

# Comparative Vertebrate Endocrinology

Fish Endocrinology (2 Vols.)Comparative Vertebrate  
EndocrinologyForensic Plant ScienceVertebrate  
EndocrinologyExperimental Endocrinology and  
Reproductive BiologyThe Reproduction of  
VertebratesComparative EndocrinologyVertebrate  
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Physiology: Fish NeuroendocrinologyHandbook of

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Hormones Comparative Studies of Energy Homeostasis in Vertebrates Animal Behavior

## **Fish Endocrinology (2 Vols.)**

This volume provides a review of developments in the fields of vertebrate and invertebrate endocrinology and neurobiology. Comparative endocrinology and neurobiology are gaining new momentum from the the sequencing of animal genomes.

## **Comparative Vertebrate Endocrinology**

Encyclopedia of Animal Behavior, Second Edition, the latest update since the 2010 release, builds upon the solid foundation established in the first edition. Updated sections include Host-parasite interactions, Vertebrate social behavior, and the introduction of 'overview essays' that boost the book's comprehensive detail. The structure for the work is modified to accommodate a better grouping of subjects. Some chapters have been reshuffled, with section headings combined or modified. Represents a one-stop resource for scientifically reliable information on animal behavior Provides comparative approaches, including the perspective of evolutionary biologists, physiologists, endocrinologists, neuroscientists and psychologists Includes multimedia features in the online version that offer accessible tools to readers looking to deepen their understanding

## **Forensic Plant Science**

The Ontogeny of Vertebrate Behavior is a collection of articles focused on the comparative psychology researches. The text is devoted to the development of vertebrate behavior, emphasizes the ontogenetic determinants, and answers questions related to the differentiation of selected response systems. The book is organized into 10 chapters that feature the concepts of vertebrate behavior and its ontogeny. It presents the study of behavioral development, as well as the visual perceptual systems and its evolution. It explains the perceptual abilities of the human infant and the early experience and problem-solving behavior. Cerebral effects of environmental manipulation and the behavioral phenomena are explained. The book also talks about the ontogeny of emotional, play, and exploratory behaviors; of sexuality and maternal behavior; and of mother-infant relations. It also discusses the principle and procedure of imprinting. Finally, it explains the vocal learning of avian species and the ontogeny of language, as well as the vocal abnormalities. This text will be invaluable to the students, novices, and professionals in psychology, ethology, endocrinology, and behavioral and developmental biology.

## **Vertebrate Endocrinology**

From a review of the previous edition: "I strongly recommend it as an essential reading and reference book for younger and older workers alike". Nature

## **Experimental Endocrinology and Reproductive Biology**

Comparative endocrinology is one of the most rapidly developing subdisciplines within the field of endocrinology, and it is having a significant impact on research at the molecular, cellular, organismal and environmental levels. Much of the current ferment in endocrinology is in reproductive endocrinology. The purpose of this volume on hormones and reproduction in fishes, amphibians and reptiles is to summarize our present understandings and to identify important research problems to be addressed in the area of comparative reproductive endocrinology. It was inspired by the gathering at Copper Mountain, Colorado, of eminent endocrine scientists from around the world on the occasion of the Tenth International Symposium on Comparative Endocrinology in July, 1985. While preparing for that meeting, we decided that a special volume on reproductive endocrinology was needed to summarize what is known and to stimulate research in particular directions. Why do we emphasize fishes, amphibians and reptiles? First, knowledge about the reproductive endocrinology of these ectothermic vertebrates can provide a clearer picture of the evolution of reproductive hormones and their effects on target organs. This comparative approach can lead to new theories about the evolution of reproductive control mechanisms. Second, studies concerning the reproductive endocrinology of "lower" vertebrates can result in development of "model systems" for application to studies of birds and mammals. Indeed, information

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about the patterns of reproductive control in ectothermic vertebrates can tell us which are evolutionarily stable and which are labile.

