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Marine Mammals Marine Mammals Mammalian Evolutionary Morphology The Origin and Evolution of Mammals Marine Mammal Biology Evolution of Island Mammals Mammalian Sexuality Mammals I, Mammal The Rise of Marine Mammals Beasts Before Us Mammalian Evolution, Diversity and Systematics The Rise of Marine Mammals Return to the Sea Amniote Paleobiology Mammals from the Age of Dinosaurs The Evolutionary Biology of Extinct and Extant Organisms Mammal Teeth Forerunners of Mammals Mammal Societies Evolution of Tertiary Mammals of North America: Volume 2, Small Mammals, Xenarthrans, and Marine Mammals Evolving Animals Evolution of Island Mammals Mammal Phylogeny Semi-aquatic Mammals Evolution of Tertiary Mammals of North America: Volume 1, Terrestrial Carnivores, Ungulates, and Ungulate Like Mammals Micromammals and Macroparasites Feeding Cooperation among Animals Mammals of Europe - Past, Present, and Future Mammalian Reproductive Biology Encyclopedia of Marine Mammals Evolution of African Mammals Origin and Evolution of the Vertebrate Telencephalon, with Special Reference to the Mammalian Neocortex Sensory Evolution on the Threshold A Fossil History of Southern African Land Mammals East African Mammals History of Terrestrial Mammals in South America Social Behaviour in Mammals Maternal Effects in Mammals

An in-depth look at the origin and evolutionary radiation of the synapsids. About 320 million years ago a group of reptiles known as the synapsids emerged and forever changed Earth’s ecological landscapes. This book discusses the origin and radiation of the synapsids from their sail-backed pelycosaur ancestor to their diverse descendants, the therapsids or mammal-like reptiles, that eventually gave rise to mammals. It further showcases the remarkable evolutionary history of the synapsids in the Karoo Basin of South Africa and the environments that existed at the time. By highlighting studies of synapsid bone microstructure, it offers a unique perspective of how such studies are utilized to reconstruct various aspects of biology, such as growth dynamics, biomechanical function, and the attainment of sexual and skeletal maturity. A series of chapters outline the radiation and phylogenetic relationships of major synapsid lineages and provide direct insight into how bone histological analyses have led to an appreciation of these enigmatic animals as once-living creatures. The penultimate chapter examines the early radiation of mammals from their nonmammalian cynodont ancestors, and the book concludes by engaging the intriguing question of when and where endothermy evolved among the therapsids. “Ever since Nick Hotton’s book from the 1980s we have needed an update on the biology of therapsids, and it has been Anusuya Chinsamy-Turan and her students and associates who through their bone histological work have made the greatest progress in this field.” —Martin Sander, Steinmann Institute, University of Bonn “Forerunners of Mammals is full of meticulous detail . . . [I]t also contains a number of excellently rendered illustrations of some of the animals covered in the book, and the final chapter is a discussion of the evolution of endothermy that anyone with a background in biology might find of interest. . . . Recommended.” —Choice “Forerunners of Mammals will take interested readers beyond the classic jaw-to-ear appreciation of therapsids, towards a deeper appreciation of the ancestry of mammals.” —Journal of Mammalian Evolution “This volume represents a state-of-the-art contribution to our understanding of the paleobiology of how mammals arose, and what factors contributed to their evolutionary radiation and eventual success. It is highly recommended for anyone interested in these topics, and will be accessible to readers with minimal background in bone histology and synapsid paleontology.” —Quarterly Review of Biology Berta and Sumich have succeeded yet again in creating superior marine reading! This book is a succinct yet comprehensive text devoted to the systematics, evolution, morphology, ecology, physiology, and

behavior of marine mammals. The first edition, considered the leading text in the field, is required reading for all marine biologists concerned with marine mammals. Revisions include updates of citations, expansion of nearly every chapter and full color photographs. This title continues the tradition by fully expanding and updating nearly all chapters. Comprehensive, up-to-date coverage of the biology of all marine mammals Provides a phylogenetic framework that integrates phylogeny with behavior and ecology Features chapter summaries, further readings, an appendix, glossary and an extensive bibliography Exciting new color photographs and additional distribution maps 1993. XI, 321 pp. 137 figs. in 284 parts. Hardcover DM 178,- ISBN 3-540-97853-4 This book is a review of research on the phylogeny of placental