

# TW:eed



## Tetrapod World: early evolution & diversification

### Newsletter No. 13, October, 2016

On 11<sup>th</sup> and 12<sup>th</sup> August, we held our six-monthly team meeting, this time in Cambridge in the newly refurbished David Attenborough Building, which was very pleasant. There were about 20 of us there, with most members of the core teams able to attend, coming from Edinburgh, Oxford, Lincoln and Southampton.



Team members gathering. Copyright Rob Clack

People talked about fieldwork they'd been doing earlier in the year, a number of papers which have been or are about to be submitted, conferences they've attended or will shortly attend.

In April, various team members from several institutions carried out fieldwork in Burnmouth, Coquetdale, Whitrope Burn and Lauriston Burn. The latter seems to have some marine influence, and we think might come from slightly higher up in the sequence than the others. We already knew that some of the sediments from Whitrope Burn were marine, though others are fresh water.



Jenny Clack doing fieldwork on Bute. Copyright Rob Clack

At Burnmouth there seems to be some correlation between the numerous palaeosols and some of the beds yielding tetrapod fossils, so there's an interesting line of enquiry to be followed there. If the link is real, that gives us clues as to where to look for more tetrapod fossils elsewhere, which would be very exciting!

Jenny and Rob Clack reported on their May field trip to the Isle of Bute where they found actinopterygian fish remains and a lungfish toothplate. This is promising, but there is some doubt about the exact age of the deposit, so a sample has been sent to the Palynology Team at Southampton in the hope they can resolve the matter.

On the evening of the 11<sup>th</sup>, we had a small reception to celebrate the original end of the project, before retiring to a local noodle bar for a team dinner. All teams have now been granted no-cost extensions by NERC, so work will continue officially into next year. This is because we've not actually spent all of the original grant, and NERC have kindly agreed to let us use that money to fund further research, rather than having to pay it back. The reception was not paid for out of the grant money!



Team members at the reception. Copyright Rob Clack

Team members from the NMS reported that final visitor numbers to the exhibition in Edinburgh exceeded 60,000, which is way beyond normal exhibition attendance in the area allocated to us and is just brilliant. We were delighted with that. Almost all visitor comments were positive, with only a few suggesting we "ask God, as he has the answers!"

With the exhibition having closed on 14<sup>th</sup> August, it will now travel around Scotland:

- Biggar and Upper Clydesdale Museum, 15<sup>th</sup> October to 15<sup>th</sup> January
- Montrose Museum and Art Gallery, 21<sup>st</sup> January to 3<sup>rd</sup> April
- Museum nan Eilean (Lews Castle, Stornoway), 13<sup>th</sup> April to 24<sup>th</sup> June.



NMS Exhibitions Officer, Hanna Boddy. © Phil Wilkinson

The Royal Society is calling for applications to exhibit at their Summer Science Exhibition in July, which we're very keen to do. Jenny Clack, with help from various other team members, has submitted our application.

Tom Challands, from the University of Edinburgh talked about a lungfish which had been found low down in the sequence a couple of years ago at Burnmouth. Unusually for this locality, this specimen had much of the skull intact, and Tom thinks it's a new genus, which is really exciting.

I think the highlight of the meeting for me was the Southampton team's reports on the spore data they've gathered and studied over the past four years. They're going to be able to tighten up the dating considerably, and provide much more accurate data about the Devonian-Carboniferous boundary. It seems that about 50 years ago, a grand old man of vertebrate palaeontology was a little 'imaginative' with his dating of some specimens from this period, so it will be good to get that straightened out!

Several team members reported on their visit, along with Martin Gibling from Halifax University, to Nova Scotia to study the geology and sedimentology in and near Blue Beach, where huge numbers of isolated bones have been recovered over the years. They visited Chris Mansky and Sonja Wood at the Blue Beach Fossil Museum and were very excited by some of the footprints the museum holds.



Team members and Martin Gibling with Chris Mansky at the Blue Beach Fossil Museum, Nova Scotia.

Copyright Sonja Wood.

About twelve members from various teams have jointly submitted a paper to Nature Ecology and Evolution, a new

Project blog: <http://www.tetrapodworld.com>

journal from the Nature Group, due to be first published in January 2017. This has been accepted, 'though we don't know when it will appear yet.

Jenny Clack reported giving a talk about the project to the International Congress of Vertebrate Morphology in Maryland, USA in early July, and she and Tim Smithson spoke about the talks they gave shortly after that at the European Association of Vertebrate Palaeontology in Haarlem, Netherlands.

Jenny Clack and Tim Smithson attended the Symposium of Vertebrate Palaeontology and Comparative Anatomy in Liverpool in August. Jenny will speak at the University of Hull, the Cambridge Sedgwick Club and in Dublin in November, and to the Manchester Geological Society and at the Palaeontological Association meeting in Lyon, France, in December.

Sarah Davies spoke at the Oxford Geology Group and at the Warwickshire Conservation and Geology Group.

John Marshall and Emma Reeves will talk about the palynology and dating information which they have been working on at the International Palynological Congress in Salvador, Brazil in October.

Also in October, Tom Challands will present a poster (multi-authored by the group) at the annual conference of the Society of Vertebrate Paleontology in Salt Lake City, USA, entitled "Earliest Carboniferous Dipnoi: post-Hangenburg recovery and the dawn of a new era of lungfish."

Carys Bennett will speak at the Leicestershire Literary and Philosophical Society, Geology Section, on 16th November.

Finally there was much discussion about how the next project will shape up. Promising material from slightly later Scottish rocks has come to light and we're putting together ideas for who will be involved and how the project will be pitched.



The Team in front of the green wall in the David Attenborough Building. Copyright Tim Kearsley

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