

Elmley Hill - A small site with a big history

Elmley Hill is situated on the southern side of the Isle of Sheppey to the north of the Swale. It is actually a series of small hills rising up through the surrounding marshland - the last visible remnants of a London Clay peninsula on the south western corner of the island. The area forms the western fringe of the Elmley nature reserve, and can be reached on foot along the coastal footpath from the south side of the Sheppey bridge. It is shown on the geological map as being an isolated exposure of the London Clay but, as has recently been discovered, has quite a lot more to offer.

The site has been known about for quite some time as a source of London Clay fossils-I have been told that some limited work was carried out in the 1970's by Cooper. The site has also recently been visited by representatives of the Tertiary Research Group who noted small quantities of shark's teeth from the beach area.

Following the relatively recent discoveries of other London Clay sites in Kent such as Seasalter, Tankerton, Chetney Hill and Hampton Pier - all indicated in a similar manner on the geological map of the area, club member Tony Vale phoned me to suggest that we give it a try. Although no information confirming the level of the London Clay had been obtained, we were fairly confident from the south to north dip of the north Kent Tertiary deposits that the clay would be older than that exposed on the well known northern Sheppey coastal sections between Leysdown and Minster. We were also fairly sure that being a river site, there would be relatively low amounts of erosion as with Chetney Hill and Burnham in Essex.

We decided to make a low key visit early one morning at the end of March. Tony, David and myself arrived on a falling tide and parked just to the south of the Sheppey bridge at the end of the old road onto the island. The footpath runs along the top of the man made sea defense adjacent to the Swale and straight away we noticed that the bank was partially constructed from London Clay and contained a small number of fossils. Although quite interesting, this clay had obviously been imported from elsewhere on the island so we didn't get too excited at this stage. After about half a mile, the footpath swung inland to negotiate a small inlet. At this point some areas of marsh clay were visible between the sea defense and the high tide mark but no London Clay exposures were apparent. We continued on into the nature reserve at which point you are advised to walk along the bottom of the artificial bank. When we emerged at the other end of this section we could see the small hills to the southwest. The footpath then continued on along the top of the bank and passed between another inlet area of marsh clay mounds and a low lying water-filled lagoon towards what looked like some old derelict concrete buildings. When we reached this area it became obvious that the first raised 'hill' was actually a man made concrete platform, possibly a wartime structure. The beach here was made up almost entirely of building rubble and concrete with no sign of any London Clay. On the south side of the concrete structure was what looked like a man made inlet, which had obviously been used as a dock as it contained the remains of a large boat. The beach on the south side of the inlet looked much more promising. As we got to it we could see the unmistakable splinters of broken septarian nodules - we had found the site.

The first exposed London Clay section consisted of a small, muddy beach with London Clay, septarian and phosphatic nodules and modern rubbish in equal measure. There was a low exposed cliff face which started off as modern topsoil and rubbish and then became London Clay as it rose up to the south. Almost immediately we started to find fragments of lobster and crab in the phosphatic nodules - it was starting

to look very promising. After a small amount of time collecting fossils here, the first unexpected discovery was made - I started to pick up worked flint flakes and blades. Although this is not uncommon at river sites in the area, the sheer volume of material, especially as we worked our way south, made it clear that this was a very interesting mesolithic site. We moved on from the first hill section and around another small length of man made sea defense. On the south side of the sea defense more London Clay was exposed but it was noticeably different from the first area. The beach was at a raised level and had eroded back behind the end of the sea defense and it also appeared that the clay was re-worked - it may have been artificially 'banked up'. The evidence for this was the way in which a thin but noticeable section of marsh clay was evident at the base of the low cliff - below the London Clay! Further evidence for this clay being from a different source were the finds, which I will come on to a bit later.

This section continued for quite some time with lots of very muddy clay and virtually no nodules or rubble. At the end of the marsh clay section the beach took on a more familiar look with phosphatic nodules and lots of flint pebbles. There were still a number of worked flints but there was also now a considerable amount of iron pyrite and it was in this pyrite that we first started to find sharks teeth. At first, we didn't notice the teeth as they tended to be covered by an horrible dark algae, but as we started to recognize their shape we realised that there were quite a lot of teeth. After collecting in excess of **50** teeth between us in no more than half an hour, we moved on to the final and possibly the best hill section. As we approached the hill, London Clay appeared to be in-situ as laid down with phosphatic and septarian nodules still in place and had begun to show through on the beach. We probably collected the largest amount of fossils from this section, a lot of which were very fresh and some still being in-situ. It was also where we made the second unexpected discovery - large amounts of extremely good selenite crystals. At first we were collecting them off the beach but then we realised that they were washing out of the base of the cliff face, in fact there was a whole layer of the crystals. We also discovered at this point that the foreshore, which was now fully exposed on the low tide, was actually a London Clay platform. It was, however, extremely silty and therefore virtually entirely obscured. As we continued south toward the end of the hill section, which was the last area of exposed London Clay, we were finding more and more worked flints. Then, as the clay dipped down to the beach at its southern limit, a marsh clay bank took over. Less and less septarian and phosphatic nodules and more and more flints were evident until the fossils dried up altogether. However, as the riverbank turned sharply to the east, the in-situ beach clay suddenly turned from London Clay to marsh clay and we suddenly realised that the worked flints were actually in-situ in the beach. We finished the visit by collecting a large amount of flints in this area and by making our final unexpected discovery. Within the marsh clay bank at the top of the beach was a thin black seam, which eventually dipped down to beach level. At the point where the seam was washing out we found a number of pieces of pottery. We didn't know it at the time, but we have since been told that the pottery is Bronze Age and that the black seam is possibly a preserved Bronze Age ground surface.

Since the first visit, a number of us have been back to the site and many more interesting finds have been made. The fossils that have been found so far appear indicate what we expected that the London Clay is older than the north coast of Sheppey, possible around the B1/B2 boundary as a lot of crynoid has been found which is a very good 'marker' for that particular level. The predominant crabs are

Cyclocorystes pulchellus and Portunites incerta and the predominant lobsters are Hoploparia sp. and Linuparis scillariformis, which is what you would expect of a BI/132 boundary site. There have also been a few 'rogue' fossils found, usually associated with much younger London Clay, which may confirm that part of the site is artificially banked up clay from another source. Many more interesting mesolithic flint tools have also been found including arrow heads and a tranchet pick. There has also been a lot more pottery found around the working floor area and Tony picked up a couple of nice bottles on the foreshore. I'm sure that club members will be turning up a few more interesting finds at the site in the future, although with the onset of warmer summer weather and lots of weed and algae, it will probably not be too productive until the end of autumn now - but you never know!

Martin Rayner