### **The Reproduction of Vertebrates**

Vertebrate Endocrinology represents more than just a treatment of the endocrine system-it integrates hormones with other chemical bioregulatory agents not classically included with the endocrine system. It provides a complete overview of the endocrine system of vertebrates by first emphasizing the mammalian system as the basis of most terminology and understanding of endocrine mechanisms and then applies that to non-mammals. The serious reader will gain both an understanding of the intricate relationships among all of the body systems and their regulation by hormones and other bioregulators, but also a sense of their development through evolutionary time as well as the roles of hormones at different stages of an animal's life cycle. Includes new full color format includes over 450 full color, completely redrawn image Features a companion web site hosting all images from the book as PPT slides and .jpeg files Presents completely updated and revitalized content with new chapters, such as Endocrine Disrupters and Behavioral Endocrinology Offers new clinical correlation vignettes throughout

### **Comparative Endocrinology**

Maintaining the original goal of the first edition to integrate the basic science of endocrinology with its

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physiological and clinical principles, this new edition succinctly summarizes in 450 pages the latest findings on hormone secretion and hormone action, as well as all the most recent insights into the physiology and pathophysiology of hormonal disorders. Coverage extends across the entire spectrum of endocrinology—from mammalian cells, plants, and insects to animal models and human diseases—with much increased coverage of diabetes and metabolism. Highlights include cutting-edge discussions of appetite disorders, obesity, reproductive failure, control of thyroid function, hormone action in man and the lower species, and the mechanisms subserving hormone secretion.

### **Vertebrate Endocrinology**

### **Fundamentals of Comparative Vertebrate Endocrinology**

During the past two decades, fish endocrinology has witnessed exciting developments due to our increased knowledge at all levels of biological organizations, including molecular biology, cell biology, physiology and behavior. New insights into development, neurobiology, immunology and molecular genetics closely correlated with classical aspects of endocrinology and represent important contributions to our knowledge on regulatory processes of vertebrates, including fish. The purpose of this book is to overview major advances in numerous research areas of fish endocrinology. Most

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of the chapters not only review and discuss the state-of-the-art in the respective field, but also show perspectives of future research. The book will be of interest to scientists involved in basic fish research, comparative endocrinology, fisheries and aquaculture as well as for students of fish biology.

### **Steroids in Nonmammalian Vertebrates**

This acclaimed text has been fully revised and updated, now incorporating issues including aging of the reproductive system, and updates on the chapters on conception and Gamete Transport and Fertilization, and Pregnancy. Human Reproductive Biology, Third Edition emphasizes the biological and biomedical aspects of human reproduction, explains advances in reproductive science and discusses the choices and concerns of today. Generously illustrated in full color, the text provides current information about human reproductive anatomy and physiology. The ideal book for courses on human reproductive biology - includes chapter introductions, sidebars on related topics of interest, chapter summaries and suggestions for further reading. All material completely updated with the latest research results, methods, and topics now organized to facilitate logical presentation of topics New chapters on Reproductive Senescence, Conception: Gamete Transport, Fertilization, Pregnancy: Maternal Aspects and Pregnancy: Fetal Development Full color illustrations

### **Hormones and Reproduction of**

## **Vertebrates, Volume 3**

Handbook of Hormones: Comparative Endocrinology for Basic and Clinical Research collates fundamental information about the structure and function of hormones from basic biology to clinical use. The handbook offers a rapid way to obtain specific facts about the chemical and molecular characteristics of hormones, their receptors and signalling pathways, and the biological activities they regulate. The evolution of hormones and gene families is also covered both in the text and in online ancillaries. Users will find simple and visual ways to learn key molecular information. Chapters and online ancillary resources integrate additional sections, providing a comparative molecular, functional, and evolutionary consideration. Provides the only single resource available with concise, yet informative descriptions of hormones in vertebrates, invertebrates, and plants Presents hormones in groups according to their origin, so that readers can easily understand their inter-relation Includes comparative information on the structures and functions of hormones enabling readers to understand both general and specific actions in and across species Ancillary website hosts additional information, including sequence data, comparative data, figures, and tables

