READ FUNDAMENTALS OF COMPARATIVE EMBRYOLOGY OF THE VERTEBRATES

Fundamentals of Comparative Embryology of the Vertebrates

This comprehensive text is an essential resource for students and researchers interested in the development of vertebrate embryos. Starting with the basics of fertilization and gastrulation, the book covers morphogenesis, organogenesis, and the formation of body systems. An emphasis is placed on comparative embryology, highlighting similarities and differences between species. The book also includes numerous illustrations and diagrams to aid in understanding. 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 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. 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.

Fundamentals of Comparative Embryology of the Vertebrates

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.

Atlas of Comparative Embryology

Comparative Vertebrate Reproduction is the only comprehensive textbook covering major topics in the reproductive biology of vertebrates, from sexuality and gametogenesis to reproductive ecology and life history tactics. The work draws heavily on recent reviews and papers while placing topics in a historical context and conceptual framework. In addition, the author provides detailed comparative surveys of each of the major topics discussed. Comparative Vertebrate Reproduction has been written as a textbook for upper-level undergraduate and graduate-level students in biology, zoology, physiology, animal science, and veterinary medicine. The work also serves as an excellent reference for researchers in medical and veterinary schools working in reproductive medicine.

Comparative Embryology of the Vertebrates

Excerpt from Comparative Anatomy of Vertebrates In order that this may be realized, embryology is made the basis, the various structures being traced from the undi?erentiated egg into the adult condition. This renders it easy to compare the embryonic stages of the higher vertebrates with the adults of the lower and to recognize the resemblances and di?erences between organs in the separate classes. There has been no attempt to describe the strue ture of any species in detail, but rather to outline the general mor phology of all vertebrates. To aid in the discrimination of the broader features and the more minor details, two sizes of type have been used, the larger for matter to be mastered by the student, the smaller for details and modifications

in the separate classes to which reference may need to be made. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Introduction To Vertebrate Embryology

The purpose of this book, now in its third edition, is to introduce the morphology of vertebrates in a context that emphasizes a comparison of structire and of the function of structural units. The comparative method involves the analysis of the history of structure in both developmental and evolutionary frameworks. The nature of adaptation is the key to this analysis. Adaptation of a species to its environment, as revealed by its structure, function, and reproductive success, is the product of mutation and natural selection–the process of evolution. The evolution of structure and function, then, is the theme of this book which presents, system by system, the evolution of structure and function of vertebrates. Each chapter presents the major evolutionary trends of an organ system, with instructions for laboratory exploration of these trends included so the student can integrate concept with example.

Elements of Comparative Vertebrate Embryology

One of the major questions in the evolution of animals is the transition from unicellular to multicellular organization, which resulted in the emergence of Metazoa through a hypothetical Urmetazoa. The Comparative Embryology of Sponges contains abundant original and literary data on comparative embryology and morphology of the Porifera (Sponges), a group of 'lower Metazoa'. On the basis of this material, original typization of the development of Sponges is given and the problems concerning origin and evolution of Porifera and their ontogenesis are discussed. A morphogenetic interpretation of the body plan development during embryogenesis, metamorphosis and asexual reproduction in Sponges is proposed. Special attention is given to the analysis of characteristic features of the ontogenesis in Porifera. The book pursues three primary goals: 1) generalization of all existing information on individual development of sponges, its classification and a statement according to taxonomical structure of Porifera; 2) revealing of heterogeneity of morphogenesis and peculiarities of ontogeneses in various clades of Porifera, and also their correlations with the organization, both adult sponges, and their larvae; 3) revealing homology of morphogeneses in both Porifera and Eumetazoa, testifying to the general evolutionary roots of multicellular animals, and peculiar features of sponges' morphogeneses and ontogenesis. This book will be of interest to embryologists, zoologists, morphologists and researchers in evolutionary biology.

Introduction to Vertebrate Embryology

Excerpt from Comparative Anatomy of Vertebrates Vertebrate anatomy is everywhere taught by the laboratory method. The student studies and dissects representatives of several classes, thus gaining an autoptic knowledge of the various organs and their positions in these forms. These facts do not constitute a science until they are properly compared and correlated with each other and with the conditions in other animals. It is the purpose of the author to present a volume of moderate size which may serve as a framework around which these facts can be grouped so that their bearings may be readily recognized and a broad conception of vertebrate structure may be obtained. In order that this may be realized, embryology is made the basis, the various structures being traced from the undifferentiated egg into the adult condition. This renders it easy to compare the embryonic stages of the higher vertebrates with the adults of the lower and to recognize the resemblances and differences between organs in the separate classes. There has been no attempt to describe the structure of any species in detail, but rather to outline the general morphology of all vertebrates. To aid in the discrimination of the broader features and the more minor details, two sizes of type

have been used, the larger for matter to be mastered by the student, the smaller for details and modifications in the separate classes to which reference may need to be made. Considerable space has been given to the skull, as there is no feature of vertebrate anatomy which lends itself more readily to comparative study of the greatest value to the beginning student, while the same specimens can be used in the laboratory year after year. The skull also has a special interest since nowhere else is there the same chance of tracing modifications in all groups since the first appearance of vertebrates on the earth. To aid in this, extinct as well as recent species have been included. It was the desire of the author to adopt the nomenclature of the German Anatomical Society ('BNA'), but this was often found impracticable. The BNA was based solely upon human anatomy and it fails utterly in many respects when the attempt is made to transfer its terms to other groups. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Vertebrate Embryology

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Vertebrate Embryology

This classic textbook provides an accessible introduction to the science of embryology, with a focus on the development of vertebrate animals. Based on a series of lectures delivered by the author at Johns Hopkins University, the book covers all the major stages of embryonic development, from fertilization to birth. With its clear explanations and detailed illustrations, An Introduction to Vertebrate Embryology is an invaluable resource for students and researchers alike. 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 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. 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.

