxodon antiquus *(Falconer & Cautley). Juvenile teeth. The 'O.C.' number refers to the old collection meaning this is one of Samuel Mackie's original specimens upon which the Folkestone Museum was founded. Length 54mm. FM:F2693*

*Woolly mammoth tooth (lower molar)* Mammuthus primigenius *Blumenbach. Length 262mm. FM:F2692*

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PLEISTOCENE MAMMALS PLATE 2 – Woolly Rhino

*Woolly rhinoceros* Coelodonta antiquitatis *Blumenbach. Two views of a molar found at Ingles Brick Pit in the 19th century. Length 70mm. FM:F2696*

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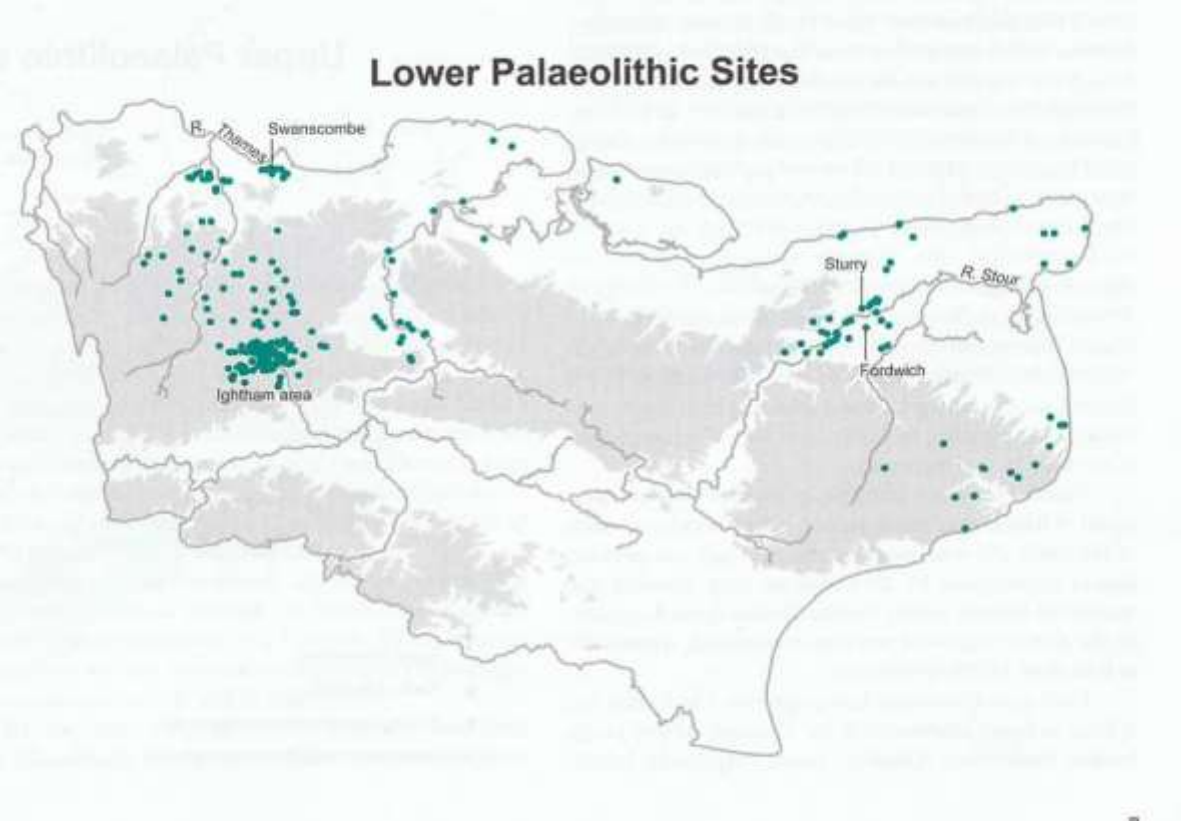
## Fossils from Folkestone, Kent by Phillip Hadland

