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The Princeton Field Guide to Mesozoic Sea Reptiles

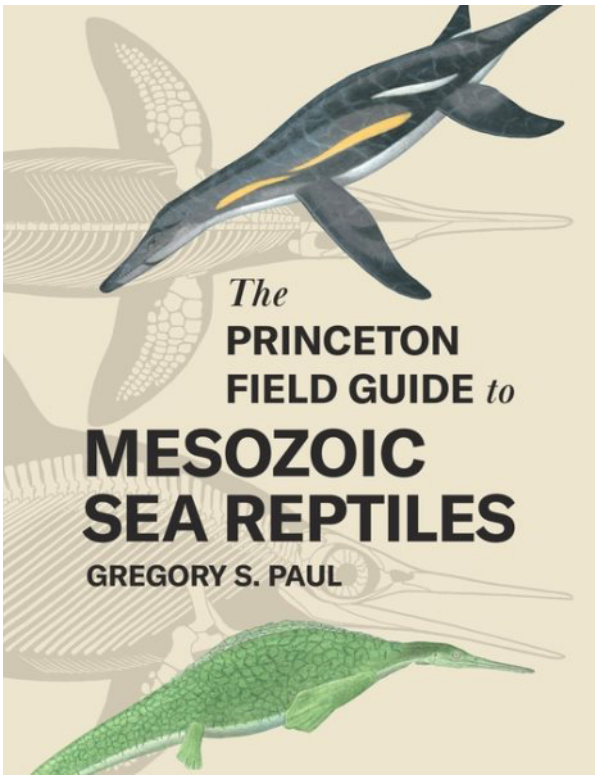
Reviewed by Ben Hillesheim

Paul, Gregory S. 2022. The Princeton Field Guide to Mesozoic Sea Reptiles, Princeton University Press, 208 pp. ISBN: 9780691193809 (hardcover). $35.00/£30.00

The *Princeton Field Guide to Mesozoic Sea Reptiles,* written and illustrated by Gregory S. Paul, follows up on the earlier *The Princeton Field Guide to Dinosaurs* and *The Princeton Field Guide to Pterosaurs.* Like the earlier works, this book seeks to provide the reader with a comprehensive who's who guide of an ancient animal group – in this case marine reptiles. Although the book can be a little sparse on detailed information about each individual species, it is a comprehensive anthology of clear skeletal illustrations of the wide array of Mesozoic sea-going reptiles. It is a solid encyclopedia that provides a wealth of information for anyone who wants to learn more about not only about *Tylosaurus*, but also about *Placodus*.

The book is broken down into two major subsections, the introductory section - consisting of an exploration into sea reptile evolutionary history and general biology - and the encyclopedia section - consisting of detailed illustrations of sea reptile skeletal anatomy.

The book's introductory section on marine reptile evolutionary history is a unique nugget in terms of a popular science book since it gives an overview of the Mesozoic Era looking through the lens of sea reptiles rather than dinosaurs as popular paleontology books tend to do. The book certainly is thorough in covering the history of major marine reptile groups. Mosasaurs, plesiosaurs, and ichthyosaurs are of course covered, but so are lesser known marine reptile clades such as the placodontids, henodontids, and xinpusaurids.



For a work so full of illustrations otherwise, here the book runs into a mild shortcoming. As a

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person who is less than fully-versed in marine reptiles, particularly the lesser known clades, I found somewhat frustrating the book's lack of illustrations in this section depicting the animals mentioned in-text. There is art here to be sure, but it tends to be large, multiple-species illustrations of a whole animal community rather than standalone depictions of lesser known animals. The whole second half of the book contains a bounty of illustrations of specific sea reptile clades, but that would involve a lot of flipping back and forth. For a book already containing so many illustrations of different marine reptiles, the lack of clarifying artwork here seemed like an odd oversight. Allow me to hedge my remarks here by saying that the specific member of the audience consuming the text matters here. Someone who is more knowledgeable in the taxonomy of the sea reptiles than myself will likely breeze through the text without issue. For a reader looking to take their first steps into learning more about Mesozoic sea reptiles, however, the lack of illustrations may prove slightly frustrating.

The Princeton Field Guide to Mesozoic Sea Reptiles is a true popular science book in the sense that the text hits the sweet spot between being technical enough to satisfy academics but accessible enough that is not out of reach to paleo-interested members of the general public.

The second part of the book is the encyclopedia portion. This section contains entries for 435 sea reptile species organized taxonomically (an index at the end of the book allows one to look up animals alphabetically). Each entry contains a series of vital statistics akin to those found in previous books in the "Princeton Field Guide" series such as time period, length, habitat, completeness of the fossil record, and identifying characteristics. Most of these entries consist of short little blurbs of text highlighting these facts, but some contain additional information in the form of "Notes" that give extra details about the animal's life such as which other reptiles it shared its environment with or details about its taxonomy. Many, but not all entries also have an accompanying illustration depicting either a life reconstruction or a skeletal illustration of the animal. These "skeletals" often depict the whole skeleton from a lateral view, but (depending on the unique anatomy of the animal in question) sometimes depict the creature from above or depict the skull only.

The main stars of the show in this book and others in the series are the skeletal illustrations. In the age of the internet where so much information and art are readily available at one's fingertips, one might be forgiven for momentarily underestimating the sheer scope of the art presented here. Even on the internet, could one really hope to find a high-quality skeletal illustration of a *Xinpusaurus* and one achieved with the expertise of an artist who has been practicing the craft for as long as Gregory Paul? Such illustrations are a wonderful resource for those without ready access to a natural history museum.

The Princeton's Field Guide to Mesozoic Sea Reptiles is a solid popular science book that will appeal to a broad, paleontology-interested audience. While there are places where one wishes the book was a little more generous with information or clarifying illustrations, the work is comprehensive in terms of the sheer number of species referenced. Readers interested in a sweeping overview of ancient sea reptiles as well as those that take joy in taking in facts about ancient animals will get a lot out of this title. Additionally, the detailed illustrations of all sorts of extinct marine reptiles will appeal to artists and readers seeking to visualize the shapes and sizes of prehistoric life. It serves as an excellent reference book and as a fun book to spend an afternoon "diving in".