

# Aust Cliff and Manor Farm trip with Simon Carpenter, 19<sup>th</sup> September 2015

*By Mellissa Freeman*

Our first stop, Aust Cliff, designated an SSSI, is situated at the eastern end of the Severn Road Bridge over the Severn Estuary. The site is known internationally for the array of fossils to be found, from reptilian ribs to shark fins and fish scales.

The sediments from late Triassic through to early Jurassic are visible, both here and at our second stop at Manor Farm, and record the changing environment from arid / semi-arid desert conditions (red beds of the Mercia Mudstone Group formerly known as the Keuper Marls), to the fossiliferous, shallow marine and lagoonal facies of the Rhaetian Penarth Group. The abundant fossils that can be found on the beach here are mostly from the Rhaetic sediments towards the top of the succession. The Mercia Mudstone and Penarth Groups overlie the older Carboniferous limestones which is only visible at low tide.

The stratigraphic column, drawn by our leader for the day, Simon Carpenter, is at Figure 1, Page 37.

The beds are easily distinguishable. Starting at the base of the cliff is the red-brown Branscombe Mudstone formation (formerly Keuper Marls). The Branscombe mudstone contains highly visible seams of Gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) that occur in both nodular form and veins;

vertical and horizontal. This is overlain by the green-grey silty mudstones from the Blue Anchor Formation followed by the black shales from the Westbury beds. The light grey Cotham beds, bioclastic limestones and calcareous mudstones called the pre-planorbis beds and the Blue Lias (early Jurassic) at the top of the cliff were mostly covered in vegetation here. The Pre-planorbis beds contain abundant marine fossils but there is no record of ammonites. Their first appearance marks the base of the lower Jurassic. We did find some large blocks of fallen material on the beach containing



Figure 2: Ammonite fossil

ammonite fossils.

We spent several hours on the beach fossil hunting before convening at the start point to compare and discuss our finds.

After lunch in the motorway services car park we headed off to Manor Farm. The whole area is a disused clay pit formerly used for the extraction of material that was utilized in the footings of the Second Severn Crossing. The quarry is mostly covered now. There is just a small section visible where you can see the rocks exposed that we missed at Aust;

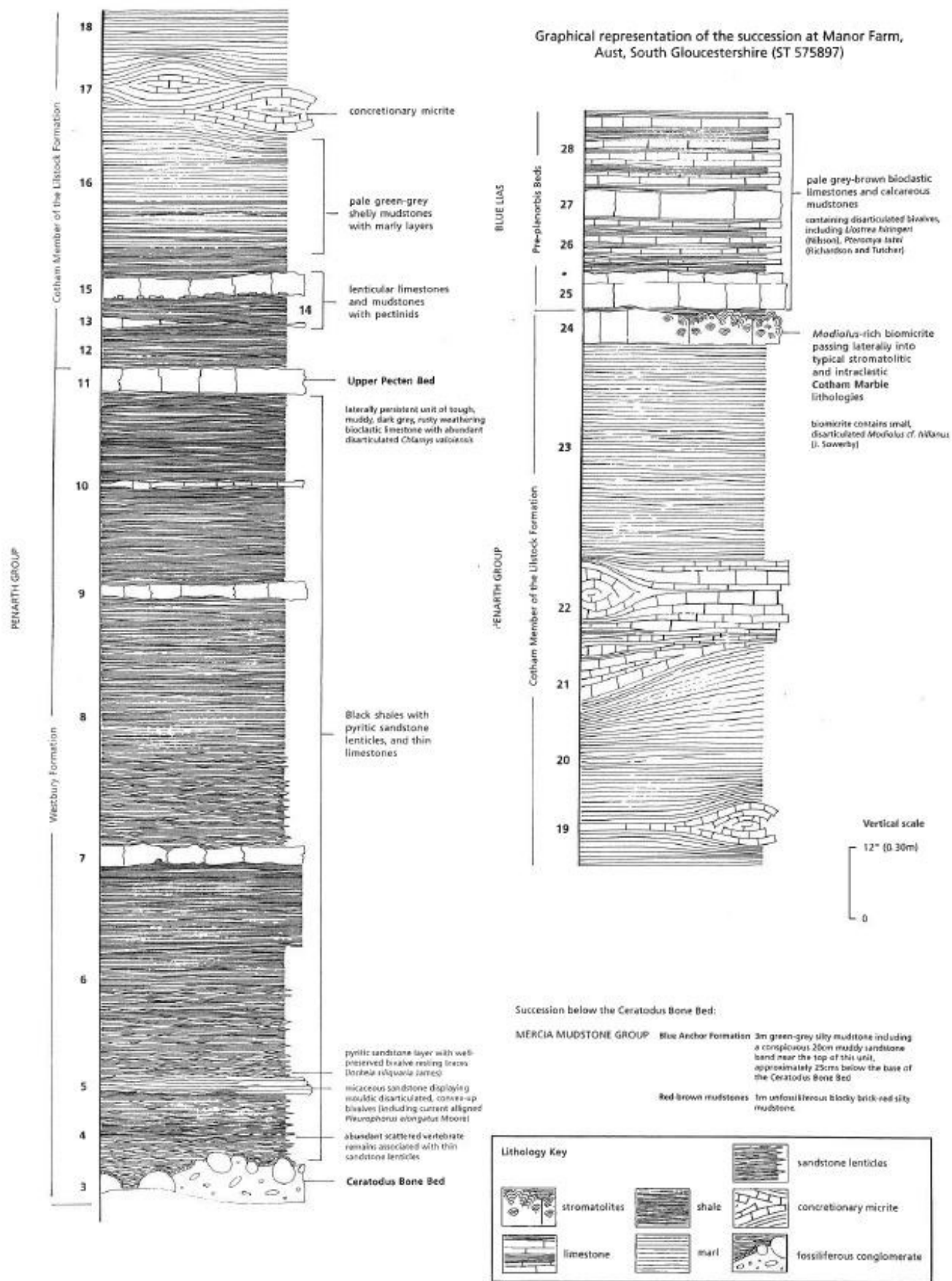


Figure 1: Stratigraphic Column by Simon Carpenter





*Figure 3: Fish scales and teeth*

the top of the Westbury Formation and the Cotham beds.

Simon had brought with him a series of spectacular vertebrate and invertebrate fossils for us to look at that he had collected from the site on previous visits. We then had a short walk from the farm car park. There is an information board at this site but unfortunately it, as well as some large boulders from the bone beds, are hidden away in the vegetation. Some of the group managed to get through the brambles to see some of the fossils. We couldn't find the board. At the exposures we were able to traverse along and inspect the mudstones at the base of the Cotham member before climbing up to look at the spectacular pale-coloured Cotham Marble. This is a Rhaetian stromatolitic limestone from the Penarth Group.

The fossils we found here were similar to those we collected at Aust, except for a small incomplete and broken ichthyosaur jaw and something unidentified. [Ed: see article on page 33]. A fabulous day!



*Figure 4; The group at Manor Farm*



*Figure 5: Fossil shell*