



THE  
*Complete*  
**DINOSAUR**

Edited by James O. Farlow and M. K. Brett-Surman

# Preface

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## **Dinosaurs: The Terrestrial Superlative**

In April of 1842, Richard Owen coined the term *Dinosauria* in a footnote on page 103 of his *Report on British Fossil Reptiles*, and defined this new name as meaning “fearfully great, a lizard.” Since that time the name has always, incorrectly, appeared as “terrible lizard.” How did this etymological and aesthetic error occur? Modern dictionaries always give the meaning of *deinos* as “terrible.” This is correct, if one uses the word as an *adjective*—but Owen used the *superlative* form of *deinos*, just as did Homer in the *Iliad*. A check of a Greek-English lexicon from Owen’s time will confirm this (Donnegan 1832). Dinosaurs are not lizards, nor are they terrible. They are, instead, the world’s most famous “living” superlative!

In most cultures, dinosaurs are the most popular animals of all time. This automatically makes them the most misunderstood animals of all time; most popular books written about dinosaurs are written by non-specialists. (Students are astounded to learn that there are only about eighty professional dinosaur paleontologists in the world.)

More books have been published about dinosaurs since 1990, written by both professionals and amateurs, than were published from 1842 to 1990. Considering the paucity of researchers, dinosaur paleontology, as compared with such fields as mathematics and genetics, is as relatively dynamic as, say, physics. Fortunately, the end of new discoveries about dinosaurs is not in sight.

This book summarizes and celebrates our current knowledge about those superlative, “fearfully great” reptiles. Because the field of dinosaur paleontology has expanded from the emphasis on description and classification prevalent in its infancy to include a broader variety of topics, such as functional morphology and paleobiology, it is no longer possible for any one person to write authoritatively on all aspects of dinosaur studies. Consequently we arranged for the individual chapters to be written by experts on the subjects covered. Our goal throughout this project has been to produce, in one volume, the single most authoritative account of dinosaur paleontology accessible to the general reader.

We have tried to make our book as readable as possible. Authors were instructed to keep technical jargon to a minimum. We know, however, that readers will encounter some unfamiliar and difficult words, so we have provided a glossary of terms at the end of the book.

Another way in which we tried to make the book as easy to use as possible was to provide separate bibliographies for the chapters dealing with technical material. This was done so that the reader would not have

to look so hard for the sources of citations. We did, however, depart from this practice in the first section of the book, which deals with the history of dinosaur paleontology. Here the material is less technically formidable, and there is also a fair degree of overlap in references among chapters. We have therefore gathered all of these references and placed them at the end of Part One.

Persons unaccustomed to reading the professional scientific literature may find our way of citing references unfamiliar. Instead of providing sources in footnotes or endnotes, we make such attributions in a different manner. If in 1995 some hypothetical paleontologist named Jones offered the opinion that sauropod dinosaurs discharged unused dietary materials in the form of great big balls of fibrous stuff, and one of our authors wants to refer to the work in which said opinion was expressed, the format for doing so is to cite the author's last name and the year of publication: in this example, it would appear as Jones 1995 (usually in parentheses) or Jones (1995). The reader can then turn to the chapter's bibliography and find the original reference listed alphabetically. Similarly, if Jones had two or more collaborators in what s/he wrote, the work will be cited as Jones et al. 1995, et al. being an abbreviation that means "and others." This way of acknowledging sources may be jarring the first time one encounters it, but it is really a very practical and economical method.

Eagle-eyed readers may notice a seeming inconsistency in the way we identify Chinese and Mongolian authors of articles in chapter bibliographies. For example, some publications by the noted Chinese dinosaur hunter Dong Zhi-Ming are identified as having been written by Dong Z., but other publications by the same author are attributed to Dong, Z.

The problem arises from the fact that many Asian languages reverse the name order from the Western format by giving the family name first and the individual's given name last. In some publications Dong identifies himself as the author by using the Chinese name order, Dong Zhi-Ming. In other publications he identifies himself in Western name format as Zhi-Ming (or Zhiming) Dong. We attempted to determine the name order used in each publication; where Dong used Chinese format, the publication is attributed to Dong Z., but where he used Western format, the publication is credited to Dong, Z.

There is some overlap in content among different chapters, although we have tried to keep this to a minimum. A certain amount of overlap is good, however; different authors may employ the same information in different contexts, or with different emphases—or with different interpretations.

If your goal is to be at the cutting edge of your field, you have to be prepared to risk the occasional loss of professional blood. Such bloodletting takes the form of vigorous disagreements among specialists over topics of contention. Although we have sought to keep our book's discussions of controversial matters civil in tone, it will quickly become apparent to the alert reader that there are sharp divergences of opinion among some chapter authors—and it is worth noting that neither of the editors agrees with all of the opinions expressed in this book! When an author makes an interpretation that other specialists dispute, either elsewhere in this book or in other publications, we often include parenthetical references in the text to draw the reader's attention to those opposing viewpoints.

We could not have put this book together without the help of many other people. First and foremost, of course, we thank our chapter authors, *most* of whom gave us their contributions in a timely fashion (the tardy miscreants out there know who they are . . . ). (We sadly note, by the way,

that one of our authors, Karl F. Hirsch, died while the book was in press.) We also thank numerous other professional colleagues (particularly John H. Ostrom) who read and critiqued early chapter drafts, thereby helping to ensure the scientific credibility of the book.

We take special pride in the quality of the artwork in this book. Many professional artists graciously permitted the use of their work for far less compensation than they deserved, and we hope that they will feel that the quality of the book justifies their generosity. The persons responsible for the artwork are identified in the individual captions. However, we want to single out for special thanks certain artists whose contributions went light-years beyond what we had any right to expect in exchange for a free copy of the book: Tracy Ford, Brian Franczak, Berislav Kržič, Greg Paul, Mike Skrepnick, and Jim Whitcraft. Special thanks, too, go to Bob Walters, who served as art editor for this project, and suffered through untold miseries (we assume) in the process.

Linda Whitlock had the dubious pleasure of retyping several manuscripts, and in so doing learned more than she cared to know about complicated scientific names. Other persons who assisted us at various stages in the production of this book include Chip Clark, Jenny Clark, Kimberly Brett-Surman, David Steere, Carolyn Hahn, Russell Feather, and Mary Parrish of the Smithsonian Institution; archivist Dean Hannotte; philatelists E. A. Knapp, Fran Adams, Wally Ashby, and Saul Friess; George Stephens and Roy Lindholm of George Washington University; the award-winning author Robert J. Sawyer; and the editor of Asimov's *Analog*, Gardner Dozois.

Thanks also go to Indiana University Press, for agreeing to this project in the first place, and for seeing it through to the not-so-bitter (we hope) end. Special thanks to Robert Sloan for his patience.

Finally, in the interests of domestic bliss, we must thank our wives, Karen and Kimberly, for putting up with our frequent gripes and intermittent bouts of depression during the long months when it seemed that this book project would *never* be finished, and when one of us (who shall go unnamed) claimed to be too busy editing a book to do the dishes.

Our heartfelt gratitude to one and all.

## References

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