**James then showed several maps of Kent. Here is one showing the Lower Palaeolithic sites.**
**Note the cluster in the Ightham area**



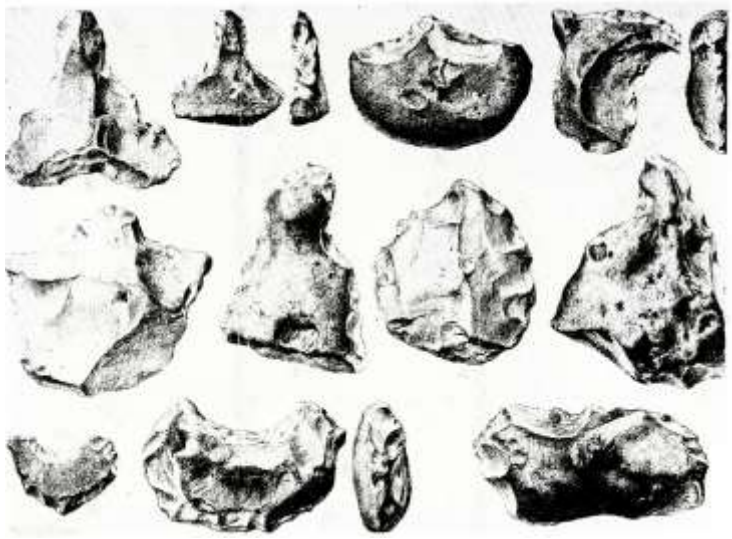
Kits Coty, Aylesford

Little Kits Coty—The Countless Stones

Owing to a potential problem of copyright, I have substituted the original three photos with these (of the same subjects). **This was not part of James' talk**. The British Isles are noted for their abundance of Stone Age 'memorials' (usually burial mounds) and Kent has a good supply of examples, three of which are shown here. **Kits Coty**, (near Blue Bell Hill) with its cap stone, reminds me of several others around the country—Lanyon Quoit, in Cornwall comes to mind. The structure would have been part of a burial mound and would have originally been covered with earth. Just to the south of Kits Coty is **Little Kits Coty**, also known locally as **The Countless Stones**, - it being difficult to ascertain their exact number. Little Kits Coty is a more degraded example, but probably has more in common structurally with **Coldrum**, near Trottiscliffe, to the west. The fact that Coldrum is not behind metal fencing makes it, in a way, more attractive, but it is probably more damaged than Kits Coty. None the less, in 1910, F. J. Bennett found the remains of 22 persons buried in the chamber. These and the stone implements found with them indicated a Mesolithic age, and it seems likely that this points to a similar age for Kits Coty.

Coldrum

Coldrum was dedicated (1924) as a memorial to a local archaeologist, **Benjamin Harrison**. Harrison made a collection and study of what (he believed ) were very crudely-worked flints, scattered over the downs. He surmised that these were the work of very primitive humans and Joseph Prestwich gave them the name of 'eoliths' - dawn stones. Harrison referred to them as 'Brownies'. Harrison's fellow collectors, based on Ightham were, thus, also referred to as The Brownie Group. The problem is that the 'design' of these items tends to collide with naturally- occurring flints, where nature was—or is—the agent and not humans. Various tests have been devised as a way of ascertaining their true provenance but many examples still defy attempts to confirm authenticity. Harrison seems to have been more convinced, and amassed a large collection above his shop in Ightham village. There was the idea that those found in Plateau Gravels were older than those found in association with River Gravels. This was based on the idea that the high-level gravels were the oldest river terraces. Attempts were made to prove that the oldest gravels contained most of the eoliths. This proved inconclusive because of the effect of 'selective collecting'. Put simply, once you have found the good stuff, you then become blind to the rubbish! Put another way, you will always find what you expect to find. The higher gravels never did give many well-shaped implements, while the younger gravels rarely any eoliths.

