Chordates

HODGES HALLIE

Oxford Biology Readers: Bone, Q. The origin of Chordates Scientific e-Resources
Based on the integrated and holistic approach, the book systematically and comprehensively covers a general account of taxonomical, morphological, anatomical and physiological features of chordates. The text does not restrict discussion only to a representative genus in each class, but also provides knowledge of other important genera, and gives their general account and comparative features to help students understand animal diversity in the phylum. Besides the type study, the book also deals with the developmental and ecological aspects of the genera discussed. The book is intended to fulfill the curriculum need of B.Sc. Zoology, Life Sciences, Biological Sciences and Animal Sciences as well as M.Sc. Zoology students for their core course on chordata (chordates). Additionally, the students appearing for various competitive examinations and entrance test for postgraduate courses in the related fields will find this book useful. KEY FEATURES Incorporates the topics of modern research such as Fish as Biocontrol Agents, Mimicry in Birds, Nesting and Brooding Behaviour of Birds, and so on. Compares important genera of the class—morphological, anatomical and adaptive features. Well-illustrated coloured diagrams with meticulous details and labelling for clear understanding of anatomy. Important information nested in boxes, points to remember and classification in the form of flow charts add strength to each chapter. Provides a variety of pedagogically arranged interactive exercises for self assessment—from fill in the blanks, true/false statements, give reasons to MCQs. Also, the readers can check their answers online at www.phindia/pandey-mathur
Synoptic Lectures on the Comparative Anatomy of the Chordates CRC Press
Deals with the more general aspects of comparative anatomy of vertebrates.
Development, Homologies, and Evolution D C Heath & Company
BIOLOGY OF CHORDATESPHI Learning Pvt. Ltd.
Comparative Account of Physiology PHI Learning Pvt. Ltd.
Chordates comprise lampreys, hagfishes, jawed fishes, and tetrapods, plus a variety of more unfamiliar and crucially important non-vertebrate animal lineages, such as lancelets and sea squirts. This will be the first book to synthesize, summarize, and provide high-quality illustrations to show what is known of the configuration, development, homology, and evolution of the muscles of all major extant chordate groups. Muscles as different as those used to open the siphons of sea squirts and for human facial communication will be compared, and their evolutionary links will be explained. Another unique feature of the book is that it covers, illustrates, and provides detailed evolutionary tables for each and every muscle of the head, neck and of all paired and median appendages of extant vertebrates.
McGraw-Hill College
The origin and evolution of chordates is one of the most mysterious and interesting phenomena in evolutionary development science. Chordates are creatures characterized by possession of a notochord and pharyngeal gill openings. They comprise of three taxa: cephalochordates, urochordates (or tunicates), and vertebrates. Chordates belong to a supraphyletic gathering of deuterostomes, together with echinoderms and hemichordates, and are thought to have been derived from the regular ancestors of deuterostomes. Vertebrates evoloved by developing a body design with the greatest complexity among metazoans. Amid the 1980s, a new wave of molecular developmental science revealed that genes encoding interpretation factors and flag pathway molecules assume critical roles in the differentiation of embryonic cells, arrangement of organs and tissues, and morphogenesis for development of metazoan body designs. Presently, another wave of evolutionary developmental science studies revealed that metazoans from cnidarians to vertebrates, despite their diverse morphologies, utilize a very comparable set of interpretation factors and flag pathway molecules for body development: these genes are sometimes collectively called a genetic toolbox.

