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Histology and Cell Biology: Examination and Board Review, Fifth Edition
Spider Ecophysiology

LAYLAH ALIJAH

A Guide to Modern Biology Springer Science & Business Media
Oxygen uptake for metabolic energy demand and the elimination of the resulting carbon dioxide is one of the essential processes in all higher life forms; in the case of animals, everything from protozoans to insects and vertebrates including humans.&#65533; Respiratory Biology of Animals provides a contemporary and truly integrative approach to the topic, adopting a strong evolutionary theme. It covers aerobic metabolism at all levels, from gas exchange organs such as skin, gills, and lungs to mitochondria - the site of cellular respiration. The book also describes the functional morphology and physiology of the circulatory system, which often contains gas-carrying pigments and is important for pH regulation in the organism. A final section describes the evolution of animal respiratory systems. Throughout the book, examples are selected from the entire breadth of the animal kingdom, identifying common themes that transcend taxonomy. Respiratory Biology of Animals is an accessible supplementary text suitable for both senior undergraduate and graduate students taking courses in respiratory biology, comparative animal physiology, and environmental physiology. It is also of relevance and use to the many professional academics requiring a concise but authoritative overview of the topic.
Fish Physiology: Primitive Fishes Springer Science & Business Media
The history of biology is replete with examples of how comparative biology helped clarify the meaning of structure and function in complex animals. Indeed, without the comparative approach to biology, the birth of physiology would have been delayed. Fishman (1979) Comparative morphologists are challenged to discern the changes that have occurred in evolution and development of the forms and states of organisms as well as to explain the factors that compelled them (e.g. Dullemeijer 1974). The main objective of this contribution is to present what I deem to be some of the fundamental structural aspects in the design of respiratory or gans while debating and speculating on when, how and why these states were founded. My main thesis is that the modern gas exchangers are products of protracted processes that have en tailed adaptation to specific environments and lifestyles. Only those feasible designs that have proven adequately competent in meeting demands for molecular oxygen have been preserved. Unfortunately, August Krogh's (Krogh 1941) and Pierre Dejours' (Dejours 1975) seminal works on the comparative physiology of the respiratory organs have not been paralleled by equally exten sive and detailed morphological work. Our approach has been to look into the limiting functional properties as regards the respi ratory capacities of gas exchangers while finding out the specific structural adaptations that have evolved to meet the metabolic needs or to look into form and to discern how it limits function. This has allowed a deduction of structure-function correlation.
Biology for AP ® Courses CRC Press
Designed for use in both academic and research environments, this volume addresses applications of computer modelling and fluid dynamics to biological systems. Emphasis is placed on demonstrating the important roles that mathematical theory and computer technology play in the medical arena.
Medical Applications of Computer Modelling Holt McDougal
Monitoring of Respiration and Circulation provides biomedical engineers with a comprehensive source for understanding the variables of the respiratory and circulatory systems, which indicate how well these systems are functioning. This book covers techniques for measuring the variables, including modeling, medical instrumentation, and signal processing. It also discusses the reasons for the measurements. The book describes the measurement principles, as well as the related physiology and anatomy, which is necessary to interpret the measurement's meaning. The author's goal is to provide a survey of the field, a review of the necessary fundamentals on which deeper study can be based, and an overview of possible search terms. The early chapters of Monitoring of Respiration and Circulation provide an overview of the fundamentals of the respiratory and circulatory systems, and modeling. The intermediate chapters describe important clinical measurement methods and the information they provide about patients, including approaches, possibilities, limitations, and accuracies. Next, the book discusses state-of-the-art therapeutic instruments and supporting systems, such as infusion drips and pumps, heart-lung machines, and pacemakers. Everything comes together in the final chapter, where patient monitoring is described as a feedback process with a human in the loop, underscoring the need for comprehensive yet understandable information in order to provide high-quality therapy.
Modern Biology Springer
A complete one-stop review of the clinically important aspects of histology and cell biology--user-friendly, concise, and packed with learning aids! The ideal review for course exams and the USMLE! 4 STAR DOODY'S REVIEW! "This is a wonderful resource for students of medicine, dentistry, and the allied health sciences. The book combines traditional topics in histology with elements of modern cell biology and medical physiology.... This is the body of information that students of microscopic anatomy need to know to understand the foundations of clinical medicine and succeed on future licensing examinations. Students will use this book to review key concepts in modern histology."--Doody's Review Service This popular title in the LANGE series is specifically designed to help you make the most of your study time--whether you're studying histology and cell biology for the first time or reviewing for course exams or the USMLE. With this focused review you will be able to pinpoint your weak areas, and then improve your comprehension with learning aids especially designed to help you understand and retain even the most difficult material. You will find complete easy-to-follow coverage of all the need-to-know material: fundamental concepts, the four basic tissues types, and organs and organ systems--presented in a consistent, time-saving design. At the conclusion of the book, you will find a Diagnostic Final Exam that has been updated with longer, case-related stems that mimic the USMLE Step 1 examination. Each chapter is devoted to one