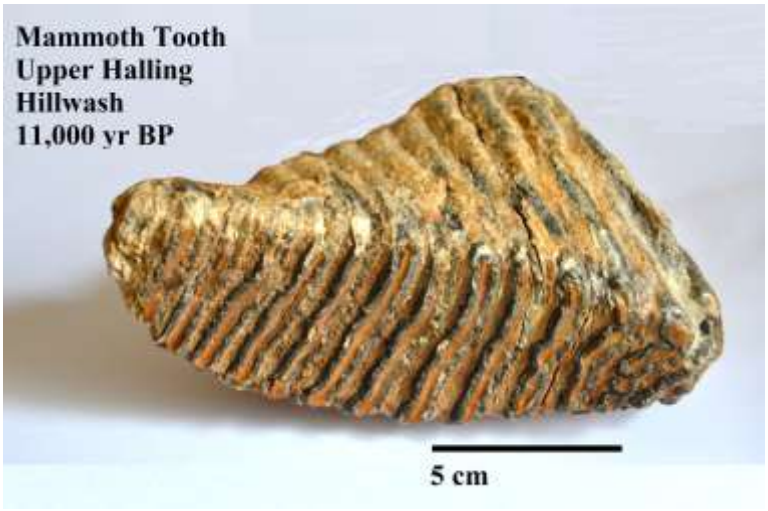


Eoliths

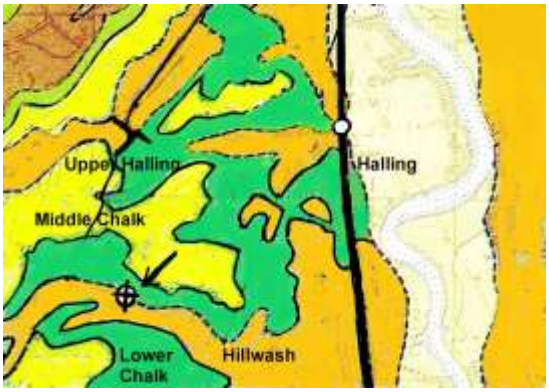
(Kits Coty and Coldrum Photos by Nick Baker.
Eoliths—NHM -Joseph Prestwich collection )

A Zoom meeting was arranged on July 15th—Hosted by James Downer and joined by Ann Barrett, Tony Mitchell, Nick Baker, Dave Talbot, Brian Miles and Gary Woodall. In anticipation of other input, Nick prepared a short presentation—entitled **Stone Age Kent in 10 pictures.**

This is a journey in Stone Age Kent using a very few specimens, so it covers a wide range of aspects, from large teeth to microfossils, and human implements. So beginning with large teeth, in this case Mammoth. The first picture is of a specimen from the **river gravels** at Aylesford. The location is the sandpit on the west side of the Aylesford-Eccles road, where the gravel was overlying Folkestone Sand. The tooth is somewhat eroded.

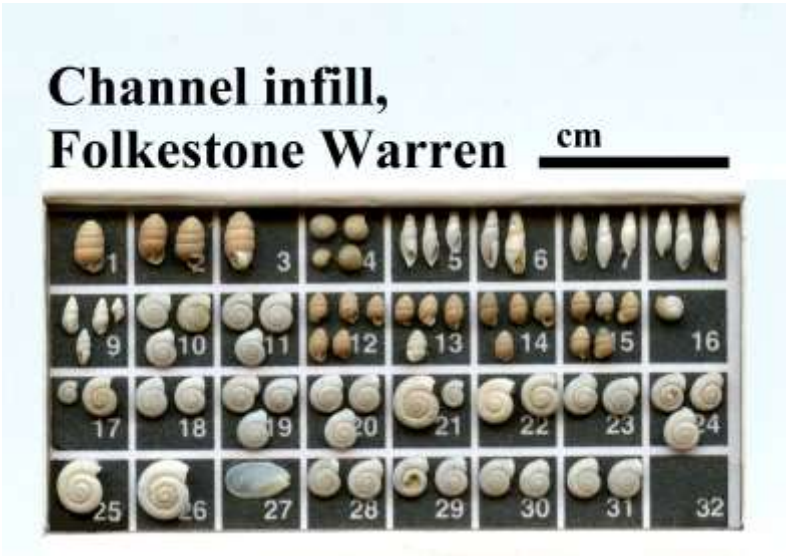

The second tooth is better preserved and also quite a different environmental location. This is from Upper Halling, on the west side of the Medway, and somewhat unusual in that it is from a **hillwash** deposit. The location is shown on the map—the arrow and target.