## **Human Reproductive Biology**

The need for ion and water homeostasis is common to all life. For fish, ion and water homeostasis is an especially important challenge because they live in



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direct contact with water and because of the large variation in the salt content of natural waters (varying by over 5 orders of magnitude). Most fish are stenohaline and are unable to move between freshwater and seawater. Remarkably, some fishes are capable of life in both freshwater and seawater. These euryhaline fishes constitute an estimated 3 to 5% of all fish species. Euryhaline fishes represent some of the most iconic and interesting of all fish species, from salmon and sturgeon that make epic migrations to intertidal mudskippers that contend with daily salinity changes. With the advent of global climate change and increasing sea levels, understanding the environmental physiology of euryhaline species is critical for environmental management and any mitigative measures. This volume will provide the first integrative review of euryhalinity in fish. There is no other book that focuses on fish that have the capacity to move between freshwater and seawater. The different challenges of salt and water balance in different habitats have led to different physiological controls and regulation, which heretofore has not been reviewed in a single volume. Collects and synthesizes the literature covering the state of knowledge of the physiology of euryhaline fish Provides the foundational information needed for researchers from a variety of fields, including fish physiology, conservation and evolutionary biology, genomics, ecology, ecotoxicology, and comparative physiology All authors are the leading researchers and emerging leaders in their fields

## **Endocrinology**

The *Reproduction of Vertebrates* describes the vertebrate reproductive systems in an evolutionary sequence and according to taxonomic classes. This book is divided into seven chapters; each chapter tackles a specific vertebrate class. This text specifically considers fish, amphibians, reptiles, birds, mammals, and man. Discussions in each chapter include these species' evolutionary history, classification, external indications of sex, mating, fertilization, development, endocrinology, breeding seasons, sexual maturation, migration, response to environmental factors, and economic importance. The concluding chapter presents the comparative aspects of reproduction of these vertebrates. This text is of great value to teachers and students who are interested in the vertebrate reproductive system.

## **Endocrinology**

*Comparative Endocrinology* Aubrey Gorbman, Walton W. Dickhoff, Steven R. Vigna, Nancy B. Clark & Charles L. Ralph Keenly sensitive to the needs and capabilities of today's undergraduate, this textbook provides a broadly comparative approach to vertebrate endocrinology which is not confined to the study of mammals but compares and relates all vertebrate groups. The mechanism of hormonal action is considered as a general phenomenon and specifically with respect to each of the vertebrate hormones. The book's initial gland-by-gland approach permits a rapid review of the entire endocrine system

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and of the linkages between environmental changes and hormonally regulated adaptive changes. Gradually, the book's emphasis shifts from glands and their hormones to chemically modulated phenomena of increasing complexity. Thus, the relatively simpler process of integumentary pigment control and its regulation is discussed before calcium metabolism. Other multihormonally regulated phenomena like osmoregulation, and the highly complex subject of intermediary metabolism are discussed in stages throughout the work before being presented in their own right in later chapters. The book's comparative approach gives way in Chapter 13 to the examination of endocrine-regulated reproduction in mammals, particularly in man. This departure is due primarily to the well-recognized difficulty of generalizing from one animal group to another in light of the highly adaptive quality of vertebrate reproduction. The book, at this point, limits the range of discussion on the comparative aspects of reproductive endocrinology by choosing to present the best understood species—the rat and man—as the principal models for study of the phenomenon. As an instructional tool, *Comparative Endocrinology* is unsurpassed in its clarity. The use of all technical terms is preceded or accompanied by explanations for those terms. The most lavishly illustrated endocrinology text available, the book contains numerous summary diagrams to permit students to organize complex interrelationships visually. Photographs and electron micrographs are drawn from the vast body of original literature to provide outstanding illustrations of morphological features.

