

GEOLOGIST'S ASSOCIATION FIELD TRIP TO BEACHY HEAD

Sunday 19th March 2011

Richard Pollock

Cast your minds back to earlier in the year when summer came early, although it wasn't quite Easter yet, we did have a blazing hot weekend in March for this field trip. This led to the unusual site of very few people slipping on the way down to the beach because of the lack of the normally wet and slippery Lower Chalk. Any spills were due to the seaweed alone!

You will know that I have a certain affection for the Cretaceous, especially the Chalk, so once again I trekked over to Sussex and joined the GA's Field Trip to Eastbourne earlier this year. We met up at the cafe at the start of the footpath (Foyle Track) leading down to the Beach at Cow Gap. The path tracks down across a series of old land slips caused by rotational faults over the underlying Gault Clay. One example of this can be seen in figure 1, where the West Melbury Chalk (chalk marl) can be seen dipping back into the cliff face.



Fig.1: The beach at Cow Gap

The regional dip of the Cretaceous rocks here is southwards into the sea, formed by the Wealden Anticline.

The succession as seen in the walk from the beach at Cow Gap to the lighthouse at Beachy Head is shown at Figure 2 overleaf.

The dark grey Gault did not give up many fossils and was somewhat difficult to see, but excellent trace fossils were to be seen in the Upper Greensand (figure 3).



Fig.3:Trace fossils in Upper Greensand

The overlying Glauconitic Marl contains abundant phosphatic nodules, some of which are casts of ammonites and gastropods, some may be derived from the underlying Greensand. The Chalk Marl lying directly above contains an abundant *Inoceramus crippsi*, ammonites especially *Schloenbachia* and *Mantelliceras* and echinoids.

The succession from the Glauconitic Marl, the overlying Chalk Marl and the Zig Zag Chalk can be seen in figure 4 overleaf.

The Chalk Marls show strong rhythmic patterns of marl/limestone thought to be caused by climatic factors (Milankovich cycles) similar to the flint banding in the Upper Chalk. The lessening marl content higher in the succession is thought to show deepening of the sea and an increasing distance from a

Plenus Marl
Zig Zag Chalk (grey chalk)
West Melbury Chalk (chalk Marl)
Glaucinitic Marl
Upper Greensand
Gault Clay

Cenomanian (Old Lower Chalk)

Upper Albian

Fig.2: Succession in the Upper Albian and Ceno-



Fig.4 Glaucinitic Marl with the overlying Chalk Marl and Zig Zag Chalk

terrigenous sediment supply.

The Plenus Marls can be seen in the cliff face just east of the lighthouse. The belemnite *Actinocamax* is usually abundant in the Marls where exposed on the seashore.

It wouldn't be a trip to Eastbourne and Beach Head without a photograph of the lighthouse and it was at this point that we started the return journey and more fossil collecting (Figure 5).

I did manage to find a few ammonites this time, but mostly in fairly poor condition, a *Turrilites* sp and a possible *Anisoceras* sp, both heteromorph ammonites.

A good day out, made even better by somewhat tropical temperatures, something we really have not felt for all the rest of the summer. My thanks to Geoff Toye for leading

the trip and of course, to the Geologist's Association.



Fig. 5: Plenus marls in cliff face

The birth of a new island following the sub-surface eruption of the El Hierro volcano in the Canary Islands on 5th. November 2011.

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