The area around Upper Halling has been heavily quarried for chalk. Above the Chalk are patches of hillwash, usually known as '**head'**. One needs to conclude that the mammoth were wandering some way up the slope from the river. I am against the view Mammoth wandering in a snow-covered tundra. I think they would have had better food supply in the warmer forest. But not that much warmer, otherwise, why the long hair? - so forest, a bit like parts of Siberia today.

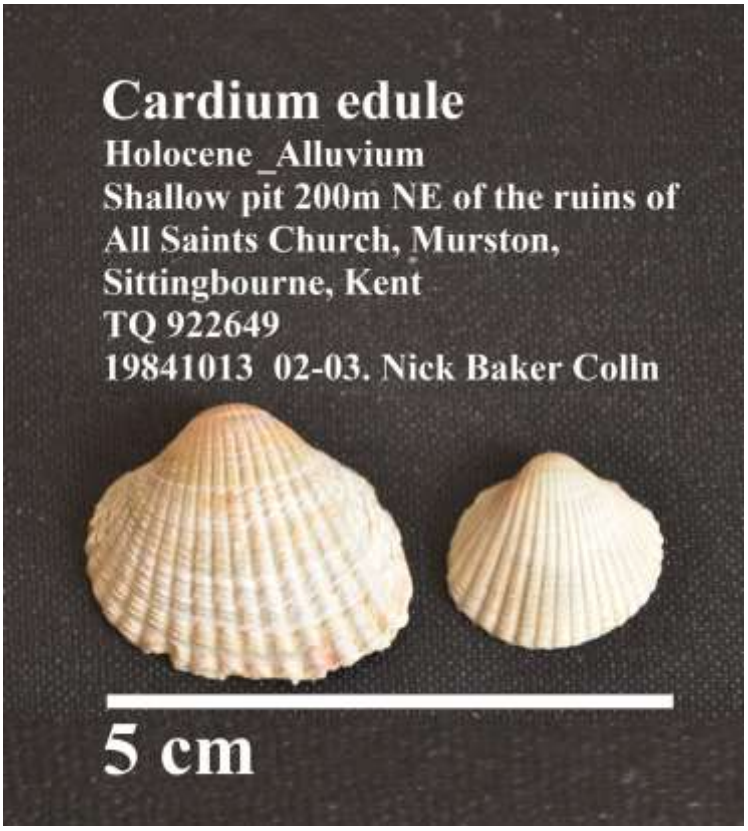
Carbon fragments within the deposit gave an age of 11,000 years BP. So this is just at the end of the ice-age. The deposit also has a fauna of small gastropods. In the display nos. 1-9 came from the Upper Halling site. Nos 10-20 came from a **channel infill** at Folkestone Warren. That Folkestone location was / is a rich source of small gastropods as shown in the micro-slide (See below-left)