## **Insect Endocrinology**

Provides comprehensive coverage of the integrative role of hormones in co-ordinating bodily function in animals.

## **Behavioral Endocrinology**

## **Vertebrate Endocrinology**

This revision of the classic textbook in endocrinology will offer all of the advantages found in earlier editions of Hadley's "Endocrinology," including clear explanations, interesting applications, and in-depth coverage of vertebrate hormones. In addition, chapters are now presented in a lecture-friendly format, with headers summarizing each of the major concepts. As in earlier editions, basic principles of molecular, cellular, and integrative endocrinology are presented early, along with an updated guide to current research and methodologies. Following chapters contain discussions of each of the major endocrine systems, supplemented with the most important and interesting new information.

Neuroendocrine and reproductive systems are the specialty of the new co-author of this edition, and corresponding chapters have been appropriately increased in coverage. Special features of this new edition include 1. Expanded explanations of basic concepts 2. Updated information on research methodologies 3. Latest research findings added to chapters on each endocrine system 4. Additional

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diagrams and figures 5. Printed with second color scheme. 6. New "Think, Analyze, and Discuss" review questions For health professionals, veterinarians, pharmacologists, and anyone in a field where endocrinology is the focus.

### **Encyclopedia of Fish Physiology**

#### **Comparative Endocrinology**

This one-semester text is designed for an upper-level majors course. Vertebrates features a unique emphasis on function and evolution of vertebrates, complete anatomical detail, and excellent pedagogy. Vertebrate groups are organized phylogenetically, and their systems discussed within such a context. Morphology is foremost, but the author has developed and integrated an understanding of function and evolution into the discussion of anatomy of the various systems.

#### **An Introduction to Behavioral Endocrinology**

The study of fish neuroendocrinology has had a significant impact on our general understanding of the functional roles and evolution of a variety of neurochemical messengers and systems. Not only do fish possess unique neuroendocrine features, they have also been and remain an important vertebrate models for the discovery of new neuropeptides. In the last fifty years, neuroendocrinologists have

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documented a complex and seemingly infinite number of interactions between hormones and nerve structures. Gradually emerging from this knowledge is an understanding of the specific neurohormonal pathways and the messengers responsible for maintaining homeostasis in an aquatic environment and for regulating the functional systems that allow for the highly diverse life histories and reproductive tactics of fish. Despite its recent growth, breadth and unique attributes, there is no single text covering the discipline of fish neuroendocrinology. In fact, other than a few mammalian neuroendocrinology textbooks, there is a serious lack of texts in comparative neuroendocrinology. Currently, information on the anatomical organization and function of the various neuroendocrine systems in fish is only available in original research papers and reviews. By providing a current and comprehensive volume that highlights the specific properties of fish neuroendocrinology, this book will go beyond being the only reference text for fish neuroendocrinologists and will also serve comparative physiologists, endocrinologists, neuroanatomists and behaviourists interested in understanding the reciprocal actions between the nervous and endocrine systems. \*

- \* Highlights the specific properties of fish neuroendocrinology
- \* Emphasises the range and variety of interactions between neurobiology and endocrinology
- \* Discusses both anatomical and functional aspects of the Neuroendocrine system

\* Also serves comparative physiologists, endocrinologists, neuroanatomists and behaviourists interested in understanding the reciprocal actions between the nervous and endocrine systems

## **Hormones and Reproduction of Vertebrates: Mammals**

General, Comparative and Clinical Endocrinology of the Adrenal Cortex, Volume 2 focuses on the many facets of adrenocortical form and function. This book discusses the mammalian adrenal cortex in structural, pathological, clinical, biochemical and histophysiological standpoints, including the functional and structural characteristics of the adrenocortical homologue of two poikilothermic groups- Reptilia and Amphibia. The general perspective that the adrenocortical homologue secretes materials that have an ubiquity of metabolism and mode of action in the Vertebrata is also elaborated. General, Comparative and Clinical Endocrinology of the Adrenal Cortex, Volume 2 covers the steroidogenesis in the zones of the mammalian adrenal cortex; adrenal gland in Reptilia; adrenal cortex of Amphibia; and aldosterone secretion and its clinical disorders. This volume is a good source for zoologists, biologists, and specialists interested in the endocrinology of the adrenal cortex.