Laboratory Anatomy of the Elementary Chordates S. Chand Publishing
The second edition of the book is an elaborated and updated version of the title Invertebrate Zoology, which was published in the year 2012. In addition to the detailed description of representative genus of each of the major groups, the text provides latest developments in zoology and other related life science disciplines. This book, now with a different title in the second edition, gives an account of 36 phyla in comparison of 12 phyla explained in the first edition. NEW TO THE SECOND EDITION • Explains phyla such as Placozoa, Myxozoa, Nemertea, Gnathostomulida, Micrognathozoa, Cycliophora, Xenoturbellida, Acoelomorpha, Orthonectida, Rhombozoa, Gastrotricha, Kinorhyncha, Lorcifera, Priapulida, Nematoda, Nematomorpha, Acanthocephala, Entoprocta, Sipuncula, Echiura, Pentastomida, Onychophora, Tardigrada, Brachiopoda and Chaetognatha in the light of recent studies. • Discusses contemporary accounts on adaptive morphology, anatomy and physiology, including diversity in the mode of locomotion, nutrition, respiration and reproduction in major groups. • Emphasizes life cycle pattern of representative genus with well-illustrated diagrams. • Provides Short- and Long-answer questions at the end of each chapter along with references.
The Origin of Chordates MJP Publisher
FOR B.Sc & B.Sc.(Hons) CLASSES OF ALL INDIAN UNIVERSITIES AND ALSO AS PER UGC MODEL CURRICULUMN Contents: CONTENTS:Protochordates:Hemicholrdata 1.Urochordata Cephalochordata Vertebrates : Cyclostomata 3. Agnatha, Pisces Amphibia 4. Reptilia 5. Aves Mammalia 7 Comparative Anatomy:Integumentary System 8 Skeletal System Coelom and Digestive System 10 Respiratory System 11. Circulatory System Nervous System 13. Receptor Organs 14 Endocrine System 15 Urinogenital System 16 Embryology Some Comparative Charts of Protochordates 17 Some Comparative Charts of Vertebrate Animal Types 18 Index.
Elements of Chordate Anatomy. (A Condensation of "Anatomy of the Chordates."). CUP Archive
" Chordate Origins and Evolution: The Molecular Evolutionary Road to Vertebrates" focuses on echinoderms (starfish, sea urchins, and others), hemichordates (acorn worms, etc.), cephalochordates (lancelets), urochordates or tunicates (ascidians, larvaceans and others), and vertebrates. In general, evolution of these groups is discussed independently, on a larger scale: ambulacrarians (echi+hemi) and chordates (cephlo+uro+vert). Until now, discussion of these topics has been somewhat fragmented, and this work provides a unified presentation of the essential information. In the more than 150 years since Charles Darwin proposed the concept of the origin of species by means of natural selection, which has profoundly affected all fields of biology and medicine, the evolution of animals (metazoans) has been studied, discussed, and debated extensively. Following many decades of classical comparative morphology and embryology, the 1980s marked a turning point in studies of animal evolution, when molecular biological approaches, including molecular phylogeny (MP), molecular evolutionary developmental biology (evo-devo), and comparative genomics (CG), began to be employed. There are at least five key events in metazoan evolution, which include the origins of 1) diploblastic animals, such as cnidarians; 2) triploblastic animals or bilaterians; 3) protostomes and deuterostomes; 4) chordates, among deuterostomes; and 5) vertebrates, among chordates. The last two have received special attention in relation to evolution of human beings. During the past two decades, great advances have been made in this field, especially in regard to molecular and developmental mechanisms involved in the evolution of chordates. For example, the interpretation of phylogenetic relationships among deuterostomes has drastically changed. In addition, we have now obtained a large quantity of MP, evo-devo, and CG information on the origin and evolution of chordates. Covers the most significant advances in this field to give readers an understanding of the interesting biological issues involvedProvides a unified presentation of essential information regarding each phylum and an integrative understanding of molecular mechanisms involved in the origin and evolution of chordatesDiscusses the evolutionary scenario of chordates based on two major characteristic features of animals namely modes of feeding (energy sources) and reproduction as the two main forces driving animal evolution and benefiting dialogue for future studies of animal evolution"
Introduction to Chordates McGraw-Hill Companies
Chordates comprise lampreys, hagfishes, jawed fishes, and tetrapods, plus a variety of more unfamiliar and crucially important non-vertebrate animal lineages, such as lancelets and sea squirts. This will be the first book to synthesize, summarize, and provide high-quality illustrations to show what is known of the configuration, development, homology, and evolution of the muscles of all major extant chordate groups. Muscles as different as those used to open the siphons of sea squirts and for human facial communication will be compared, and their evolutionary links will be explained. Another unique feature of the book is that it covers, illustrates, and provides detailed evolutionary tables for each and every muscle of the head, neck and of all paired and median appendages of extant vertebrates.