mammals. It addresses the evolutionary morphology of hard and soft tissues, molecular approaches to phylogeny, and virtually all active approaches to analysis which are focused on the evolutionary history of this dominant group of mammals. Leading international researchers review all of the major placental groups, either from the perspective of molecular biology or by morphological analysis or fossil and living groups. Evolutionary biologists, vertebratepaleontologists, mammalogists, primatologists, and taxonomists will find the depth and breadth of the chapters in this volume to be of exceptional interest. Setting the stage : rocks, fossils and evolution -- The oldest marine mammals : whales and sea cows -- Later diverging whales : Neoceti -- Aquatic carnivores : pinnipeds and a bear-like carnivoran -- Crown sirenians and their desmostylian relatives -- Aquatic sloths and recent occupants of the sea-sea otters and polar bears -- Diversity changes through time : the influence of climate change and humans This is a hands-on guide for graduate students and young researchers wishing to perfect the practical skills needed for a successful research career. By teaching junior scientists to develop effective research habits, the book helps to make the experience of graduate study a more efficient and rewarding one. The authors have taught a graduate course on the topics covered for many years, and provide a sample curriculum for instructors in graduate schools wanting to teach a similar course. Topics covered include: choosing a research topic, department, and advisor; making workplans; the ethics of research; using scientific literature; perfecting oral and written communication; publishing papers; writing proposals; managing time effectively; and planning a scientific career and applying for jobs in research and industry. The wealth of advice is invaluable to students, junior researchers and mentors in all fields of science, engineering, and the humanities. Relative newcomers within the story of evolution, mammals are hugely successful and have colonized land, water, and air. Tom Kemp discusses the great diversity of mammalian species, and looks at how their very disparate characteristics, physiologies, and behaviours are all largely driven by one uniting factor: endothermy, or warm-bloodedness. This book provides a comprehensive survey of the diversity and biology of metazoan parasites affecting small mammals, of their impact on host individuals and populations, and of the management implications of these parasites for conservation biology and human welfare. Designed for a broad, multidisciplinary audience, the book is an essential resource for researchers, students, and practitioners alike. As the first four-legged vertebrates, called tetrapods, crept up along the shores of ancient primordial seas, feeding was among the most paramount of their concerns. Looking back into the mists of evolutionary time, fish-like ancestors can be seen transformed by natural selection and other evolutionary pressures into animals with feeding habitats as varied as an anteater and a whale. From frog to pheasant and salamander to snake, every lineage of tetrapods has evolved unique feeding anatomy and behavior. Similarities in widely divergent tetrapods vividly illustrate their shared common ancestry. At the same time, numerous differences between and among tetrapods document the power and majesty that comprises organismal evolutionary history. Feeding is a detailed survey of the varied ways that land vertebrates acquire food. The functional anatomy and the control of complex and dynamic structural components are recurrent themes of this volume. Luminaries in the discipline of feeding biology have joined forces to create a book certain to stimulate future studies of animal anatomy and behavior. This book takes a non-technical approach in covering the evolution of South American mammalian fauna throughout geological history, and discusses how South America has changed due to mammalian invasions. Unlike other works on the subject, this book attempts to answer several crucial questions that often go

unmentioned together in one cohesive monograph. What was the fauna like before the American interchange? What were the origins of the now-extinct groups when northern species arrived and out-competed them? How did the modern mammalian fauna come into being with such disparate animal groups? This information is given from a historical perspective throughout the book's 15 chapters, and is presented in an easily graspable fashion by mostly avoiding technical language. The book is written for academics, scientists and scholars engaged in paleontology, zoology and evolutionary biology, but may also appeal to a larger audience of general readers interested in mammalian evolution. The book begins with an introduction, describing the tools necessary to interpret the evolutionary history of South