## **Vertebrate Endocrinology**

Sturkie's Avian Physiology is the classic comprehensive single volume on the physiology of domestic as well as wild birds. The Sixth Edition is thoroughly revised and updated, and features several new chapters with entirely new content on such topics as migration, genomics and epigenetics. Chapters throughout have been greatly expanded due to the

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many recent advances in the field. The text also covers the physiology of flight, reproduction in both male and female birds, and the immunophysiology of birds. The Sixth Edition, like the earlier editions, is a must for anyone interested in comparative physiology, poultry science, veterinary medicine, and related fields. This volume establishes the standard for those who need the latest and best information on the physiology of birds. Includes new chapters on endocrine disruptors, magnetoreception, genomics, proteomics, mitochondria, control of food intake, molting, stress, the avian endocrine system, bone, the metabolic demands of migration, behavior and control of body temperature Features extensively revised chapters on the cardiovascular system, pancreatic hormones, respiration, pineal gland, pituitary gland, thyroid, adrenal gland, muscle, gastro-intestinal physiology, incubation, circadian rhythms, annual cycles, flight, the avian immune system, embryo physiology and control of calcium. Stands out as the only comprehensive, single volume devoted to bird physiology Offers a full consideration of both blood and avian metabolism on the companion website (<http://booksite.elsevier.com/9780124071605>). Tables feature hematological and serum biochemical parameters together with circulating concentrations of glucose in more than 200 different species of wild birds

### **Sturkie's Avian Physiology**

Fish form an extremely diverse group of vertebrates. At a conservative estimate at least 40% of the world's



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vertebrates are fish. On the one hand they are united by their adaptations to an aquatic environment and on the other they show a variety of adaptations to differing environmental conditions - often to extremes of temperature, salinity, oxygen level and water chemistry. They exhibit an array of behavioural and reproductive systems. Interesting in their own right, this suite of adaptive physiologies provides many model systems for both comparative vertebrate and human physiologists. This four volume encyclopedia covers the diversity of fish physiology in over 300 articles and provides entry level information for students and summary overviews for researchers alike. Broadly organised into four themes, articles cover Functional, Thematic, and Phylogenetic Physiology, and Fish Genomics Functional articles address the traditional aspects of fish physiology that are common to all areas of vertebrate physiology including: Reproduction, Respiration, Neural (Sensory, Central, Effector), Endocrinology, Renal, Cardiovascular, Acid-base Balance, Osmoregulation, Ionoregulation, Digestion, Metabolism, Locomotion, and so on. Thematic Physiology articles are carefully selected and fewer in number. They provide a level of integration that goes beyond the coverage in the Functional Physiology topics and include discussions of Toxicology, Air-breathing, Migrations, Temperature, Endothermy, etc. Phylogenetic Physiology articles bring together information that bridges the physiology of certain groupings of fishes where the knowledge base has a sufficient depth and breadth and include articles on Ancient Fishes, Tunas, Sharks, etc. Genomics articles describe the underlying genetic component of fish physiology and high light their

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suitability and use as model organisms for the study of disease, stress and physiological adaptations and reactions to external conditions. Winner of a 2011 PROSE Award Honorable Mention for Multivolume Science Reference from the Association of American Publishers The definitive encyclopedia for the field of fish physiology Three volumes which comprehensively cover the entire field in over 300 entries written by experts Detailed coverage of basic functional physiology of fishes, physiological themes in fish biology and comparative physiology amongst taxonomic Groups Describes the genomic bases of fish physiology and biology and the use of fish as model organisms in human physiological research Includes a glossary of terms

