

Jehol-Wealden Conference Report – 20th and 21st September 2013
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Last week saw the first ever ‘Celebrating Dinosaur Isle: Jehol-Wealden International Conference’ at the National Oceanography Centre (NOCs), Southampton, UK and hosted by the University of Southampton Ocean and Earth Sciences and the Confucius Institute. There were around 90 delegates for the talks and 40 for the field trip, including palaeontologists from all over the UK, Europe, China and the USA.



Picture by Stuart Pond – Day one at the NOC, Southampton.

As a venue NOC is hard to beat as the building sits on the dock front - and from the cafe are excellent views down Southampton Water, across the Solent to the Isle of Wight in the distance and it has superb facilities. A room was dedicated to displays and vendors; and next door was the lecture theatre, with lunch and refreshments served on the wide landing right outside the two, the proximity of which was useful as it maximised the time spent with other delegates.

As the title suggests, the whole meeting concentrated on the Early Cretaceous of the Jehol of China and the Wealden of Europe. The day kicked off with an introduction by conference organiser Gareth Dyke of the University of Southampton, followed by a brief welcome by Mark Cranshaw of the Confucius Institute. The first talk was by John Radley on the Geological Conservation Review and featured the work of Percival Allen on the Wealden climate, work that is still relevant today. In an entertaining talk Hugh Torrens then discussed the ‘first dinosaur’ as recognised by Richard Owen and discovered on the Isle of Wight. In the next room was the specimen itself, kindly lent by the National History Museum, and naturally it attracted a lot of attention. Jeff Liston then talked about the legalities of fossil collecting in China, where there are strict rules about moving fossils across even provincial boundaries. Pascal Godefroit was unable to attend but Mark Witton finished the first session with a typically excellent talk on Jurassic pterosaurs and their importance in understanding the evolution of Early Cretaceous forms.

After coffee Paul Barrett delivered a comprehensive and well-illustrated review of dinosaurs from the Jehol Biota. He was followed by Darren Naish who has been working on the *Eotyrannus* monograph and whose description of the specimen was very thorough, providing lots of information along with great images of the fossil. Dave Martill discussed the dentition of the pterosaurs *Istiodactylus* and *Longchengpterus*, again with excellent hi-res

photos of the specimens which looked spectacular on NOCs' excellent projector system. Unfortunately M. Matsukawa was also unable to attend the meeting but Martin Lockley delivered his talk in his place, no easy task considering the complexity of recreating ancient food webs and trophic cascades.

Lunch gave everyone a chance to really study the exhibits in the room next door to the lecture theatre. Apart from the thrill of seeing the 'first dinosaur' there were parts of a *Polacanthus* on display, with a very impressive ilium and sections of the sacral shield, as well as various vertebrae and parts of the pectoral girdle and limbs. A team from Dinosaur Isle had various specimens on show, including a complete *Iguanodon* mandible and some large *Baryonyx* teeth. The model of *Microraptor* featured in Dyle *et al's* Nature paper was present along with its balsa wood counterpart, more on that later. The chaps from Lyme Regis had fetched over a selection of fossils for sale and The Bristol Dinosaur Project also had a display on their local dinosaur, *Thecodontosaurus antiquus*.

The first of the afternoon sessions started with Zihui Zhang from Beijing discussing an enantiornithine bird skull and its implication for other enantiornithines. A small enantiornithine was also the subject of Dongyu Hu's (Shenyang) talk, and he was followed by Colin Palmer who gave an excellent talk on the work that went into the *Microraptor* paper mentioned earlier. Colin's talk finished with video of the balsa model of *Microraptor* being flown, and demonstrating the flightpath predicted by computer simulations was pretty accurate. Next up was Mike Howgate, who was expounding his view that *Microraptor* was in fact an 'archaeopterygid' bird and *Eoraptor* was a possible bird ancestor. Mark Young then talked about the "Shanklin Shocker", a large metriorhynchid with teeth similar to many extant fish species such as piranha in that when the jaw is closed they give a shearing motion, very effective for tearing lumps of flesh off prey. The images of the damage a cookie-cutter shark can do to a human leg could put a person off paddling for life.