American mammals in geological terms and some of the early people who helped found South American mammalian paleontology. Chapter 2 describes the Mesozoic first mammals of Gondwana and what we are learning about them, dominant before the K/T extinction event. Then chapters 3 through 8 cover the Cenozoic, or "Age of Mammals", highlighting the major mammalian groups of South America that replaced the earlier mammals of Gondwana. These groups include the marsupials, native ungulates, the xenarthrans (armadillos, anteaters, sloths), the caviomorphs (rodents), and the platyrrhine monkeys. Chapters 9 and 10 address the Antarctic La Meseta fossils and the Colombian La Venta fossil faunal assemblages. Chapter 11 discusses the neotropical mammals that invaded the Caribbean Islands, and illustrates the influence South America has had on adjacent faunas. Chapter 12 describes the origin of the Amazon River and the role it has played in the evolution of the mammals and other flora and fauna. Chapter 13 tells the story of the Great American Biotic Interchange (GABI), and chapter 14 follows this up with a discussion of the Pleistocene mammal communities and their eventual extinction. Chapter 15 concludes the text by discussing the modern mammals of South America, and how despite the extensive Pleistocene extinctions there is still a lot of mammalian diversity in South America. His book is a must-read for paleontologists, mammalogists, and anthropologists. Mammals are the dominant large animals of today, occurring in virtually every environment. This book is an account of the remarkable 320 million year long fossil record that documents their origin, their long spell as no more than small, nocturnal creatures, and their explosive radiation since the extinction of the dinosaurs 65 million years ago. Tom Kemp also unveils the exciting molecular evidence, which, coupled with important new fossils, is presently challenging current thinking on the interrelationships and historical biogeography of mammals. The Origin and Evolution of Mammals will be of interest to advanced undergraduate and graduate students as well as researchers in vertebrate palaeontology, biogeography, mammalian systematics and molecular taxonomy. It will also be welcomed by vertebrate fossil enthusiasts and evolutionary biologists of all levels with an interest in macroevolutionary problems. Living amniotes—including all mammals, birds, crocodilians, snakes, and turtles—comprise an extraordinarily varied array of more than 21,000 species. Found in every major habitat on earth, they possess a truly remarkable range of morphological, ecological, and behavioral adaptations. The fossil record of amniotes extends back three hundred million years and reveals much about modern biological diversity of form and function. A collaborative effort of twenty-four researchers, Amniote Paleobiology presents thirteen new and important scientific perspectives on the evolution and biology of this familiar group. It includes new discoveries of dinosaurs and primitive relatives of mammals; studies of mammalian chewing and locomotion; and examinations of the evolutionary process in plesiosaurs, mammals, and dinosaurs. Emphasizing the rich variety of analytical techniques available to vertebrate paleontologists—from traditional description to multivariate morphometrics and complex three-dimensional kinematics—Amniote Paleobiology seeks to understand how species are related to each other and what these relationships reveal about changes in anatomy and function over time. A timely synthesis of modern contributions to the field of evolutionary studies, Amniote Paleobiology furthers our understanding of this diverse group. A groundbreaking review of the seldom-studied semi-aquatic freshwater mammals, covering biology, behavior, and conservation. Semi-aquatic mammals are some of the rarest and most endangered mammals on earth. What binds them together in the minds of biologists, despite their diverse taxa and body forms, are evolutionary traits that allow them to succeed in two

worlds—spending some time on land and some in the water. Semi-aquatic Mammals fills a crucial void in the literature by highlighting the important ecological roles and curious biology of these remarkable animals. In this unique book, wildlife ecologist Glynnis A. Hood presents the first comprehensive examination of a global suite of 140 freshwater semi-aquatic mammals. Each one has overcome the distinct ecological challenges of thriving in both aquatic and terrestrial habitats as part of everyday life. Covering millions of years, Hood's exploration begins with the extinct otter-like Buxolestes and extends to consider the geographical, physical, behavioral, and reproductive traits of its present-day counterparts. Hood explains how semi-aquatic mammals are able to navigate a viscous environment with almost no resistance to heat loss, reveals how they maintain the