specific topic and includes learning aids such as: Objectives that point out significant facts and concepts that you must know about each topic Max Yield™ study questions that direct you to key facts needed to master material most often covered on exams A synopsis presented in outline form that reviews all the basic histology and related cell biology covered on exams Multiple-choice questions written in a style most commonly used in medical school NEW to this Edition: Thoroughly revised Q&A Completely updated text and practice questions to reflect current knowledge Information added to each chapter regarding relevant pathology/clinical issues; possibly as a separate colored box Visit www.LangeTextbooks.com to access valuable resources and study aids. Thorough coverage you won't find anywhere else! FUNDAMENTAL CONCEPTS: Methods of Study, The Plasma Membrane & Cytoplasm, The Nucleus & Cell Cycle, THE FOUR BASIC TISSUE TYPES: Epithelial Tissue, Connective Tissue, Adipose Tissue, Cartilage, Bone, Integrative Multiple-Choice Questions: Connective Tissues Nerve Tissue, Muscle Tissue, Integrative Multiple-Choice Questions: Basic Tissue Types, ORGANS & ORGAN SYSTEMS: Circulatory System, Peripheral Blood, Hematopoiesis, Lymphoid System, Digestive Tract, Glands Associated with the Digestive Tract, Integrative Multiple-Choice Questions: Digestive System, Respiratory System, Skin, Urinary System, Pituitary & Hypothalamus, Adrenals, Islets of Langerhans, Thyroid, Parathyroids, & Pineal Body, Male Reproductive System, Female Reproductive System, Integrative Multiple-Choice Questions: Endocrine System, Sense Organs, Diagnostic Final Examination

Mathematical Physiology Springer

This report considers the biological and behavioral mechanisms that may underlie the pathogenicity of tobacco smoke. Many Surgeon General's reports have considered research findings on mechanisms in assessing the biological plausibility of associations observed in epidemiologic studies. Mechanisms of disease are important because they may provide plausibility, which is one of the guideline criteria for assessing evidence on causation. This report specifically reviews the evidence on the potential mechanisms by which smoking causes diseases and considers whether a mechanism is likely to be operative in the production of human disease by tobacco smoke. This evidence is relevant to understanding how smoking causes disease, to identifying those who may be particularly susceptible, and to assessing the potential risks of tobacco products.

The Biology of Death CRC Press

Divided into two parts, the book begins with a pedagogical presentation of some of the basic theory, with chapters on biochemical reactions, diffusion, excitability, wave propagation and cellular homeostasis. The second, more extensive part discusses particular physiological systems, with chapters on calcium dynamics, bursting oscillations and secretion, cardiac cells, muscles, intercellular communication, the circulatory system, the immune system, wound healing, the respiratory system, the visual system, hormone physiology, renal physiology, digestion, the visual system and hearing.