Anatomy of the Chordates Academic Press
For Zoology Degree Level Students. A few chapters e.g.,microscope and chromatography have been included afresh. Besides these a few dissections, several museum specimens and permanenet slides have also been added at appropiate places
Embryogenesis and Phylogenesis CUP Archive
Examines the structure and workings of the digestive, endocrine, skeletal, nervous, circulatory, and reproductive systems in chordates
Comparative Germ Layer Formation in Chordates as Illustrated by the Mueller-Ward Models Nova Science Pub Incorporated
Product Dimensions: 21x15x3 cm. 10 edition. Contents: CONTENTS:1.Introduction 2.Cellular Basis of Development 3.DNA, RNA and Protein Synthesis 4.Male Gonads and Spermatogenesis 5. Female Gonadsand Oogenesis 6.Semination, Ovulation and Transportation of Gametes 7.Reproductive Cycles . Fertilization 8 Parthenogemsis 9 Cleava and Blastulation - Nucleus and Cytoplasm in Development 10 Fate Maps and Cell Lineage, Gastrulation , Neurulation, Morphgenesis and Growth 11 Embryogenesis of a Simple Ascidian - Embryogenesis of Amphioxus 12 Embryogenesis of Frog 13. Detailed Account of Organogenesis of Frog lEmbryogenesis of Chick.14 Early Embryogenesis of Eutherian Mammal 15 Rabbit Placenta and Placentation 16 Gradient Theory lEmbryonic Inductions and Competence 17 Differentiation Asexual Reproduction and Blastogenesis 18 Regeneration 19 Metamorphosis 20Teratogenesis 21 Birth Control 22 Impotency, Sterility, Artificial Insemination, Test-tube Baby and GIFT, Giossary 23 Selected Reading 24 Index.
Report on the Situation of the Jews in Germany PHI Learning Pvt. Ltd.
This work has been selected by scholars as being culturally important, and is part of the knowledge base of civilization as we know it. This work was reproduced from the original artifact, and remains as true to the original work as possible. Therefore, you will see the original copyright references, library stamps (as most of these works have been housed in our most important libraries around the world), and other notations in the work.This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work.As a reproduction of a historical artifact, this work may contain missing or blurred pages, poor pictures, errant marks, etc. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.
Chordate Origins and Evolution BIOLOGY OF CHORDATES
This 15-volume series is unrivaled in scope and thoroughness--it is the definitive work on invertebrate anatomy. Volume 15 provides specific and exhaustive coverage of hemichordata, chaetognatha, and the invertebrate chordates, examining the basic physiology of such functions as sensation and motor control, respiration, digestion, and reproduction.
Representative Chordates S. Chand Publishing
Introduction Fossils in the Study of Chordate Evolution Geological Time Origin of Chordates Evolution of Ostracoderms (Agnatha—Jawless Vertebrates)Evolution of Primitive Jawed Vertebrates Evolution of Fishes Evolution of Amphibians Evolution of Reptiles Dinosaurs Golden Age of Reptiles Evolution of Birds Ratitae Evolution of Mammals Monotremesmarsupials Human Evolution Consequences of chordate evolution Appendix Glossary References Index
The Chordates Springer
The vertebrate head is the most complex part of the animal body and its diversity in nature reflects a variety of life styles, feeding modes, and ecological adaptations. This book will take you on a journey to discover the origin and diversification of the head, which evolved from a seemingly headless chordate ancestor. Despite their structural diversity, heads develop in a highly conserved fashion in embryos. Major sensory organs like the eyes, ears, nose, and brain develop in close association with surrounding tissues such as bones, cartilages, muscles, nerves, and blood vessels. Ultimately, this integrated unit of tissues gives rise to the complex functionality of the musculoskeletal system as a result of sensory and neural feedback, most notably in the use of the vertebrate jaws, a major vertebrate innovation only lacking in hagfishes and lampreys. The cranium subsequently further diversified during the major transition from fishes living in an aquatic environment to tetrapods living mostly on land. In this book, experts will join forces to integrate, for the first time, state-of-the-art knowledge on the anatomy, development, function, diversity, and evolution of the head and jaws and their muscles within all major groups of extant vertebrates. Considerations about and comparisons with fossil taxa, including emblematic groups such as the dinosaurs, are also provided in this landmark book, which will be a leading reference for many years to come.