physical skills necessary to avoid predation and counter a more thermally changeable environment, and describes the array of adaptations that facilitate success in their multifaceted habitats. She also addresses specific conservation challenges faced by these mammals. Her analysis takes readers to the haunts of intriguing semi-aquatic mammals from around the world, • introducing the "paradoxical platypus," an Australian egg-laying monotreme that detects prey through electroreception • venturing into the swamps and mangroves of Southeast Asia, where fishing cats wave their paws above the water's surface to lure prey • trawling the streams and lakes of South America, where the female water opossum uses its backward-facing pouch to keep her babies warm during deep dives • spending time with species that engineer freshwater habitats into more productive and complex systems, including North American beavers and Africa's common hippopotamus Featuring award-winning artist Meaghan Brierley's stunning illustrations throughout, Semi-aquatic Mammals is an unparalleled reference on some of the world's most tenacious and fascinating mammals. This introductory volume provides an overview about the history and current status of European mammals, as well as management strategies. The remaining volumes cover comprehensive overviews of each species’ biology including paleontology, physiology, genetics, reproduction and development, ecology, habitat, diet, mortality and age determination. Their economic significance and management, as well as future challenges for research and management are also addressed. Each chapter includes a distribution map, a photograph of the animal and key literature. This authoritative handbook provides a timely and detailed description of all European mammals and will appeal to academics and students in mammal research, as well as to professionals dealing with mammal management, including control, use and conservation. Return to the Sea portrays the life and evolutionary times of marine mammals--from giant whales and sea cows that originated 55 million years ago to the deep-diving elephant seals and clam-eating walruses of modern times. This fascinating account of the origin of various marine-mammal lineages--some extinct, others extant but threatened--is for the nonspecialist. Against a backdrop of geologic time and changing climates and geography, this volume takes evolution as its unifying principle to help us to understand today's diversity of marine mammals and their responses to environmental challenges. Annalisa Berta explains current controversies and explores patterns of change now taking place, such as shifting food webs and predator-prey relationships, habitat degradation, global warming, and the effects of humans on marine-mammal communities. There are nearly 6,000 mammalian species, among them our own. Research on our evolutionary cousins has a long history, but the last 20 years have seen particularly rapid progress in disentangling the interrelationships and evolutionary history of mammals. The present volume combines up-to-date reviews on mammalian phylogenetics with paleontological, taxonomic and evolutionary chapters and also summarizes the historical development of our insights in mammalian relationships, and thus our own place in the Tree of Life. Our book places the present biodiversity crisis in context, with one in four mammal species threatened by extinction, and reviews the distribution and conservation of mammalian diversity across the globe. This volume is the introductory tome to the new Mammalia series of the Handbook of Zoology and will be essential reading for mammalogists, zoologists and conservationists alike. Evolutionary maternal effects occur whenever a mother’s phenotypic traits directly affect her offspring’s phenotype, independent of the offspring’s genotype. Some of the phenotypic traits that result in maternal effects have a genetic basis, whereas others are environmentally determined. For example, the

size of a litter produced by a mammalian mother—a trait with a strong genetic basis—can affect the growth rate of her offspring, while a mother's dominance rank—an environmentally determined trait—can affect the dominance rank of her offspring. The first volume published on the subject in more than a decade, Maternal Effects in Mammals reflects advances in genomic, ecological, and behavioral research, as well new understandings of the evolutionary interplay between mothers and their offspring. Dario Maestripieri and Jill M. Mateo bring together a learned group of contributors to synthesize the vast literature on a range of species, highlight evolutionary processes that were previously overlooked, and propose new avenues of research. Maternal Effects in Mammals will serve as the most comprehensive compendium on and stimulus for interdisciplinary treatments of mammalian maternal effects. This book is a succinct