Animal Structure and Function Pitambar Publishing

I Used to Know That: Science covers the many facets of the modern scientific world including the general principles of physics, chemistry, and biology and explains how they affect our everyday lives. Do you know why we are able to see light and hear sound? What is the Earth made of? How does the body produce energy? And, most important, does any of this matter? In I Used to Know That: Science, Marianne Taylor will answer those questions and more and will tell you why the answers are vital to us and to the scientists working on the cutting edge of scientific research. In this book, you will learn about: Physics-Energy and Electricity: How electricity is generated; how heat moves from one place to another; the relationship between electricity and magnetism Forces: The four fundamental forces; the origins of the universe; the composition and behavior of planets, stars and galaxies; the basic laws of mechanical physics Waves, Radiation and Space: How waves behave and how they affect us; the electromagnetic spectrum; radioactivity Chemistry-The Periodic Table: How to read the table; how atoms work; chemical bonds and reactions Fuels, Air and Pollution: Chemicals, both helpful and dangerous, in the air; crude oil and its useful chemicals; live cycle assessments Metals: The Earth’s structure; metals and alloys; construction materials Organic Chemistry: Natural polymers and their usefulness; nutrition; which chemicals are harmful Biology-Human (and Other) Bodies: The body’s systems-circulatory, skeletal, muscular, nervous, digestive, reproductive, respiratory and sensory Cell Biology: The structure of a cell; how photosynthesis works; what hormones do Evolution and Environment Ecology: The origins of life; how the eukaryotic cell evolved; mutation and natural selection; population, predation and extinction Genetics: what chromosomes are; how you inherit genetic traits; reproduction and cloning I Used to Know That: Science is a necessary read for anyone who wants to understand the modern scientific world and how the general principles of physics, chemistry, and biology affect our everyday lives.

Teacher's Guide to the Modern Biology Program CRC Press

Asthma is a chronic airway disease affecting over 300 million people worldwide with an expected increase of an additional 100 million by 2025. Past decade has observed a notable increase in asthma prevalence on both national and global levels with highest rates observed in western countries (about 30%). Over the past 40 years, a drastic increase in global prevalence, morbidity, mortality, and economic burden have been observed due to asthma especially in children. The rising numbers of hospital admissions for asthma, especially young children, reflect an increase in severe asthma, poverty and lack of proper disease management. Worldwide, approximately 180,000 deaths annually are caused due to this condition. The financial burden on a single asthma patient per year in different western countries ranges from US$300–1,300. Asthma is an intricate respiratory disorder with differences in its severity, natural history and hence treatment response. These differences in intensities of various presentations such as bronchial hyper-responsiveness, airway inflammation, mucus production, airflow obstruction make asthma a heterogeneous disease. The mainstay of current therapies for asthma includes inhaled corticosteroids, phosphodiesterase inhibitors, leukotriene modifiers and β2-adrenoceptor agonists. Some of the currently available drugs are efficient in one or more aspects. However the associated side effects or heterogeneity of the disease limit their usefulness and efficacy, thereby putting a demand on development of new drugs and therapies. On the other hand, asthma has also been treated/managed via herbal medications. These approaches have been described in Unani, Ayurvedic or Chinese system of medicine since antiquity. In fact, several anti-asthmatic drugs were developed from herbs commonly utilized in the non-Western system of medicine. This book focuses on the pathophysiology of asthma, its medication (both herbal and modern), limitations and their future prospects.

Physical Hazards of the Workplace WIT Press (UK)

Divided into two volumes, the book begins with a pedagogical presentation of some of the basic theory, with chapters on biochemical reactions, diffusion, excitability, wave propagation and cellular homeostasis. The second, more extensive part discusses particular physiological systems, with chapters on calcium dynamics, bursting oscillations and secretion, cardiac cells, muscles, intercellular communication, the circulatory system, the immune system, wound healing, the respiratory system, the visual system, hormone physiology, renal physiology, digestion, the visual system and hearing. New chapters on Calcium Dynamics, Neuroendocrine Cells and Regulation of Cell Function have been included. Reviews from first edition: Keener and Sneyd's Mathematical Physiology is the first comprehensive text of its kind that deals exclusively with the interplay between mathematics and physiology. Writing a book like this is an audacious act! -Society of Mathematical Biology Keener and Sneyd's is unique in that it attempts to present one of the most important subfields of biology and medicine, physiology, in terms of mathematical "language", rather than organizing materials around mathematical methodology. -SIAM review

Mathematical Physiology Health and Human Services Department

With over 43,000 species, spiders are the largest predacious arthropod group. They have developed key characteristics such as multi-purpose silk types, venoms consisting of hundreds of components, locomotion driven by muscles and hydraulic pressure, a highly evolved key-lock mechanism between the complex genital structures, and many more unique features. After 300 million years of evolutionary refinement, spiders are present in all land habitats and represent one of the most successful groups of terrestrial organisms. Ecophysiology combines functional and evolutionary aspects of morphology, physiology, biochemistry and molecular biology with ecology. Cutting-edge science in spiders focuses on the circulatory and respiratory system, locomotion and dispersal abilities, the immune system, endosymbionts and pathogens, chemical communication, gland secretions, venom components, silk structure, structure and perception of colours as well as nutritional requirements. Spiders are valuable indicator species in agroecosystems and for conservation biology. Modern transfer and application technologies research spiders and their products with respect to their value for biomimetics, material sciences, and the agrochemical and pharmaceutical industries.