The Molecular Evolutionary Road to Vertebrates Sagwan Press
The evolution to multicellular organisms determined the appearance of more sophisticated and specialized systems for the different physiologies like integumentary, respiration, digestion, excretion, circulatory, reproduction, skeletal and the nervous system. In the line of chordate evolution, advent of tetrapods have triggered the events leading to only partial dependence on water for physiological activities. The inconstant environment in which animals lives largely determine and guides the way animal physiology evolves. This directs the anatomical and morphological changes in the organism that translates into varied and diverse physiological process. This book describes the transition of life from aquatic to terrestrial habitat that brings about changes in feeding habit and subsequent anatomical and morphological changes in the digestive tract. Similar transition also guides modifications in urino-genital system due to demands of removing ammonia/urea or uric acid as excretory waste. The author of this book further explores the evolution of tetrapods as one major event in the evolutionary history of chordates in addition to adaptive radiation. This has transformed the locomotion from Fins to Feet. Demands of terrestrial life also means metabolism and energy requirements has to be met for which circulatory system was modified to incorporate more chambers and double circulation for warm bloodedness and increased metabolism to meet the energy requirements of life on land. Subsequently, as explored in the book, different organ systems underwent modification in organization to work together the best physiological adaptations to sustain life on earth.
A Laboratory Manual of Comparative Anatomy of the Chordates CRC Press
Chordate Origins and Evolution: The Molecular Evolutionary Road to Vertebrates focuses on echinoderms (starfish, sea urchins, and others), hemichordates (acorn worms, etc.), cephalochordates (lancelets), urochordates or tunicates (ascidians, larvaceans and others), and vertebrates. In general, evolution of these groups is discussed independently, on a larger scale: ambulacrarians (echi+hemi) and chordates (cephlo+uro+vert). Until now, discussion of these topics has been somewhat fragmented, and this work provides a unified presentation of the essential information. In the more than 150 years since Charles Darwin proposed the concept of the origin of species by means of natural selection, which has profoundly affected all fields of biology and medicine, the evolution of animals (metazoans) has been studied, discussed, and debated extensively. Following many decades of classical comparative morphology and embryology, the 1980s marked a turning point in studies of animal evolution, when molecular biological approaches, including molecular phylogeny (MP), molecular evolutionary developmental biology (evo-devo), and comparative genomics (CG), began to be employed. There are at least five key events in metazoan evolution, which include the origins of 1) diploblastic animals, such as cnidarians; 2) triploblastic animals or bilaterians; 3) protostomes and deuterostomes; 4) chordates, among deuterostomes; and 5) vertebrates, among chordates. The last two have received special attention in relation to evolution of human beings. During the past two decades, great advances have been made in this field, especially in regard to molecular and developmental mechanisms involved in the evolution of chordates. For example, the interpretation of phylogenetic relationships among deuterostomes has drastically changed. In addition, we have now obtained a large quantity of MP, evo-devo, and CG information on the origin and evolution of chordates. Covers the most significant advances in this field to give readers an understanding of the interesting biological issues involved Provides a unified presentation of essential information regarding each phylum and an integrative understanding of molecular mechanisms involved in the origin and evolution of chordates Discusses the evolutionary scenario of chordates based on two major characteristic features of animals—namely modes of feeding (energy sources) and reproduction—as the two main forces driving animal evolution and benefiting dialogue for future studies of animal evolution
An Introduction to Comparative Anatomy Academic Press
Anatomical, Functional, and Developmental Diversity in Chordate Evolution S. Chand

Publishing