### **Vertebrates**

Significant advances have been made in Endocrinology relating to developmental biology, environmental physiology, chronobiology, photobiology, reproductive biology, circulatory and digestive physiology, molecular biology, metabolic physiology, clinical and medical biology, etc. Comparative points of view have also accelerated the advancement of endocrinology. This book covers various topics of endocrinology from comparative, experimental, developmental, reproductive and clinical endocrine aspects. Another important feature of this book is that more than half the chapters are described in relation to the function of melatonin and the structure of the pineal organ. These trials of this book are reasonable and timely. Melatonin physiology

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has been reviewed from several points of view such as antioxidant and scavenger of hydroxyl radical, circadian clock and photoperiodic gonadal response including photoreceptor system, and development of vertebrates.

### **Trends in Comparative Endocrinology and Neurobiology**

#### **Fish Physiology: Euryhaline Fishes**

This 1912 book contains an account of the natural history of houseflies and their role in spreading disease.

#### **House-Flies and How They Spread Disease**

The publication of the extensive seven-volume work Comprehensive Molecular Insect Science provided a complete reference encompassing important developments and achievements in modern insect science. One of the most swiftly moving areas in entomological and comparative research is endocrinology, and this volume, Insect Endocrinology, is designed for those who desire a comprehensive yet concise work on important aspects of this topic. Because this area has moved quickly since the original publication, articles in this new volume are revised, highlighting developments in the related area since its original publication. Insect Endocrinology covers the mechanism of action of insect hormones

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during growth and metamorphosis as well as the role of insect hormones in reproduction, diapause and the regulation of metabolism. Contents include articles on the juvenile hormones, circadian organization of the endocrine system, ecdysteroid chemistry and biochemistry, as well as new chapters on insulin-like peptides and the peptide hormone Bursicon. This volume will be of great value to senior investigators, graduate students, post-doctoral fellows and advanced undergraduate research students. It can also be used as a reference for graduate courses and seminars on the topic. Chapters will also be valuable to the applied biologist or entomologist, providing the requisite understanding necessary for probing the more applied research areas. Articles selected by the known and respected editor-in-chief of the original major reference work, *Comprehensive Molecular Insect Science* Newly revised contributions bring together the latest research in the quickly moving field of insect endocrinology Review of the literature of the past five years is now included, as well as full use of data arising from the application of molecular technologies wherever appropriate

### **Vertebrate Endocrinology: Regulation of water and electrolytes**

The fifth edition of *The Physiology of Fishes* represents a compendium of knowledge across fish physiology, collecting up-to-date research into an easy-to-access single textbook. Written by the leaders in the field, it provides a comprehensive, accessible review of the core topics, integrating physiology with

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environmental science, ecology, evolution, and molecular cell biology. New chapters address Epigenetics, Biomechanics and Locomotion, and Behaviour and Learning. Each chapter contains an extensive bibliography, providing readers with the best sources from the primary literature. Almost three decades after the publication of the first edition, this book remains the only published single-volume work on fish physiology. The fifth edition provides an important reference for new students of fish biology, marine and freshwater biologists, ichthyologists, fisheries scientists, and comparative physiologists.

### **The Endocrinology of Growth, Development, and Metabolism in Vertebrates**

This comprehensive and thoroughly updated text surveys comparative vertebrate endocrinology. Intended for an upper division undergraduate class in endocrinology, this useful reference will also prove invaluable to faculty, researchers, and graduate students who require up-to-date information on a myriad of endocrine systems. This Third Edition focuses more attention on mammalian systems, neuroendocrinology, and molecular endocrinology. The text has been extensively reviewed by faculty who teach endocrinology and should establish a new teaching standard for comparative vertebrate endocrinology. Key Features\* Thoroughly revised and updated\* Comprehensive coverage of comparative endocrinology\* Well illustrated with numerous drawings, graphs, and photomicrographs Copyright ©

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## **Encyclopedia of Animal Behavior**