Modern Biology, 1991 McGraw-Hill Medical

This book makes Moore's wisdom available to students in a lively, richly illustrated account of the history and workings of life. Employing rhetoric strategies including case histories, hypotheses and deductions, and chronological narrative, it provides both a cultural history of biology and an introduction to the procedures and values of science.

Respiratory Biology of Animals Pearson Higher Ed

Originally published in 1922, this fascinating works will appeal greatly to the Biology Student. Contents Include; I. The Problem. II. Conditions of Cellular Immortality. III. The Chances of Death. IV. The Causes of Death. V. Embryology and Human Mortality. VI. The Inheritance of Duration of Life in Man. VII. Experimental Studies on the Duration of Life. VIII. Natural Death, Public Health, and the Population Problem.....Many of the earliest books, particularly those dating back to 1900's and before, are now extremely scarce and increasingly expensive. We are republishing these classic works in affordable, high quality, modern editions, using the original text and artwork.

Animal Adaptation Reader's Digest

The book addresses the compelling demand for quantitative training in plant biology, including comparisons of the rate of processes, the size of structures and interactions among different processes, approached at different levels from molecules to the environment. Attention is paid to aspects of modern molecular biology and to modern biophysical treatments of classical transport and circulatory problems. This will allow the reader to become familiar with calculus as a tool to understand plant science. The book discusses specific problems covering six specific topics, and includes an additional section devoted to miscellaneous issues. It is also complemented by appendices describing units, conversion factors, formulae and data relevant to plant biology and to the relationship of plants with the environment.

Biology of Ticks Volume 1 Springer

Principles of Animal Physiology, Second Edition continues to set a new standard for animal physiology textbooks with its focus on animal diversity, its modern approach and clear foundation in molecular and cell biology, its concrete examples throughout, and its fully integrated coverage of the endocrine system. Carefully designed, full-color artwork guides students through complex systems and processes while in-text pedagogical tools help them learn and remember the material. The book includes the most up-to-date research on animal genetics and genomics, methods and models, and offers a diverse range of vertebrate and invertebrate examples, with a student-friendly writing style that is consistently clear and engaging. Christopher Moyes and Patricia Schulte present animal physiology in a current, balanced, and accessible way that emphasizes the integration of physiological systems, an overarching evolutionary theme, and thorough coverage of the cellular and molecular basis of animal physiology. Principles of Animal Physiology comes with a comprehensive supplements package for students and instructors that includes a new Media Manager CD-ROM, a new Print and Computerized Test Bank, and a powerful Companion Website. The InterActive Physiology® 10-System Suite CD-ROM and PhysioEx® V7.0 laboratory simulations can be packaged with the text at a discounted price.

Monitoring of Respiration and Circulation Springer Nature

This resource analyzes knowledge of the bronchial circulation - presenting the anatomy, physiology and clinical importance of this source of blood flow for the lungs.;Written by more than 30 experts from the United States and Europe, The Bronchial Circulation: explains the scientific considerations underlying clinical concepts of asthma, airway infections and hemoptysis, and modern approaches to their care; describes the methods used to measure bronchial blood flow in animals and humans; emphasizes the role of the bronchial circulation in picking up, distributing and eliminating drugs deposited on the mucosa of the airways; shows how mechanical and neurological factors influence total and regional blood flow; discusses the bronchial circulation's function in conditioning inspired air, heat and water exchange, and gas transfer; reveals how the bronchial blood supply to tumours has been employed in their treatment; and details the surgical techniques used to re-establish bronchial blood flow during lung transplantation.;This book is designed for pulmonologists, respiratory physiologists, lung transplant surgeons, and thoracic physicians. It serves as a reference for those interested in cardiopulmonary reactions, including general internists, cardiologists, radiologists, respiratory therapists, medical students, and nurses.