The final session started with my own review of dinosaur ichnology on the Isle of Wight, and this was followed by Martin Lockley (who needs no introduction to vertebrate ichnologists) who showed some of the work being done in China at the moment, including some of the quite astonishing museums being built to house collections and cover track sites, including one shaped like a huge tridactyl print. Steve Sweetman then talked about his fascinating work on Wealden microvertebrate assemblages, and also showed a spectacular print from Cowlease Chine, in-situ in the cliff, made in mudstone and infilled with sandstone. Pam Gill closed the session with a comprehensive review of Wealden-Jehol mammals.

The evening was spent in the Red Lion in Southampton, a 12th century pub where delegates were entertained by Luke Muscutt and friends. Luke is a PhD student at the university and a brilliant musician. Needless to say, a good time was had by all and much discussion was had, including an impromptu ichthyosaur mini-conference in the back room.

Next morning the field trip started out from the Red Jet terminal in Southampton and we were soon heading across the Solent to East Cowes on the Isle of Wight, where everyone boarded a bus and headed to Sandown, home of Dinosaur Isle. The first stop was the beach at Yaverland, where under the guidance of expert Trevor Price delegates inspected the uppermost section of the Wessex Fm and the whole of the Vectis Fm, both of which are exposed in this small but very productive stretch of coast. The beach conditions meant the footprint layers were covered by sand, but everyone could search for fossils in the shingle and along the cliffs. Next up the trip visited the Wessex-Vectis junction and then spent some time examining the section, including the footprint-bearing beds of the Shepherd's Chine Member, eventually making its way towards to the Lower Greensand and its beautifully preserved shelly fossils. I'm pleased to say dinosaur bone was found!



Day two – along the Wealden exposure at Yaverland.

After an introduction by Jeremy Lockwood a superb lunch was had at Dinosaur Isle, where the lab was open and local collectors were present with their finds and palaeontologist Steve Hutt was present to discuss the collection. This included new *Iguanodon* material from Nick Chase (who donates to the museum), a piece of thyreophoran armour and some quite incredible *Baryonyx* material representing at least two animals; let us hope these important specimens are not lost to science.

Next on the itinerary was a visit to Hanover Point and Brook Bay on the west coast of the island, led by Steve Hutt, Penny Newbery and Trevor Price. There delegates inspected the dinosaur footcasts that litter the beach on this part of the coast and which were particularly abundant given the time of year (I'm pleased to say) and spent time prospecting in the shingle for fossils. More bone was found.



Day two – looking for dinosaur bone in Brook Bay.



Picture of the chair lift on day two at Alum Bay.

Following pickup by the bus, everyone was taken to the Needles Park where many brave souls rode the chair lift to the beach to look at the famous Alum coloured sands, and upon re-ascent were treated to a fine buffet and drinks. We took the Red Jet back to Southampton around 9.15pm and the conference ended.



Delegates on day two examining the Eocene coloured sands at Alum Bay. In the distance (below the cloud) can be seen the eroded upper surface of the Chalk which forms the northern side of the Needles promontory.

This meeting was a resounding success. The talks were all fascinating (I'm excluding mine here, others can be the judge of that), the venue and organization was spot on, as was the field trip. It was great to see so many Early Cretaceous workers in one space, and personally I'm hoping a lot will come out of the discussions had during the coffee breaks, in the pub and on the field trip. Having so many experts on the field trip was a real treat, and I personally learnt much for their generous and patient instruction despite having spent many years visiting some of these sites. Thanks are due to Gareth Dyke for organizing the conference and Jessica Lawrence who assisted, as well as Dinosaur Isle and The Needles Park for their hospitality.

I am sure I join many others in hoping this conference will be repeated in years to come.