One of the only books to discuss all vertebrates, the fourth edition of *Vertebrate Endocrinology* has been completely reorganized and updated to explore the intricate mechanisms that control human physiology and behavior as well as that of other vertebrate animals. Perfect for students in endocrinology, zoology, biology and physiology, it allows readers to gain both an understanding of the intricate relationships among all of the body systems and their regulation by hormones and other bioregulators, but also a sense of their development through evolutionary time as well as the roles of hormones at different stages of an animal's life cycle. Chapters have been reorganized to more closely follow traditional classroom presentation and extensive suggested readings are included at the end of each chapter allowing the reader to obtain further information as well as connect concepts to the literature on which the book is based. For the first time, this edition features four-color illustrations. Provides a complete overview of the endocrine system of vertebrates by first emphasizing the mammalian system as the basis of most terminology and understanding of endocrine mechanisms and then applies that to non-mammals Introduces the reader to suitable concepts and explanation of jargon so that the reader will be able to delve directly into the primary literature on any endocrine-related topic with a background that will aid in their interpretation

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of new information Revised and updated chapter on The Molecular Bases for Chemical Regulation that now includes more evolutionary data Includes information on endocrine disrupting chemicals and their implications on the health of wildlife and humans

### **Comparative Endocrine Stress Responses in Vertebrates**

A brief glimpse into new insight driving the comparative biology of energy homeostasis in vertebrates with a focus on non-mammalian vertebrates. What are the key conserved mechanisms and what aspects of feeding behavior and energy allocation are different between species?

### **The Physiology of Fishes**

Endocrinology, as a discipline, was a late arrival in the corpus of established subjects. Its growth in recent years has been prodigious, extending from morphology to molecular levels. Most of the major endocrine glands were noted by the early anatomists, although the adrenal glands were not described until 1563 by Bartholomaeus Eustachius (1520-1574). On the other hand, elucidation of the function of these glands was extremely slow. Key work by A. A. Berthold (1849), although overlooked at the time, showed that comb atrophy in castrated fowl was prevented by testis transplantation. The idea that glands produced substances reaching the bloodstream directly and not via excretory ducts stemmed from Claude Bernard, who first used the

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term internal secretion in 1855. The clinical observations of Thomas Addison at Guy's Hospital-published as a monograph in 1855 entitled *The Constitutional and Local Effects of Disease of the Suprarenal Capsules* -were seminal. However, the stimulus of this early research did not bring immediate widespread further investigations. Upon the discovery of secretin in 1902, Bayliss and Starling considered the term "internal secretion" to be clumsy, and the term "hormone" was coined (from OQ[!UW-1 excite or arouse) and it was first used by Starling in his Croonian of 1905.

### **The Ontogeny of Vertebrate Behavior**

*Animal Behavior, Second Edition*, covers the broad sweep of animal behavior from its neurological underpinnings to the importance of behavior in conservation. The authors, Michael Breed and Janice Moore, bring almost 60 years of combined experience as university professors to this textbook, much of that teaching animal behavior. An entire chapter is devoted to the vibrant new field of behavior and conservation, including topics such as social behavior and the relationship between parasites, pathogens, and behavior. Thoughtful coverage has also been given to foraging behavior, mating and parenting behavior, anti-predator behavior, and learning. This text addresses the physiological foundations of behavior in a way that is both accessible and inviting, with each chapter beginning with learning objectives and ending with thought-provoking questions. Additionally, special terms and definitions are



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highlighted throughout. Animal Behavior provides a rich resource for students (and professors) from a wide range of life science disciplines. Provides a rich resource for students and professors from a wide range of life science disciplines Updated and revised chapters, with at least 50% new case studies and the addition of contemporary in-text examples Expanded and updated coverage of animal welfare topics Includes behavior and homeostatic mechanisms, behavior and conservation, and behavioral aspects of disease Available lab manual with fully developed and tested laboratory exercises Companion website includes newly developed slide sets/templates (PowerPoints) coordinated with the book