Mathematical Physiology Elsevier
Divided into two volumes, the book begins with a pedagogical presentation of some of the basic theory, with chapters on biochemical reactions, diffusion, excitability, wave propagation and cellular homeostasis. The second, more extensive part discusses particular physiological systems, with chapters on calcium dynamics, bursting oscillations and secretion, cardiac cells, muscles, intercellular communication, the circulatory system, the immune system, wound healing, the respiratory system, the visual system, hormone physiology, renal physiology, digestion, the visual system and hearing. New chapters on Calcium Dynamics, Neuroendocrine Cells and Regulation of Cell Function have been included. Reviews from first edition: Keener and Sneyd's Mathematical Physiology is the first comprehensive text of its kind that deals exclusively with the interplay between mathematics and physiology. Writing a book like this is an audacious act! -Society of Mathematical Biology Keener and Sneyd's is unique in that it attempts to present one of the most important subfields of biology and medicine, physiology, in terms of mathematical "language", rather than organizing materials around mathematical methodology. -SIAM review
Fundamental Concepts of Modern Biology Oxford University Press, USA
Biology for AP® courses covers the scope and sequence requirements of a typical two-semester Advanced Placement® biology course. The text provides comprehensive coverage of foundational research and core biology concepts through an evolutionary lens. Biology for AP® Courses was designed to meet and exceed the requirements of the College Board’s AP® Biology framework while allowing significant flexibility for instructors. Each section of the book includes an introduction based on the AP® curriculum and includes rich features that engage students in scientific practice and AP® test preparation; it also highlights careers and research opportunities in biological sciences.
Calculus in Plant Science Hodder Education
Biology of Ticks is the most comprehensive work on tick biology and tick-borne diseases. This second edition is a multi-authored work, featuring the research and analyses of renowned experts across the globe. Spanning two volumes, the book examines the systematics, biology, structure, ecological adaptations, evolution, genomics and the molecular processes that underpin the growth, development and survival of these important disease-transmitting parasites. Also discussed is the remarkable array of diseases transmitted (or caused) by ticks, as well as modern methods for their control. This book should serve as a modern reference for students, scientists, physicians, veterinarians and other specialists. Volume I covers the biology of the tick and features chapters on tick systematics, tick life cycles, external and internal anatomy, and others dedicated to specific organ systems, specifically, the tick integument, mouthparts and digestive system, salivary glands, waste removal, salivary glands, respiratory system, circulatory system and hemolymph, fat body, the nervous and sensory systems and reproductive systems. Volume II includes chapters on the ecology of non-nidicolous and nidicolous ticks, genetics and genomics (including the genome of the Lyme disease vector Ixodes scapularis) and immunity, including host immune responses to tick feeding and tick-host interactions, as well as the tick's innate immune system that prevents and/or controls microbial infections. Six chapters cover in depth the many diseases caused by the major tick-borne pathogens, including tick-borne protozoa, viruses, rickettsiae of all types, other types of bacteria (e.g., the Lyme disease agent) and diseases related to tick paralytic agents and toxins. The remaining chapters are devoted to tick control using vaccines, acaricides, repellents, biocontrol, and, finally, techniques for breeding ticks in order to develop tick colonies for scientific study.
Modern Biology Springer Science & Business Media
Primitive fishes are a relatively untapped resource in the scientific search for insights into the evolution of physiological systems in fishes and higher vertebrates. Volume 26 in the Fish Physiology series presents what is known about the physiology of these fish in comparison with the two fish groups that dominate today, the modern elasmobranchs and the teleosts. Chapters include reviews on what is known about cardiovascular, nervous and ventilatory systems, gas exchange, ion and nitrogenous waste regulation, muscles and locomotion, endocrine systems, and reproduction. Editors provide a thorough understanding of how these systems have evolved through piscine and vertebrate evolutionary history. Primitive Fishes includes ground-breaking information in the field, including highlighs of the most unusual characteristics amongst the various species, which might have allowed these fishes to persist virtually unchanged through evolutionary time. This volume is essential for all comparative physiologists, fish biologists, and paleontologists. Provides an analysis of the evolutionary significance of physiological adaptations in "ancient fishes" Offers insights on the evolution of higher vertebrates The only single source that presents an in-depth discussion of topics related to the physiology of ancient fishes