yet comprehensive text devoted to the systematics, evolution, morphology, ecology, phsiology and behaviour of marine mammals. A unique interdisciplinary overview of the way mammals reproduce, this volume synthesizes research done by laboratory physiologists, behaviorists, population ecologists, and animal breeders. F. H. Bronson has drawn together the disparate literature in these areas to provide students and researchers with a comprehensive and biologically integrated approach to the study of mammalian reproduction. Each chapter presents a wealth of issues and questions, summarizing the current consensus on interpretations as well as viable alternatives under debate. The book is principally concerned with how environmental factors regulate reproduction. Bronson proposes that a mammal's reproductive performance routinely reflects simultaneous regulation by several environmental factors that interact in fascinatingly complex ways. Environment is defined broadly, and the chapters give equal weight to ecological and physiological factors when considering how variables such as food availability, ambient temperature, photoperiod, and social cues interact to regulate a mammal's reproduction. Particular attention is given to seasonal breeding, and a taxonomically arranged chapter underscores the importance of comparative and evolutionary biology to an understanding of mammalian reproduction. Mammalian Reproductive Biology is a powerful argument for the value and importance of interdisciplinary approaches to research. Its almost 1,500 references constitute the most comprehensive bibliography to date on this topic. Bronson also gives detailed consideration to promising areas for future research. Well organized, carefully planned, and clearly written, this book will become standard reading for scientists concerned with any aspect of mammalian biology. A comprehensive reference on the taxonomy and distribution in time and space of all currently recognized southern African fossil mammals. This title is also available as Open Access on Cambridge Core. Covering all the main animal groups, from jellyfish to mammals, this book unravels the story of animal evolution. This book celebrates the contributions of Dr. Frederick S. Szalay to the field of Mammalian Evolutionary Morphology. Professor Szalay is a strong advocate for biologically and evolutionarily meaningful character analysis. He has published about 200 articles, six monographs, and six books on this subject. This book features subjects such as the evolution and adaptation of mammals and provides up-to-date articles on the evolutionary morphology of a wide range of mammalian groups. This book is designed as a source and reference for people interested in the history and fossil record of North American tertiary mammals. Each chapter covers a different family or order, and includes information on anatomical features, systematics, the distribution of the genera and species at different fossil localities, and a discussion of their paleobiology. Many of these groups have never been covered in this fashion before. Detailed anatomical illustrations accompany information on the appearance, habits, geographical distribution, and evolutionary changes of the smaller mammals of Kenya, Uganda, and Tanzania. Bibliogs EVOLUTION OF ISLAND MAMMALS Evolution on islands differs in a number of important ways from evolution on mainland areas. Over millions of years of isolation, exceptional and sometimes bizarre mammals evolved on islands, such as pig-sized elephants and hippos, giant rats and gorilla-sized lemurs that would have been formidable to their mainland ancestors. Evolution of Island Mammals, Second Edition, provides an updated and expanded overview of the current knowledge on fossil island mammals worldwide, ranging from the Oligocene to the onset of the Holocene. The book addresses evolutionary processes and key aspects of insular mammal biology, exemplified by a variety of fossil species. Readers familiar with

the first edition will find here a host of updated and enhanced material, including: An entirely new chapter on the island rule Updated and expanded theoretical chapters Updated and improved taxonomic information Extensive coverage of new discoveries Body masses or body size indices for most extinct island mammals New figures visualizing the richness of the fossil record This accessible and richly illustrated textbook is written for graduate level students and professional researchers in evolutionary biology, palaeontology, biogeography, zoology, and ecology. The Evolutionary Biology of Extinct and Extant Organisms offers a thorough and detailed narration of the journey of biological evolution and its major transitional links to the biological world, which began with paleontological exploration of extinct organisms and now carries on with reviews of phylogenomic footprint reviews of extant, living fossils. This book