### **Endocrines and Osmoregulation**

#### **General, Comparative and Clinical Endocrinology of the Adrenal Cortex**

Forensic botany is the application of plant science to the resolution of legal questions. A plant's anatomy and its ecological requirements are in some cases species specific and require taxonomic verification; correct interpretation of botanical evidence can give vital information about a crime scene or a suspect or victim. The use of botanical evidence in legal investigations in North America is relatively recent. The first botanical testimony to be heard in a North American court concerned the kidnapping and murder of Charles Lindbergh's baby boy and the conviction of Bruno Hauptmann in 1935. Today, forensic botany

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encompasses numerous subdisciplines of plant science, such as plant anatomy, taxonomy, ecology, palynology, and diatomology, and interfaces with other disciplines, e.g., molecular biology, limnology and oceanography. Forensic Plant Science presents chapters on plant science evidence, plant anatomy, plant taxonomic evidence, plant ecology, case studies for all of the above, as well as the educational pathways for the future of forensic plant science. Provides techniques, collection methods, and analysis of digested plant materials Shows how to identify plants of use for crime scene and associated evidence in criminal cases The book's companion website: <http://booksite.elsevier.com/9780128014752>, will host a microscopic atlas of common food plants.

## **Hormones and Reproduction in Fishes, Amphibians, and Reptiles**

This series of volumes represents a comprehensive and integrated treatment of reproduction in vertebrates from fishes of all sorts through mammals. It is designed to provide a readable, coordinated description of reproductive basics in each group of vertebrates as well as an introduction to the latest trends in reproductive research and our understanding of reproductive events. Whereas each chapter and each volume is intended to stand alone as a review of that topic or vertebrate group, respectively, the volumes are prepared so as to provide a thorough topical treatment across the vertebrates. Terminology has been standardized across the volumes to reduce confusion where

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multiple names exist in the literature, and a comprehensive glossary of these terms and their alternative names is provided. A complete, essential and up to date reference for research scientists working on vertebrate hormones and reproduction - and on animals as models in human reproductive research Covers the endocrinology, neuroendocrinology, physiology, behaviour and anatomy of vertebrate reproduction Structured coverage of the major themes for all five vertebrate groups allows a consistent treatment for all Special chapters elaborate on features specific to individual vertebrate groups and to comparative aspects, similarities and differences between them

### **Fish Physiology: Fish Neuroendocrinology**

The Endocrinology of Growth, Development, and Metabolism in Vertebrates provides an overview of vertebrate endocrinology. This book aims to strengthen the bridge between medical and comparative endocrinologists by addressing the benefits that they can derive from this association. Organized into five parts encompassing 24 chapters, this volume starts with a discussion on the structure and biological function of growth hormone (GH) and prolactin (PRL) family. This book then explains the extrinsic, genetic, and humoral factors that influence animal growth, particularly in poikilotherms. This text also elaborates the environmental conditions that affect the growth of poikilotherms, including food availability, temperature, and photoperiod. Other

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chapters discuss how somatotropin affects the growth development in homeotherms, such as livestock species. The reader is also introduced to the metabolic actions of GH, which can be described in terms of short-lived insulin-like effects.

Endocrinologists, molecular endocrinologists, biologists, molecular biologists, biochemists, researchers, and physicians will find this book extremely useful.

### **Handbook of Hormones**

The second edition of a popular introduction to the field of behavioral endocrinology.

### **Comparative Studies of Energy Homeostasis in Vertebrates**

### **Animal Behavior**

Steroids in Nonmammalian Vertebrates offers a critical assessment of each identification and/or quantification of a steroid in nonmammalian vertebrates, with particular reference to fishes, amphibians, reptiles, and birds. Discussions focus on corticosteroids, androgens, estrogens, functional morphology of steroidogenic tissues, and biological effects of steroid hormones. The methods used to study steroid biosynthesis are also covered. This text is comprised of eight chapters; the first of which explains the importance of understanding the endocrinology of nonmammalian vertebrates. The

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