

Laboratory Studies Of Vertebrate And Invertebrate Embryos Guide And Atlas Of Descriptive And Experimental Development 9th Edition

This volume is a revised and augmented edition of part of the book *Ob"ekty Biologii Razvitiya (Animal Species for Developmental Studies)* published in Russian in 1975 in the series of monographs *Problemy Biologii Razvitiya (Problems of Developmental Biology)* by Nauka Publishers, Moscow. That book described the development of organisms most frequently used in developmental biology studies. Data were provided for 22 animal species, belonging to different taxa, from protists to mammals. For the English edition we decided to divide the original book into two parts dealing with vertebrates and invertebrates, respectively. This volume deals with vertebrate species. When choosing these species, their advantages for laboratory studies, information available, and availability for experimentation in the USSR and in Europe were taken into account. This geographical criterion explains the absence in the book of a number of species widely used in the laboratories of the USA, Japan, and other countries, such as *Rana pipiens*, *Cynops pyrrhogaster*, and others. Besides the classical laboratory animals, some fish have been described since the study of the mechanisms of their development and attempts to control their ontogenesis are of immediate value and the results obtained can be tested on the mass material. A study of the development of laboratory mammals is of special interest since current problems of modern medicine and veterinary sciences are tackled using these animals.

Laboratory Studies of Vertebrate and Invertebrate Embryos Guide and Atlas of Descriptive and Experimental Development Benjamin-Cummings Publishing Company

Ask anyone who has owned a pet and they'll assure you that, yes, animals have personalities. And science is beginning to agree.

Researchers have demonstrated that both domesticated and nondomesticated animals—from invertebrates to monkeys and apes—behave in consistently different ways, meeting the criteria for what many define as personality. But why the differences, and how are personalities shaped by genes and environment? How did they evolve? The essays in *Animal Personalities* reveal that there is much to learn from our furred and feathered friends. The study of animal personality is one of the fastest-growing areas of research in behavioral and evolutionary biology. Here Claudio Carere and Dario Maestripieri, along with a host of scholars from fields as diverse as ecology, genetics, endocrinology, neuroscience, and psychology, provide a comprehensive overview of the current research on animal personality. Grouped into thematic sections, chapters approach the topic with empirical and theoretical material and show that to fully understand why personality exists, we must consider the evolutionary processes that give rise to personality, the ecological correlates of personality differences, and the physiological mechanisms underlying personality variation.

A respected resource for decades, the *Guide for the Care and Use of Laboratory Animals* has been updated by a committee of experts, taking into consideration input from the scientific and laboratory animal communities and the public at large. The Guide incorporates new scientific information on common laboratory animals, including aquatic species, and includes extensive references. It is organized around major components of animal use: Key concepts of animal care and use. The Guide sets the framework for the humane care and use of laboratory animals. Animal care and use program. The Guide discusses the concept of a broad Program of Animal Care and Use, including roles and responsibilities of the Institutional Official, Attending Veterinarian and the Institutional Animal Care and Use Committee. Animal environment, husbandry, and management. A chapter on this topic is now divided into sections on terrestrial and aquatic animals and provides recommendations for housing and environment, husbandry, behavioral and population management, and more. Veterinary care. The Guide discusses veterinary care and the responsibilities of the Attending Veterinarian. It includes recommendations on animal procurement and transportation, preventive medicine (including animal biosecurity), and clinical care and management. The Guide addresses distress and pain recognition and relief, and issues surrounding euthanasia. Physical plant. The Guide identifies design issues, providing construction guidelines for functional areas; considerations such as drainage, vibration and noise control, and environmental monitoring; and specialized facilities for animal housing and research needs. The *Guide for the Care and Use of Laboratory Animals* provides a framework for the judgments required in the management of animal facilities. This updated and expanded resource of proven value will be important to scientists and researchers, veterinarians, animal care personnel, facilities managers, institutional administrators, policy makers involved in research issues, and animal welfare advocates.

