
Mammoths, sabertooths, and hominids is intended for a wide range of readers who are interested in the last 65 million years of mammalian evolution in Europe, with Europe defined broadly to include the area from Iberia to the Urals and Georgia. The book is divided into 7 chapters, 1 each on the Paleocene, Eocene, Oligocene, Pliocene, and Pleistocene, and 2 on the Miocene, 1 covering the early to middle Miocene and the other the late Miocene. To cover this broad sweep of time, the authors limit their coverage of systematics and phylogeny (focusing the discussion primarily at the generic level and limiting their coverage of generic origins to those instances that shed light on matters of biogeography or paleoenvironmental conditions) and take a relatively broad chronological focus. Rather than describing the numerous climatic trends, glaciations, immigrations, emigrations, and extinctions that are known to have occurred in each period, the authors cover broader trends, emphasizing the climatic and ecological state of affairs at the beginning, middle, and end of each period. The study gives balanced attention to herbivores, carnivores, insectivores, and omnivores as well as to large and small species. Primates, including humans, receive coverage, but not at the expense of other groups. On those few occasions when it is relevant in the ecological context, some attention is given also to reptiles.

The authors’ goal is to update earlier book-length studies of the Age of Mammals in light of the last 30 years of research by providing an annotated outline of regional mammalian evolution and biogeography, excluding marine mammals. Although the authors certainly bring readers up to date on their subject, they face an obvious difficulty: an outline will tend to read like an outline. Often, that is the case here. The bare details of the shifting fortunes and distributions of different families and genera sometimes arrive with too much speed and too little context, with the result that they sometimes risk becoming reduced to trivia. Although the authors tell us what is believed to have happened, based on the best available evidence, during various periods during the last 65 million years, they do not always succeed in making that information relevant to the broad range of readers they are addressing.

Those portions of the study that go beyond the terseness of the outline format are the most engaging and memorable—and likely will be most useful for the book’s broad target audience. Among these standout sections are a characterization of Paleocene fauna as an odd extension of an impoverished Cretaceous world rather than the beginning of anything resembling the present, more familiar mammalian fauna (pp. 1–8); an analysis of the middle Eocene fauna preserved in the Messel shales and its probable connection, through Africa, to South America (pp. 43–50); and an overview of the middle Miocene event and the ecological consequences of this major oceanic reorganization and climatic shift (pp. 123–129). In sections such as these, the text illuminates mammalian evolution far more effectively than does a series of brief, periodic updates on the distribution of one lineage or another, allowing readers to develop a sense not merely of the bare facts of the subject but also of the underlying themes that give rise to the details on which the discussion so often focuses.

In fairness to the authors, however, the details they provide about the changing fortunes of various lineages make their study a useful general reference. Brief bursts of analysis interspersed throughout these sections also provide useful insights into the process by which paleoecologists draw conclusions about past environments based on the presence or absence of particular genera, or the morphological adaptations typical of these taxa during particular periods.

Mauricio Antón’s superior illustrations add a welcome dimension to the volume, bringing the species discussed into a remarkable semblance of life. Although the volume’s 16 color plates are always at least competent and sometimes very finely rendered, the 116 line drawings provide the majority of the book’s illustrative high points—in part because they offer more detailed studies of the species pictured than the color plates and do so at a more appropriate scale and in part because Antón’s black-and-white illustra-
tions more effectively depict 3-dimensionality and motion than does his color work. The illustrations include reconstructions of species in the habitats they occupied, skeletons of species alongside portraits that reconstruct their life appearances, and sequential reconstructions, which picture 1st skeletal remains, then overlaying musculature, and finally life reconstructions. For purposes of scale, species known from particular periods or locales (or both) are also pictured together against a background grid of 1-m squares to show their relative size. Such illustrative thoroughness is a relatively new and very welcome feature of paleontological studies, and Antón’s work in this area is exceptional. The quality and quantity of illustrations provide readers with an excellent visual understanding of the species under discussion.

Generally, this study delivers on its stated goals, providing a useful overview and a reference work graced with moments of insightful analysis. Problems are few and are generally of minor consequence. Occasionally, the language is rather technical for the target audience, but because most technical terms are defined when they are 1st used, the terminology rarely puts excessive demands on readers. Other concerns deal mainly with particulars that will be of interest only to some readers. Despite a generally excellent balance of coverage between different lineages—an impressive achievement in and of itself—one minor inconsistency is evident in the uneven coverage of bats. In the 1st half of the study, 6 line illustrations occupying more than 4 full pages are devoted to bats; they are mentioned as appearing in the European fossil record in a generally modern form during the Eocene and reaching another peak of diversity in the Miocene; and wing adaptations to different modes of hunting are covered. Yet there is no mention at all of bats in the Oligocene, Pliocene, and Pleistocene. Another omission relates to the illustrations. Although Antón provides graphics of excellent range and quality, illustrations relating to the details of dentition, including the structure of individual teeth in various lineages, would have been a welcome complement to the text’s discussion of the subject. Nonetheless, none of these minor concerns significantly detract from this very successful study, which tackles a difficult task with admirable deftness—

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