

Preface

During the decade since the publication of the fourth edition of *Mammalogy*, there has been an explosive increase in the volume of literature concerning mammals. The fifth edition of this text represents a significant revision, because although the basic framework of the book remains intact, all of the chapters have been extensively rewritten and updated with new information. We have not attempted to present an exhaustive review of the world literature on mammals, but we have tried to include many of the latest and most interesting discoveries. Because no two instructors cover the same material in exactly the same way, we treat the biology of mammals broadly enough to make the book appropriate for the variety of mammalogy courses currently being taught.

The first part of this book (Chapters 1 through 4) defines mammals and summarizes their origins. Chapter 2 details the structural features that characterize mammals. Chapter 3 summarizes the origin of mammals, and Chapter 4 introduces classification. In the second part of the book (Chapters 5 through 19), the orders and families of mammals are discussed in detail. These taxonomic chapters include information on the fossil history, current distribution, morphological characteristics, and basic behavior and ecology of each family of mammals. The third part (Chapters 20 through 26) treats special topics such as mammalian echolocation, physiology, behavior, ecology, and zoogeography. From this coverage of the subject, students can gain a general understanding and an appreciation of the form and function of mammals. Two additional chapters (27 and 28), both new to this edition, cover mammalian domestication and mammalian disease and zoonoses. These two chapters are available for download from <http://www.jbpub.com/catalog/9780763762995/>.

In the interest of reflecting the extraordinary recent activity in mammalian biology, one of the most important changes in the fifth edition is the more thorough use

of phylogenetically based mammalian relationships. The widespread application of phylogenetic systematics in recent years has led to a new general agreement about the higher-level evolutionary relationships among living mammals. In turn, this has led to a reorganization of mammalian orders and a new classification of the Mammalia. Accordingly, we have included cladograms to illustrate the hypothesized relationships among mammalian lineages. Because phylogenetic systematics, and particularly molecular systematics, are relatively recent advances, there are still many conflicting views and often many competing phylogenetic hypotheses. We point out those relationships that remain controversial and cite sources from both sides of the debate to facilitate class discussions. As a consequence of adopting a more cladistic approach, we have tried to place studies of ecology, behavior, reproduction, and physiology in an evolutionary context that better reflects the interdisciplinary nature of the field of mammalogy.

New to the Fifth Edition

We have completely revised and updated our discussion of the fossil history of mammals, reorganized the ecology and behavior chapters with many new topics, completely updated the chapter on mammalian zoogeography, and included two entirely new online chapters: "Mammalian Domestication" and "Mammalian Disease and Zoonoses." We have also added many new photographs and drawings to illustrate key points made in the text, while retaining the original anatomical drawings by senior author Terry Vaughan. These drawings, which we regard as essential to the ordinal chapters, should help students to understand the descriptions of structure and function. We have made liberal use of these drawings, most of which illustrate skulls, teeth, or feet. The profiles of skulls are usually of the right side, and most occlusal views of teeth show the right upper

or the left lower tooth row. When other teeth are shown, the legend so indicates. The chapter-opening illustrations were also provided by Terry Vaughan.

In an effort to provide additional pedagogical tools and resources for students, we have placed key terms in bold font the first time they appear in text (these terms are listed at the end of each chapter and defined in the Glossary), included chapter summaries, and provided a list of useful books and journal articles at the end of each chapter. For the ordinal chapters, we also provide a list of characteristics; these traits are not necessarily synapomorphies for the group, but should help students appreciate the morphological specializations of the group's members.

Finally, as in the previous edition, we have included a detailed glossary and an updated bibliography. The literature citations have been brought up to date, with many citations from the period of 2000 to 2009. To help students access the primary literature, we have, where possible, selected literature that is synthetic, accessible (in widely available journals and online), and current. The advent of Web-based literature searches makes finding these resources much easier than in the past; the bibliography uses a minimal punctuation format in recognition of this fact. If this text is useful, holds the interest of students, and is respected by members of the far-flung community of mammalogists, it is primarily due to the work of the researchers on whose studies we have relied. The organization, choice

of topics, and selection of illustrative material are ours, but the book should be credited largely to those whose names appear in the Bibliography.

Ancillaries

An *Instructor's Media CD-ROM*, compatible with Windows® and Macintosh® operating systems, is available to instructors using *Mammalogy, Fifth Edition*. The media CD includes the following traditional ancillaries:

- The *PowerPoint® Image Bank* provides the illustrations, photographs, and tables (to which Jones and Bartlett holds the copyright or has permission to reproduce digitally) inserted into PowerPoint slides. The images can be easily incorporated into existing lecture slides.
- The *PowerPoint Lecture Outline Slides* presentation package provides lecture outline notes, prepared by the authors of the main text, for each chapter of *Mammalogy*. Instructors can customize these outlines utilizing art from the PowerPoint Image Bank.

Two **new chapters** on Mammalian Domestication and Mammalian Disease and Zoonoses are available online for instructors and students. The chapters are available for download on the Jones and Bartlett Publishers catalog page, <http://www.jbpub.com/catalog/9780763762995/>.