TUNNEL VISION OF DINOSAUR'S FLIGHT

From This is Bristol

Wind tunnels are usually used to shape the aircraft and cars of the future but researchers at Bristol University have used one to find out more about a flying dinosaur that last took to the skies millions of years ago.

Kuehneosaurs are possibly the earliest flying animals, taking to the air about 50,000,000 years before archaeopteryx, the world's oldest bird and even before large dinosaurs roamed the Earth. These early flyers used extensions of their ribs to form large gliding surfaces on the side of the body.

Kuehneosaurs, up to 70 centimetres long, were first found in the 1950s in a cave system in the Mendip Hills. Their lateral 'wings' were always assumed to be some form of flying adaptation, but their aerodynamic capability had never been studied.

Student Koen Stein, who did the work while studying for an MSc in palaeobiology at Bristol University, has shown that of the two types found in Britain, one was a glider while the other, which had much shorter wings, was a parachutist.

Koen said, "We decided to build models and test them in the wind tunnel in the Department of the Aerospace Engineering at Bristol. Surprisingly, we found that one type called Kuehneosuchus was aerodynamically very stable. Jumping from a five metre tree, it could easily have crossed nine metres distance before landing on the ground. The other form, Kuehneosaurus was more of a parachutist than a glider."

Professor Michael Benton, a member of the research team and head of department in Bristol, said, "By collaborating with aerospace engineers we can be sure that model-making and calculations are more realistic."

Kuehneosuchus and Kuehneosaurus (Stock photo)

SOMERSET'S FANTASTIC COASTLINE AS SEEN FROM SPACE!

Hugh Prudden

The arrival of Google Earth has brought new meaning to armchair voyaging. It can be downloaded to your computer in seconds with broadband. Type 'Watchet' in the search box and see the North Somerset landscape as viewed from space. Magnify by repeatedly clicking on the target area. The detail shown is stunning.

Two things have led to amazing detail of the structures on the foreshore. The satellite, by good fortune, observed at low tide and the tidal range in the Bristol Channel is quite considerable. Secondly, a lot of the formations consist of competent beds of limestone alternating with weak, easily eroded, mudstones. The faults and folds are clearly revealed.

The North Somerset coastline just west of Watchet as seen on Google Earth showing the Watchet/Cothelstone Fault

Some 1400 metres west of Watchet Harbour the dextral NNW trending Watchet-Cothelstone Fault is clearly shown. It is worth having the geological and topographical maps to hand. The E-W Helwell Bay Fault, so clearly seen in the Helwell Bay cliff face, is clearly shown crossing the foreshore.

Kilve beach (Stock photo)

Briefly, the rocks have suffered (a) extension during the development of the Bristol Channel-Wessex Basin, (b) compression, (c) strike-slip faulting during the Tertiary. Many faults were reactivated during later evens. No wonder that oil companies have used this coastline as a training ground.

The Mesozoic rocks along the Somerset coast are actively eroding as shown by the active cliff faces as far as Stolford. Eastwards there is a fine example of an accreting coastline with salt marsh, active and abandoned shingle ridges, tidal muddy channels, sandy beaches and sand dunes. Processes are dominated by the large tidal range and the eastward drift of sediments.

There is one aspect that the writer has not seen addressed. What is the reason for so much deformation along this part of the coast? Pipeline trenches in the adjoining clay vales of Ilchester and Sparkford show undulating flexures and some very tight metre-scale folds but nothing to compare with the deformation of the Somerset coast apart from the Mere Fault. Are there deep-seated weaknesses in the basement? Does the presence of the Palaeozoic formations in the nearby Quantocks have any bearing?

Might one suggest a walking holiday along the Somerset coast when you have exhausted the Jurassic Coast of Dorset and Devon?

- Walk east or west from Kilve Pill along the cliff top with light lunch or cream tea at the café near the Chantry. Take a look at the building stones in Kilve Church.

- Explore the shoreline at Stolford and eastwards. There is a National Nature Reserve at Stert Point with observation hide for bird watchers.

- The cliffs and foreshore on either side of Watchet are full of interest and be sure to get a copy of Eric Robinson's *The Geology of Watchet and its neighbourhood, Somerset. Geologists' Association Guide no. 66.*

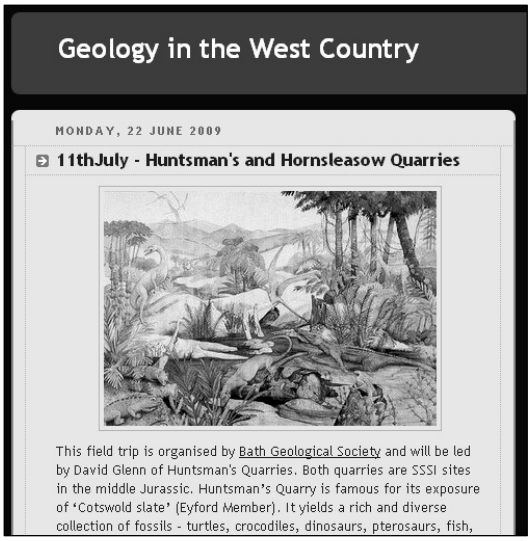
- For something different park by Minehead harbour and walk west avoiding the foreshore to Greenaleigh - one of Somerset's top localities.

Details of all these are to be found by Googling 'Somerset Good Rock Guide'

Interested in our local rocks and landscapes?

Click on to

http://geologywestcountry.blogspot.com



There are links to:

All local geological organisations

Museums with geological displays

Geology in education

And much, much more!!