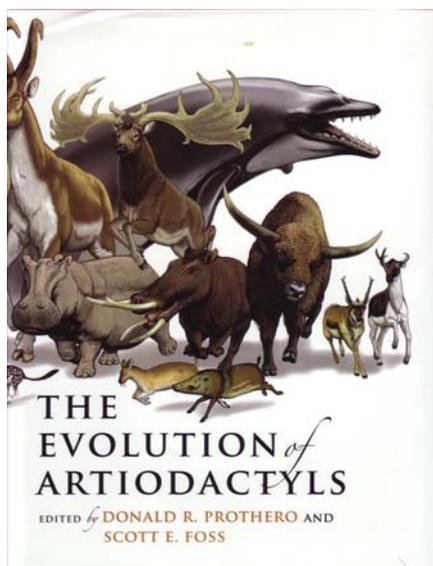




BOOK REVIEWS

Prothero, D. & S. Foss. Eds. 2007. *The Evolution of Artiodactyls.* – Baltimore, The Johns Hopkins University Press

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Until the explosive results of the popularity of dinosaurs stimulated by films like Jurassic Park, mammal palaeontology dominated vertebrate palaeontology meetings and publications. And yet, despite these former decades of dominance, the state of affairs, particularly the systematics and descriptive work on one of the most common large mammal groups in North America and Europe, the Artiodactyla, has been rife with gaps and conundrums. It is unfair to characterize the present state of most artiodactyl groups to some inadequacy of workers from past decades, as they were simply doing their best with the materials and methods of the times. But considering the diversity of artiodactyls worldwide and their rich fossil record, most artiodactyl workers today would probably agree that the

number of specialists had declined for much of the 1980s and 1990s. This last decade has been a renaissance for the field, in part spurred by the debate over the position of the Cetacea within the Artiodactyla itself. What this book represents is the culmination of the effort of these few people to comprehensively bring this large, diverse order back to their proper place with modern approaches and ideas. Considering their track record for bringing attention to artiodactyls, it is no surprise that Donald Prothero and Scott Foss are the two organizing the effort.

The immediate appeal of the cover art by Carl Buell, particularly in how it captures the striking diversity of shapes, sizes, and bizarre morphology of various artiodactyls, is only en-

hanced by the content of the chapters themselves. Aside from some introductory chapters about large-scale molecular and morphological phylogenetics of the group, and some final chapters on paleoecological trends among the terrestrial members of the group, most chapters are organized in a similar fashion that allows most of them to be used readily as a reference in a convenient, unambiguous way. Each of these chapters is organized such that following a general introduction to the group the taxonomy of the family and other subgroupings are described, followed by a genus to genus account of their validity (and in many cases, diagnosis), followed by some general conclusions about the group as a whole and especially their paleoecology. Although the decisions about the diagnoses and taxonomy of these groups is not always treated by each author with the same rigor and clarity of methods, for the artiodactyls these steps are still a huge improvement. In fact, since receiving this volume myself I have found the chapter on the Antilocapridae (by Edward Davis) and the Palaeomerycidae (by Prothero and Lister) to be invaluable to papers recently submitted. Although some of the work on groups such as these could be cumulatively derived from the primary literature and summaries like those in the now standard reference by Janis, Scott & Jacobs (1998), this volume not only presents succinct updates on those groups, but for many families this is the first such thorough revision published in decades. Perhaps more importantly, most artiodactyl families are/were distributed across the Holarctic, making it impossible to get a clear picture of their record from a volume focused on North America alone such as that done in the volume by Janis *et al.* (1998). Although this is clearly not the end point for the work needed on these taxa, this volume is certainly the new standard reference for anyone working on terrestrial Cetartiodactyla.

Despite these high praises, it would be naive of me not to mention some room for improvement. The production quality of this book is excellent, although the quality of figures varies from chapter to chapter. Figures in some chapters appear to be copies of copies (or are at least washed out or too dark to make out clear details), whereas some figures are some of the clearest depictions of small artiodactyl teeth that otherwise rarely appear so clear in the pri-

mary literature. This image quality variety is not serious, however, and I suspect that most will find it useful enough for their purposes.

A more important room for improvement can be found in the contents of a couple of chapters. For example, although the chapters that deviate from the general taxonomic overview plan (such as James Honey's chapter on Camelidae) have explicitly stated rationales for their lack of conformity, there are some chapters that conform better than others. Instead of providing a review that has changed little since his chapter in Janis *et al.*'s volume (1998), Honey's chapter on the Camelidae presents new data on a small group of fossil camels in order to rectify some confusion over some aspects of their dimorphism. Though a larger revision of the Camelidae is long overdue, this chapter is a significant contribution to our understanding of this difficult group, so this deviation from the plan for chapters in this volume should be excused. In comparison with Honey's non-conforming, yet useful, contribution, is the chapter on the Merycoidodontidae (by Stevens & Stevens), which is far less useful. This chapter goes about making major revisions to family and subfamily level taxonomy without much, if any, justification to these decisions, and without clear explanations of how the species these contain are diagnosed. The dendrogram included in this chapter only adds to the ambiguity that comes from the lack of a well resolved cladogram for the Merycoidodontidae. Though the chapter on the sister group to the Merycoidodontidae, the Agriocheridae (by Ludtke), also lacks a cladogram, it is a stark contrast to the chapter by Stevens & Stevens in that it contributes significantly toward clearing up the problems of recognizing species within the group. This clarification of genus level diagnoses common to most other chapters is fundamental to subsequent cladistic work that would illuminate the relationships of larger groups within the clade. The chapter on the Merycoidodontidae may have been better spent doing this, or, in light of the overwhelming work needed for doing this with such a large and abundant group, it may have been better spent on a smaller, focused contribution like that done on camels by Honey.

Without a doubt, for anyone working on artiodactyls this is an essential reference. This is the most up to date collection of work on fossil artiodactyls, including those outside North

America, published in decades. Although some chapters, such as those on the Merycoidodontidae and Camelidae, illustrate the desperate need for a concerted effort to study their abundant material and better resolve those groups, for the most part this text could allow one to feel confident in using it as a starting place for future work. In light of the patchwork of primary literature that existed for most of these families before this book was published, this is a significant step forward for anyone venturing into the world of fossil artiodactyls. Perhaps, with this book in hand and some months (or years) camping out in collections such as the Frick collection at the American Museum of Natural History, we can hope to gain an even better understanding of this diverse group of mammals.

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Cited literature

Janis, C. K. Scott & L. Jacobs, L. Eds. 1998. *Evolution of Tertiary Mammals of North America; Volume 1. Terrestrial Carnivores, Ungulates, and Ungulate-like Mammals*. - Cambridge, Cambridge University Press.

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