**1-9 Hillwash, Upper Halling**
**10-20 Channel infill, Folkestone Warren**

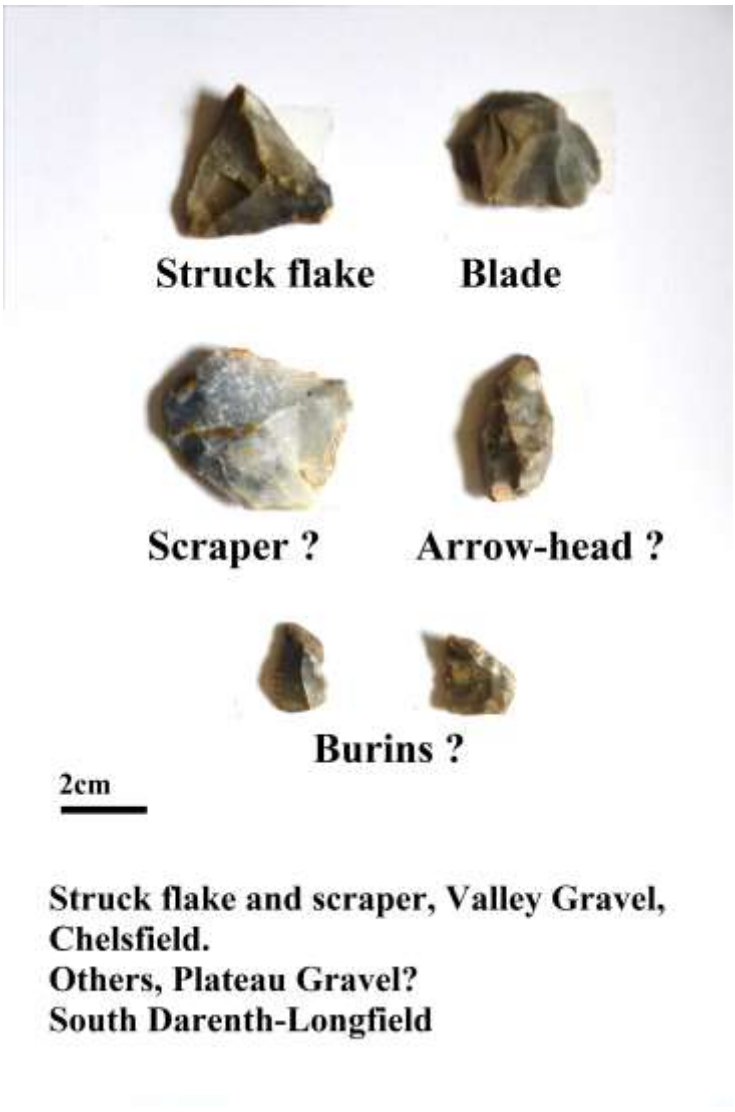



The fauna is, of course, quite modern. Note, no's 1-3 are *Pupilla muscorum,* and there are several species of *Planorbis* and *Vallonia*.

There are many examples of freshwater deposits around the county, like the **Nailbourne** deposit near Newnham, Mentioned in the **Maidstone BGS memoir**. **(Worssam-1963)** However, one has to remember that such deposits can be well into the Holocene, although still Stone Age. The Upper Halling deposit, if the dating is correct, would be early Mesolithic.

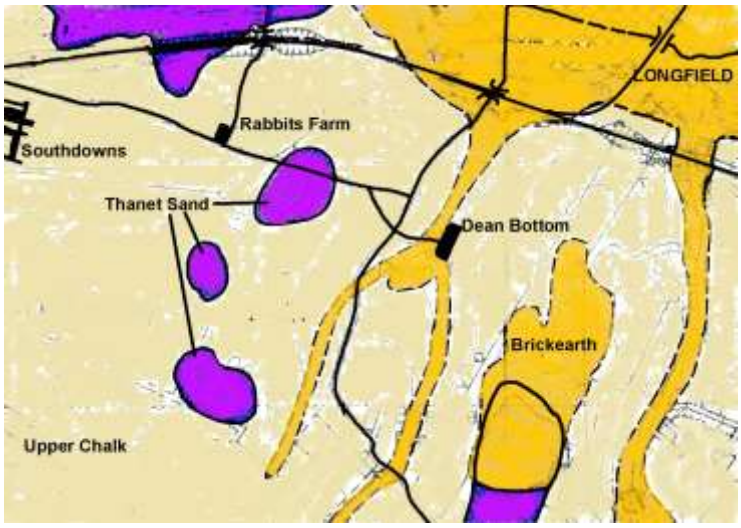



And we also have to consider this when we are dealing with **alluvium**. This is usually a sea or river deposit and almost always post-glacial (**Holocene**) - and if Stone Age, right at the end. Large spreads of alluvium occur north of Murston, near Sittingbourne. The *Cardium edule* was found in a shallow pit in the area. Marine Pleistocene is rare in Kent, but more common in neighbouring counties, such as at Mersea in Essex.




