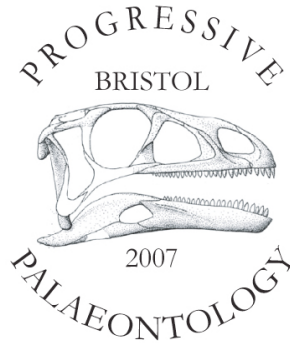


# Progressive Palaeontology 2007 – Program Changes



## Schedule changes

The following poster has been withdrawn:

**Coral diversity across the Oligocene-Miocene boundary in Sabah, Borneo**

*Laura McMonagle*

The following talk has been withdrawn:

**12.15 Limb bone scaling in dinosaurs**

*Debi Linton*

In it's place we will have:

**12.15 Origin and early loss of paired fins: the problem of character polarity in Osteostraci and stem-gnathostomes**

*Robert Sansom*

Abstract:

Origin and early loss of paired fins: the problem of character polarity in Osteostraci and stem-gnathostomes

**Robert Sansom**<sup>1,2</sup>

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The evolution of gnathostomes represents a massive overhaul in the vertebrate body plan. A huge morphological gap exists between extant cyclostomes and gnathostomes; thus our only recourse is to the fossil taxa if we want to answer questions about this episode of increasing complexity and genome duplication. A growing body of evidence indicates that the Osteostraci are the closest relative of jawed vertebrates. Controversy surrounds the ancestral morphotype of the group, be it non-cornuate with developed pectoral and dorsal fins or finless tremataspid. Incomplete knowledge of osteostracan phylogeny currently impedes understanding of this important transition.

Here novel observations, new taxa and global parsimony techniques are used to construct the first comprehensive phylogeny for the Osteostraci and related taxa. This enables not only a test of previous hypotheses of osteostracan intra- and inter-relationships but also reconstruction of the gnathostome characters prior to the evolution of jaws. Osteostracan/jawed vertebrate sister relations are supported and the non-cornuates are confirmed as the basal-most osteostracans. The finless tremataspids are strongly supported as a derived clade and thus paired fins have been lost within the Osteostraci and are homologous for Osteostraci and jawed vertebrates.

The upshot is that the finless tremataspids can now be added to the already well-characterised examples of pectoral fin/limb loss in vertebrates such as snakes, caecillians and eels. What makes the tremataspids exceptional however is that the loss occurs almost immediately after the initial evolution of this crucial character.

## Corrections

### List of Delegates, from:

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### Missing from the acknowledgements:

To the list of those who provided help and advice in the planning stages we would like to add Liz Loeffler. We would also like to thank Simon Powell for help with printing the abstract booklet.