The *Dissection of Vertebrates* covers several vertebrates commonly used in providing a transitional sequence in morphology. With illustrations on seven vertebrates – lamprey, shark, perch, mudpuppy, frog, cat, pigeon – this is the first book of its kind to include high-quality, digitally rendered illustrations. This book received the Award of Excellence in an Illustrated Medical Book from the Association of Medical Illustrators. It is organized by individual organism to facilitate classroom presentation. This illustrated, full-color primary dissection manual is ideal for use by students or practitioners working with vertebrate anatomy. This book is also recommended for researchers in vertebrate and functional morphology and comparative anatomy. The result of this exceptional work offers the most comprehensive treatment than has ever before been available. * Received the Award of Excellence in an Illustrated Medical Book from the Association of Medical Illustrators * Expertly rendered award-winning illustrations accompany the detailed, clear dissection direction * Organized by individual organism to facilitate classroom presentation * Offers coverage of a wide range of vertebrates * Full-color, strong pedagogical aids in a convenient lay-flat presentation

The collection of systems represented in this volume is a unique effort to reflect the diversity and utility of models used in biomedicine. That utility is based on the consideration that observations made in particular organisms will provide insight into the workings of other, more complex systems. This volume is therefore a comprehensive and extensive collection of these important medical parallels.

A current and authoritative guide, *Methods in Avian Embryology* presents a combination of classical embryological techniques and modern molecular biological approaches to studying the developing avian embryo. The only one of its kind, this book is specifically devoted to providing a detailed approach to studying avian embryos. It also describes how to use this system to study problems in cell, developmental, and neurobiology. The protocols emphasize microsurgery, histology, and cellular and molecular marking, which are not covered in the usual molecular biology methods manuals. The methods include: embryonic transplantations, cell culture and organ culture, in situ hybridization, classical histological techniques, and retrovirally mediated gene transfer. Key Features * Complete and easy-to-follow procedures * Helpful illustrations * Distinguished group of authors * Wide range of approaches

First Published in 1988, this five volume set documents the transmission and growth of Arthropod born viruses. Carefully compiled and filled with a vast repertoire of notes, diagrams, and references this book serves as a useful reference for Students of Epidemiology, and other practitioners in their respective fields.

Scientific experiments using animals have contributed significantly to the improvement of human health. Animal experiments were crucial to the conquest of polio, for example, and they will undoubtedly be one of the keystones in AIDS research. However, some persons believe that the cost to the animals is often high. Authored by a committee of experts from various fields, this book discusses the benefits that have resulted from animal research, the scope of animal research today, the concerns of advocates of animal welfare, and the prospects for finding alternatives to animal use. The authors conclude with specific recommendations for more consistent government action.

The eighth edition of this widely respected volume continues the tradition of introducing laboratory studies of developmental biology with its broad coverage, copious illustrations and detailed descriptions of a wide range of developing stages. Unique in its combination of a detailed

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atlas with interesting exercises on living embryos, it also contains complete instructions for additional experimental studies that include state-of-the-art research approaches. The eighth edition adds a new chapter on the development of the mouse embryo, many new illustrations, seven new advanced hands-on studies and a glossary.

Some investigators have hypothesized that estrogens and other hormonally active agents found in the environment might be involved in breast cancer increases and sperm count declines in humans as well as deformities and reproductive problems seen in wildlife. This book looks in detail at the science behind the ominous prospect of "estrogen mimics" threatening health and well-being, from the level of ecosystems and populations to individual people and animals. The committee identifies research needs and offers specific recommendations to decisionmakers. This authoritative volume: Critically evaluates the literature on hormonally active agents in the environment and identifies known and suspected toxicologic mechanisms and effects of fish, wildlife, and humans. Examines whether and how exposure to hormonally active agents occurs--in diet, in pharmaceuticals, from industrial releases into the environment--and why the debate centers on estrogens. Identifies significant uncertainties, limitations of knowledge, and weaknesses in the scientific literature. The book presents a wealth of information and investigates a wide range of examples across the spectrum of life that might be related to these agents.