moves through the defining evolutionary stepping stones starting with the evolutionary changes in prokaryotic, aquatic organisms over 4 billion years ago to the emergence of the modern human species in Earth's Anthropocene. The book begins with an overview of the processes of evolutionary fitness, the epicenter of the principles of evolutionary biology. Whether through natural or experimental occurrence, evolutionary fitness has been found to be the cardinal instance of evolutionary links in an organism between its ancestral and contemporary states. The book then goes on to detail evolutionary trails and lineages of groups of organisms including mammalians, reptilians, and various fish. The final section of the book provides a look back at the evolutionary journey of "nonliving" or extinct organisms, versus the modern-day transition to "living" or extant organisms. The Evolutionary Biology of Extinct and Extant Organisms is the ideal resource for any researcher or advanced student in evolutionary studies, ranging from evolutionary biology to general life sciences. Provides an updated compendium of evolution research history Details the evolution trails of organisms, including mammals, reptiles, arthropods, annelids, mollusks, protozoa, and more Offers an accessible and easy-to-read presentation of complex, in-depth evolutionary biology facts and theories A compelling look at the evolutionary history of marine mammals over the past 50 million years. Marine mammals have long captured the attention of humans. Ancient peoples etched seals and dolphins on the walls of Paleolithic caves; today, engineers develop microprocessors to track these denizens of the deep. This groundbreaking book from highly respected marine mammal paleontologist Annalisa Berta delves into the story of the extraordinary adaptations that gave the world these amazing animals. The Rise of Marine Mammals reveals remarkable fossil record discoveries that shed light on the origins, relationships, and diversification of marine mammals. Focusing on evolution and paleobiology, Berta provides an overview of marine mammal species diversity, enhanced with gorgeous life restorations by Carl Buell, Robert Boessenecker, William Stout, and Ray Troll and extensive line drawings by graphics editor James L. Sumich. The book also considers ongoing conservation challenges, demonstrating how the fossil record of adaptation in response to past environmental shifts may illuminate the way that marine mammals respond to global climate change. This invaluable evolutionary framework is essential for helping us understand how best to protect and conserve today's polar bears, whales, dolphins, seals, and fellow warm-blooded ocean dwellers. The Rise of Marine Mammals also describes exciting breakthroughs that rely on new techniques of study, including 3-D imaging, and molecular, finite element, and morphometric analyses, which have enhanced scientists' understanding of everything from the anatomy of fetal whales to the genes behind limb loss in cetaceans. Mammalogists, paleontologists, and marine scientists will find Berta's insights absorbing, while developmental and molecular biologists, geneticists, and ecologists exploring integrative research approaches will benefit from her fresh perspective. This book provides a general introduction to the biology of marine mammals, and an overview of the adaptations that have permitted mammals to succeed in the marine environment. Each chapter, written by experts in their field, will provide an up-to-date review and present the major discoveries and innovations in the field. Important technical advances such as satellite telemetry and time-depth-recorders will be described in boxes. This thorough revision of the classic Encyclopedia of Marine Mammals brings this authoritative book right up-to-date. Articles describe every species in detail, based on the very latest taxonomy, and a host of biological, ecological and sociological aspects relating to marine mammals. The latest

information on the biology, ecology, anatomy, behavior and interactions with man is provided by a cast of expert authors – all presented in such detail and clarity to support both marine mammal specialists and the serious naturalist. Fully referenced throughout and with a fresh selection of the best color photographs available, the long-awaited second edition remains at the forefront as the go-to reference on marine mammals. More than 20% NEW MATERIAL includes articles on Climate Change, Pacific White-sided Dolphins, Sociobiology, Habitat Use, Feeding Morphology and more Over 260 articles on the individual species with topics ranging from anatomy and behavior, to conservation, exploitation and the impact of global climate change on marine mammals New color illustrations show every species and document topical articles FROM THE FIRST EDITION “This book is so good...a bargain, full of riches...packed with