The Crag Sites of Suffolk – October 2013

Our last field trip of 2013 was to Suffolk to look at Crag sites with Bob Markham of the Suffolk Naturalists’ Society and GeoSuffolk. We were greeted at the rendezvous by a flash of lightning amid a sharp rainstorm which then departed, thankfully to be replaced by bright sunshine for much of the day. The geological site at Sutton Knoll reveals a Coralline Crag island which had the Pleistocene Red Crag Sea around it 2.75 million years ago. This site is the richest fossil deposit in England. The old quarry of Coralline Crag has a hard limestone at the top, formerly used as a building stone. Here, the aragonite in the shells has dissolved and redeposited as calcite, cementing the sand grains and remaining fossil material. Once weathered, this makes a hard building stone and we could see this in old walls at the nearby farm. Below the harder beds lie fossiliferous shelly sandstone with silty beds beneath. The brachiopod, lingula sp., has been found in the Coralline Crag – its last British occurrence – together with bivalves, corals and more than 100 species of bryozoan, equivalent to the present-day Mediterranean. Charles Darwin wrote a hugely detailed book on the barnacles of the Crag, which remains an important monograph today.

Next to this quarry is the “Pliocene Forest” being created by Barry Hall, a GeoSuffolk member who lives in Essex and has a background in horticulture. There are now over seventy species of trees growing there, chosen as the closest living relatives of the trees whose pollen was collected from the Coralline Crag in a nearby coastal exposure where Richard West identified 170+ species. Diligent care by Barry brought all but ten tree specimens through last April’s drought. We paid special attention to the two plants sponsored by
ERMS, one a member of the cypress family and the other a platycarya, which had female cones on it and would eventually grow to 3-4 metres in height; it is a member of the walnut family with long winged nuts.

We then moved around the Knoll to Bullock Yard Pit which showed three horizons of Coralline Crag. Here this rests on London Clay three metres down where there are phosphate nodules. The bottom horizon contains large shells of the bivalve \textit{Arctica islandica}, together with \textit{pecten sp.} (scallops). There are also large \textit{terebratula, cardita} and \textit{scaphella} gastropods. Nearby, we saw an exposure in which the steeply-sloping contact between the Red Crag and the Coralline Crag was identified on fossil evidence alone – it is distinguished on the incoming of larger gastropods and there is no colour contrast between the beds.

The next stop around the Knoll was the Chicken Pit, originally dug twenty years earlier, which showed Red Crag material above the London Clay under a steep slope of Coralline Crag. Here, there are blocks of Coralline Crag resting in the Red Crag, as though blocks from the cliff had fallen onto the Red Crag beach (see diagram).

We then drove on to Buckanay Farm near Alderton village. Bob pointed out the “cave paintings” of buffalo on a barn wall, painted during the Second World War by American servicemen. The quarry in the Red Crag sandstone had been recently worked for more sand and gave us a circle of spectacular, near vertical faces showing dune-bedding all around us to great effect. At the time of our visit it was the preserve of four young dirt bike enthusiasts, the farmer’s son amongst them, and they were willing to leave for half an hour to enable us to inspect the sections and do some collecting. All around the quarry, the cross-bedding presented lots of shelly
horizons from which bivalves, gastropods including *Neptunia contraria* and various worm tubes were collected. The fauna was notably different from that at Walton on the Naze.

Our last stop was at Bawdsey East Cliff, where we looked at the London Clay beneath the Red Crag along the foreshore. The amount of coastal erosion since the emplacement of large blocks of hard rock, much of it Norwegian larvikite and French Carboniferous Limestone, to protect the base of the Martello Tower was very marked with recent cliff falls and the spring tide coming right up to the cliff line and removing all debris. A few sharks’ teeth were found in the shingle by members. Convoluted overturn of the clay and Crag interface is revealed beautifully in the fresh cliff face.

The weather window which we had enjoyed for most of the day then closed and we walked back to the car park with rain at our backs. Thanks once again go to Bob Markham for his popular and authoritative presentation when taking us around this very pleasant corner of Suffolk.

David Turner