Announcements for the following year included in some vols.

This high-quality laboratory manual may accompany any comparative anatomy text, but especially Kardong's *Vertebrates: Comparative Anatomy, Function, Evolution* or Kent/Carr's *Comparative Anatomy*. This text carefully guides students through dissections and is richly illustrated.

The real Hans Spemann, German embryologist (1869-1941), developed a concept of embryonic induction through his experiments on early amphibian embryos which demonstrated neural induction by the primary organizer and evocation of the lens by the optic vesicle. For his discovery of the "organizer" he was awarded the Nobel Peace in Physiology and Medicine in 1935, while he was Professor of Zoology at Freiburg, Germany. In the twenties and early thirties Spemann's laboratory was a mecca for students and investigators entering the new field of experimental embryology.

Detailed and concise dissection directions, updated valuable information and extraordinary illustrations make *The Dissection of Vertebrates, 3rd Edition* the new ideal manual for students in comparative vertebrate anatomy, as well as a superb reference for vertebrate and functional morphology, vertebrate paleontology, and advanced level vertebrate courses, such as in mammalogy, ornithology, ichthyology, and herpetology. This newly revised edition of the most comprehensive manual available continues to offer today's more visually oriented student with a manual combining pedagogically effective text with high-quality, accurate and attractive visual references. This new edition features updated and expanded phylogenetic coverage, revisions to the illustrations and text of the lamprey, shark, perch, mudpuppy, frog, cat, pigeon, and reptile skull chapters, and new sections on amphioxus or lancelet (*Branchiostoma*, Cephalochordata), a sea squirt (*Ciona*, Urochordata), shark musculature, a gravid shark, shark embryo, cat musculature, and the sheep heart. Using the same systematic approach within a systemic framework as the first two editions, *The Dissection of Vertebrates, 3rd Edition* covers several animals commonly used in providing an anatomical transition sequence. Nine animals are covered: amphioxus, sea squirt, lamprey, shark, perch, mudpuppy, frog, cat, and pigeon, plus five reptile skulls, two mammal skulls, and the sheep heart. Winner of a 2020 Textbook Excellence Award (College) (Texty) from the Textbook and Academic Authors Association Seven detailed vertebrate dissections, providing a systemic approach Includes carefully developed directions for dissection Original, high-quality award-winning illustrations Clear and sharp photographs Expanded and updated features on phylogenetic coverage New sections on: amphioxus (Cephalochordata); sea squirt (Urochordata); shark musculature; gravid shark; shark embryo; cat musculature; sheep heart

Expanding on the National Research Council's *Guide for the Care and Use of Laboratory Animals*, this book deals specifically with mammals in neuroscience and behavioral research laboratories. It offers flexible guidelines for the care of these animals, and guidance on adapting these guidelines to various situations without hindering the research process. *Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research* offers a more in-depth treatment of concerns specific to these disciplines than any previous guide on animal care and use. It treats on such important subjects as: The important role that the researcher and veterinarian play in developing animal protocols. Methods for assessing and ensuring an animal's well-being. General animal-care elements as they apply to neuroscience and behavioral research, and common animal welfare challenges this research can pose. The use of professional judgment and careful interpretation of regulations and guidelines to develop performance standards ensuring animal well-being and high-quality research. *Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research* treats the development and evaluation of animal-use protocols as a decision-making process, not just a decision. To this end, it presents the most current, in-depth information about the best practices for animal care and use, as they pertain to the intricacies of neuroscience and behavioral research.