fascinating up to date information. I recommend it unreservedly it to individuals, students, and researchers, as well as libraries." --Richard M. Laws, MARINE MAMMALS SCIENCE "...establishes a solid and satisfying foundation for current study and future exploration" --Ronald J. Shusterman, SCIENCE Humans are mammals. Most of us appreciate that at some level. But what does it mean for us to have more in common with a horse and an elephant than we do with a parrot, snake or frog? After a misdirected football left new father Liam Drew clutching a uniquely mammalian part of his anatomy, he decided to find out more. Considering himself as a mammal first and a human second, Liam delves into ancient biological history to understand what it means to be mammalian. In his humorous and engaging style, Liam explores the different characteristics that distinguish mammals from other types of animals. He charts the evolution of milk, warm blood and burgeoning brains, and examines the emergence of sophisticated teeth, exquisite ears, and elaborate reproductive biology, plus a host of other mammalian innovations. Entwined are tales of zoological peculiarities and reflections on how being a mammal has shaped the author's life. I, Mammal is a history of mammals and their ancestors and of how science came to grasp mammalian evolution. And in celebrating our mammalian-ness, Liam Drew binds us a little more tightly to the five and a half thousand other species of mammal on this planet and reveals the deep roots of many traits humans hold dear. The book aims to integrate our understanding of mammalian societies into a novel synthesis that is relevant to behavioural ecologists, ecologists, and anthropologists. It adopts a coherent structure that deals initially with the characteristics and strategies of females, before covering those of males, cooperative societies and hominid societies. It reviews our current understanding both of the structure of societies and of the strategies of individuals; it combines coverage of relevant areas of theory with coverage of interspecific comparisons, intraspecific comparisons and experiments; it explores both evolutionary causes of different traits and their ecological consequences; and it integrates research on different groups of mammals with research on primates and humans and attempts to put research on human societies into a broader perspective. Few aspects of American military history have been as vigorously debated as Harry Truman's decision to use atomic bombs against Japan. In this carefully crafted volume, Michael Kort describes the wartime circumstances and thinking that form the context for the decision to use these weapons, surveys the major debates related to that decision, and provides a comprehensive collection of key primary source documents that illuminate the behavior of the United States and Japan during the closing days of World War II. Kort opens with a summary of the debate over Hiroshima as it has evolved since 1945. He then provides a historical overview of thye events in question, beginning with the decision and program to build the atomic bomb. Detailing the sequence of events leading to Japan's surrender, he revisits the decisive battles of the Pacific War and the motivations of American and Japanese leaders. Finally, Kort examines ten key issues in the discussion of Hiroshima and guides readers to relevant primary source documents, scholarly books, and articles. How could a structure as complex as the vertebrate brain develop from the simplest multicellular animals? Natural selection offers an impeccable mechanism for the gradual transformation of species, but even Darwin sometimes expressed doubts about the origin of highly complex structures. Following an approach that has been termed "developmental evolutionary genetics," this book seeks to establish a correspondence between embryological processes and the phylogenetic history of an organism. The first detailed account of post-copulatory sexual selection and the

evolution of reproduction in mammals. Ranging from crocodiles and penguins to seals and whales, this synthesis explores the function and evolution of sensory systems in animals whose ancestors lived on land. It explores the dramatic transformation of smell, taste, sight, hearing, and balance that occurred as lineages of reptiles, birds, and mammals returned to aquatic environments. Evolution on islands differs in a number of important ways from evolution on mainland areas. Over millions of years of isolation, exceptional and sometimes bizarre mammals evolved on islands, such as pig-sized elephants and hippos, giant rats and gorilla-sized lemurs that would have been formidable to their mainland ancestors. This timely and innovative book is the first to offer a much-needed synthesis of recent advances in the exciting field of the evolution and extinction of fossil insular placental mammals. It provides a comprehensive