**Struck flake and scraper, Valley Gravel, Chelsfield.**
**Others, Plateau Gravel?**
**South Darenth-Longfield**

And now it is time to consider the Human effect. To the right is a selection of implements from Kent. The struck flake and scraper? Were found in **valley gravels** at Timberden, near Chelsfield (found in Feb-March 1961), while the remainder were found in the South Darenth-Longfield area (2005). The map shows the location of the latter.




Dewey (1924)(in the **Dartford BGS memoir**) states that , while the plateau to the east of Horton Kirby is free of Clay-with-Flints, it is the best source of Moustier implements in Kent. Also that the implements are found on the edges of the Thanet Sand outliers. Why this is so is not clear, but it was the source of those found by me , about 300 metres ESE of Rabbits Farm (see map). Our former member—Don Searle helped to identify some of the items.


The item on the left was found recently (2018) just SE of Southdowns village (on the edge of the map). First of all, if it a scraper, then the rounded edge is the working part. Most of the edges show percussion marks, and it is likely that the large rounded area in the lower picture is the original fracture. Minor working then followed on the edges. But minor working was then done on the straight (non-functional) margin. This may have been done for easier handling—the original broken surface being too sharp to handle otherwise.


Bone fragments are far from uncommon in the Pleistocene and Holocene. Sometimes they are genuine fossils, more often they are recent burials, garbage etc. The illustrated example was exposed in a lane bank but was at least two metres below the ground surface. The section was of what appeared to be brick-earth, and it seemed unlikely that modern disturbance could have taken place. It appears to be a leg bone ?femur. Wolf, dog, deer, and if human, it's size would suggest a child. So, a fatality and if human, perhaps a Stone Age homicide?

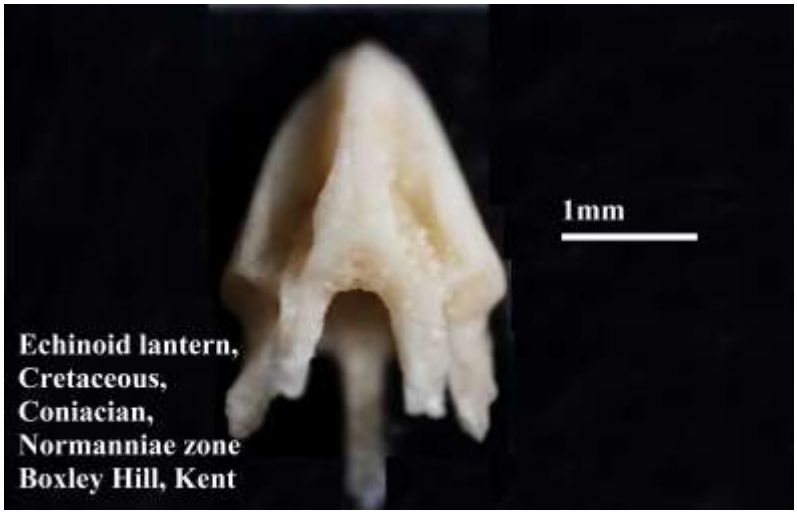
References

Dewey, H. *The Geology of the Country around Dartford*. (1924)

Worssam, B. W. *The Geology of the Country around Maidstone* (1963)

## STOP PRESS

Misidentification ?




In a recent talk on micro-fossils I identified the item on the right as part of an **echinoid.** Now, if I had said **echinoderm** I might have been justified, because a shout came from, one, Andreas Kroh, Natural History Museum, Vienna, who said that the item was the calyx of a **planktonic crinoid**.

I'm inclined to concede that Andreas Kroh is correct but I would also like to go for that grand old tradition of the second opinion. I hope to report sometime soon.

Nick Baker