The Laboratory for Vertebrate Paleontology at the University of Alberta houses type specimens of fossil fishes. This book is a catalogue of these specimens. Included for each entry is taxonomy, detailed collection locality information, the citation wherein the species was originally described, and a list of individual type specimens. This is the first list ever compiled of the fossil fish types deposited in the collections of the University of Alberta Laboratory for Vertebrate Paleontology (UALVP). This collection contains 88 fish holotypes, 966 fish paratypes, 55 casts of fish holotypes from other museums, and 20 casts of fish paratypes from other museums. Key selling features: List all of the type specimens of fossil fishes currently housed in the collection of the Laboratory of Vertebrate Paleontology at the University of Alberta in Edmonton, Canada. Provides details of all 88 holotypes and nearly 1000 paratypes as well as casts of types specimens held in other museum collections. Includes information on unpublished "types" - type specimens of not yet described new species.

This high-quality laboratory manual may accompany any comparative anatomy text, but correlates directly to Kardong's *Vertebrates: Comparative Anatomy, Function, Evolution* text. This text carefully guides students through dissections and is richly illustrated. First and foremost, the basic animal architecture is presented in a clear and concise manner. This richly illustrated manual carefully guides students through dissections. Throughout the dissections, the authors pause strategically to bring the students attention to the significance of the material they have just covered.

For the "more traditional" one-semester general zoology lab surveying the animal phyla, this manual has proved to be a popular choice. Beginning with an introduction to the microscopes and study of the cell, students are guided through an examination of the phyla with emphasis on systems -- their similarities and differences. Selected animal types are used for concentrated study. The study of vertebrate systems includes dissection of the frog and the fetal pig. Concluding the manual are exercises on inheritance,

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the evolutionary process, animal behavior and physiology, and ecology. The illustrations are impressive -- more than 100 photos and original drawings are included. Circulatory systems are in color to aid the comparative study of vertebrates. Appendices summarize anatomical terms, symmetry, and body planes and sections; and illustrate comparative vertebrate anatomy. The lecture text used in class with this lab manual is Biology of Animals by Hickman, Jr, Roberts and Larson. The publisher is McGraw-Hill.

This new book is the only in-depth, single-author reference on heart development. Clearly written, with lavish color illustrations, it provides a more clinical, systematic, up-to-date synthesis of the subject than any other volume, spanning the range from classic anatomic studies to recent findings in molecular biology. Author Margaret Kirby posits a unifying understanding of heart tube formation from the cardiogenic fields, and the book covers topics that are often omitted from discussions of heart development, such as myocardial function, cardiac innervation, conduction system development, evolutionary developmental biology of the heart, and myocardial stem cells. The book is beautifully illustrated by Karen Waldo, an artist who has collaborated with Dr. Kirby for many years.

This high-quality laboratory manual may accompany any comparative anatomy text, but correlates directly to Kardong's Vertebrates: Comparative Anatomy, Function, Evolution text. This lab manual carefully guides students through dissections and is richly illustrated. First and foremost, the basic animal architecture is presented in a clear and concise manner. Throughout the dissections, the authors pause strategically to bring the students' attention to the significance of the material they have just covered.

Praised for its comprehensive coverage and clear writing style, this textbook explores how the anatomy, physiology, ecology, and behavior of animals interact to produce organisms that function effectively in their environments and how lineages of organisms change through evolutionary time.

The Zebrafish in Biomedical Research: Biology, Husbandry, Diseases, and Research Applications is a comprehensive work that fulfills a critical need for a thorough compilation of information on this species. The text provides significant updates for working vivarium professionals maintaining zebrafish colonies, veterinarians responsible for their care and well-being, zoologists and ethologists studying the species, and investigators using the species to gain critical insights into human physiology and disease. As the zebrafish has become an important model organism for the study of vertebrate development and disease, organ function, behavior, toxicology, cancer, and drug discovery, this book presents an important resource for future research. Presents a complete view of the zebrafish, covering their biology, husbandry, diseases and research applications Includes the work of world-renowned authors Provides the first authoritative and comprehensive treatment of zebrafish in biomedical research as part of the ACLAM series

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