overview of current knowledge on fossil island mammals worldwide, ranging from the Oligocene to the onset of the Holocene. The book addresses evolutionary processes and key aspects of insular mammal biology, exemplified by a variety of fossil species. The authors discuss the human factor in past extinction events and loss of insular biodiversity. This accessible and richly illustrated textbook is written for graduate level students and professional researchers in evolutionary biology, palaeontology, biogeography, zoology, and ecology. For most of us, the story of mammal evolution starts after the asteroid impact that killed the dinosaurs, but over the last 20 years scientists have uncovered new fossils and used new technologies that have upended this story. In Beasts Before Us, palaeontologist Elsa Panciroli charts the emergence of the mammal lineage, Synapsida, beginning at their murky split from the reptiles in the Carboniferous period, over three-hundred million years ago. They made the world theirs long before the rise of dinosaurs. Travelling forward into the Permian and then Triassic periods, we learn how our ancient mammal ancestors evolved from large hairy beasts with accelerating metabolisms to exploit miniaturisation, which was key to unlocking the traits that define mammals as we now know them. Elsa criss-crosses the globe to explore the sites where discoveries are being made and meet the people who make them. In Scotland, she traverses the desert dunes of prehistoric Moray, where quarry workers unearthed the footprints of Permian creatures from before the time of dinosaurs. In South Africa, she introduces us to animals, once called 'mammal-like reptiles', that gave scientists the first hints that our furry kin evolved from a lineage of egg-laying burrowers. In China, new, complete fossilised skeletons reveal mammals that were gliders, shovel-pawed Jurassic moles, and flat-tailed swimmers. This book radically reframes the narrative of our mammalian ancestors and provides a counterpoint to the stereotypes of mighty dinosaur overlords and cowering little mammals. It turns out the earliest mammals weren't just precursors, they were pioneers. Mammalian sociobiology is a rapidly advancing field which has made enormous strides in the last ten years. The last major monograph on the subject (Ewer, 1968) was published sixteen years ago, and there is a need for this information to be examined in terms of modern sociobiological theory. My approach throughout is evolutionary and is therefore directed strongly towards research which throws light on the ways in which mammals behave in their natural environments. I have tried to cover as wide a range of mammalian species as possible, although, in some cases, the only data available were obtained from captive individuals. The coverage of this book is not a reflection of the volume of literature published on different species, as I have tried to avoid undue emphasis on the social behaviour of primates and laboratory rodents. I have made scrupulous efforts throughout to avoid an anthropomorphic approach to mammalian behaviour. Terms such as 'strategy', 'evaluation' or 'choice' do not therefore imply conscious planning, but are used neutrally in the way in which they would be applied to a chess-playing computer. In the case of mammals, the programmer was natural selection. While I am fully aware that human beings are mammals, any detailed consideration of human social behaviour lies outside the scope of this book. However, the book may provide a complementary text to those interested in that subject. Despite the depiction of nature "red in tooth and claw," cooperation is actually widespread in the animal kingdom. Various types of cooperative behaviors have been documented in everything from insects to primates, and in every imaginable ecological scenario. Yet why animals cooperate is still a hotly contested question in literature on evolution and animal behavior. This book examines the history surrounding the

study of cooperation, and proceeds to examine the conceptual, theoretical and empirical work on this fascinating subject. Early on, it outlines the four different categories of cooperation -- reciprocal altruism, kinship, group-selected cooperation and byproduct mutualism -- and ties these categories together in a single framework called the Cooperator's Dilemma. Hundreds of studies on cooperation in insects, fish, birds and mammals are reviewed. Cooperation in this wide array of taxa includes, but is not limited to, cooperative hunting, anti-predator behavior, foraging, sexual coalitions, grooming, helpers-at-the nest, territoriality, 'policing' behavior and group thermoregulation. Each example outlined is tied back to the theoretical framework developed early on, whenever the data allows. Future experiments designed to further elucidate a particular type of cooperation are provided throughout the book.