

Pterosaurs

By Mark P. Witton. 2013. Princeton University Press, 41 William Street, Princeton, NJ, USA, 08540-5237. 291 pages, 35.00 USD, Cloth.

Not since Bakker's *The Dinosaur Heresies*, have I been so enthralled with reading a book on prehistoric life. This is an amazing book. The cover art sets the scene (go ahead, judge the book by its cover), and before reading a single word inside, I flipped through the book's many, many illustrations. There are line drawings (some coloured), photographs of fossils, maps and... paintings. The paintings...absolutely stunning. Although the text is quite technical, one could still give this book to a seven year old and she would be enthralled flipping the pages, just admiring the artwork. In fact, I loaned my copy to a colleague with six and eight year old girls and they were enthralled, and inundated their mother with many, many questions. Witton has used some artistic license in colouring the pterosaurs, and also in fleshing them out, but the reader (whether seven or 97 years old) is presented with animals hatching, foraging, feeding, launching, flying, dying and walking. Walking...wow, what we've learned in the last few decades! But I digress...there are dozens of paintings, making me wonder if the author/artist was actually a researcher in the field (yup, I checked)... where did he find the time?

Although the text is mostly technical, directed at an informed audience, it is written with a humorous slant. Everyone will get something out of reading this book. Witton makes a point of referring to a large body of the pterosaur literature, starting with Collini's description of the first-discovered fossil (from the same deposits which gave us *Archaeopteryx*) to the most recent literature which could be accessed, some of it even in prep. The fairness with which Witton treats the literature representing opposing and unconventional viewpoints is quite professional. In such a book, other authors may not have even bothered to include different viewpoints. Additionally, the dogma is challenged and either debunked or corroborated.

The book is organized like *Squirrels of the World*, *Birds of Delaware* and many others dealing with a clade of organisms...several introductory chapters are followed by chapters on the more restricted clades. And this formula works. In this case, the introductory chapters deal with topics like anatomy, flight, nonvolant locomotion and more. Sixteen further chapters deal with families (or groups of certainly close, but uncer-

tain affiliations) of these flying reptiles. Each chapter is divided into four major sections. The introduction provides a brief description of the group. There is a summary of fossil locations with a map showing these. In one of very few critiques I have of the book, the maps seem cluttered with the species-labelled leader lines crossing continents (numbered dots with tabulation in the caption would have worked much better). The taxonomy of the group is discussed, with reference to several, often many individual specimens. The anatomy of each clade is described as the second part of the family accounts.

Understandably, this section is dominated by a discussion of the skeleton, but mention of soft tissues is made, when available. A line drawing of at least one reconstructed skeleton is presented in launch position, accompanied by a fleshed out specimen in the same posture.

The final two sections of the family accounts are based on the previously described anatomy. Locomotion for both flight and terrestrial locomotion are covered, including climbing for those thought to be arboreally inclined. Witton attempts to paint (textually and literally) each animal in its world, whether that be as a wading filter feeder, a courting wanna-be dad or a flock attempting to migrate to an earlier era to avoid extinction (that being an example of the author's humour, not the reviewer's).

Despite the marvels which make up this book, there are a few, largely minor changes I would have made. The endpapers are blank...the audience for this book includes folks like me whose recitability of the geologic scale is rusty, and would have benefited from one there. Two time scales are within the body of the book, but the endpaper is really where one ought to be. Another endpaper could have had a labelled line drawing of a skeleton with superimposed wing membranes. The anatomies of these animals is critical to the discussions throughout, and those not anatomically-inclined may have benefited from an easily accessible, labelled skeleton.

All in all those, a fantastic book!

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