Comparative Vertebrate Reproduction

Excerpt from The Early Embryology of the Chick The fact that most courses in vertebrate embryology deal to a greater or lesser extent with the chick seems to warrant the treatment of its development in a book designed primarily for the beginning student. To a student beginning the study of embryology the very abundance of information available in the literature of the subject is confusing and discouraging. He is unable to cull the essentials and fit them together in their proper relationships and is likely to become hopelessly lost

in a maze of details. This book was written in an effort to set forth for him in brief and simple form the early embryology of the chick. It does not purport to treat the subject from the comparative view point, nor to be a reference work. If it helps the student to grasp the structure of the embryos, and the sequence and significance of the processes he encounters in his work on the chick, and thereby conserves the time of the instructor for interpretation of the broader principles of embryology it will have served the purpose for which it was written. In preparing the text, details have been largely omitted and controverted points avoided for the sake of clarity in outlining fundamental processes. While I would gladly have avoided the matters of cleavage and germ layer formation in birds, a brief description of them seemed necessary. Without some interpretation of the initial phases of development, the student has no logical basis for his study of the already considerably developed embryos with which his laboratory work begins. The treatment which it is desirable to accord to gametogenesis and maturation as processes leading toward fertilization would vary so greatly in extent and view point in different courses that it seemed inadvisable to attempt any general discussion of these phenomena. The account of development has not been carried beyond the first four days of incubation. In this period the body of the embryo is laid down and the organ systems are established. Courses in general embryology rarely carry work on the chick beyond this phase of development. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Vertebrate Embryology

Atlas of Comparative Vertebrate Histology looks at the histology of a wide range of vertebrates, representative of all the major classes and families, with examples ranging from amphioxus to primates. The authors focus their microscope on commonly seen vertebrates as well as ‘non-standard’ species, such as lamprey, hagfish, dogfish, skate, rock bass, cod, river catfish, toad, amphiuma, leopard and bull frog, garter and brown snake, Coturnix quail and cowbird. The study of comparative histology in the vertebrates helps students and researchers alike understand how various groups have addressed similar problems, opening doors to interesting research possibilities. Not all vertebrates follow the mammalian model of tissue and organ structure. When dealing with unique species, we see some structures taken beyond their ‘normal’ function. Comparative histology allows us to understand the structural responses underlying the physiology unique to each vertebrate group. Presents the histology of a wide range of vertebrates, representative of all the major classes and families, with examples ranging from amphioxus to primates Includes an image gallery with over 500 flat images and 50+ virtual microscopy slides Contains electronic content features cross linking between text, tables and the image gallery

Vertebrate Zoology

The Vertebrata is one of the most speciose groups of animals, comprising more than 58,000 living species. This book provides a detailed account on the comparative anatomy, development, homologies and evolution of the head, neck, pectoral and forelimb muscles of vertebrates. It includes hundreds of illustrations, as well as numerous tables showing the homologies between the muscles of all the major extant vertebrate taxa, including lampreys, elasmobranchs, hagfish, coelacanths, dipnoans, actinistians, teleosts, halecomorphs, ginglymodians, chondrosteans, caecilians, anurans, urodeles, turtles, lepidosaurs, crocodylians, birds, and mammals such as monotremes, rodents, tree-shrews, flying lemurs and primates, including modern humans. It also provides a list of more than a thousand synonyms that have been used by other authors to designate these muscles in the literature. Importantly, it also reviews data obtained in the fields of evolutionary developmental biology, molecular biology and embryology, and explains how this data helps to understand the evolution and homologies of vertebrate muscles. The book will useful to students, teachers, and researchers working in fields such as functional morphology, ecomorphology, evolutionary developmental

biology, zoology, molecular biology, evolution, and phylogeny. As the book includes crucial information about the anatomy, development, homologies, evolution and muscular abnormalities of our own species, Homo sapiens, it will also be helpful to physicians and medical students.

Comparative Anatomy of Vertebrates (Classic Reprint)

This is an authoritative and accessible introduction to the study of vertebrate embryology. The book is structured around the development of three model organisms: the frog, chick, and mammal. Through a detailed analysis of the embryonic development of these animals, the author provides readers with a comprehensive understanding of the fundamental principles of embryology. The book is aimed at undergraduate students in the biological sciences, and will also be of interest to researchers and professionals in the field. 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 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. 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.

Hyman's Comparative Vertebrate Anatomy

Excerpt from Vertebrate Embryology: A d104-Book for Students and Practitioners This latter practice is a most unfortunate one, and has been the cause of much confusion. The student is led to suppose that our knowledge is more complete than is really the case, while at the same time he finds the greatest difficulty in obtain ing definite information on any particular point in which he is interested. Moreover, the implication that the details of develop ment are identical in members of the same or of allied groups is directly opposed to the results of recent investigations, which are showing more and more clearly that marked differences. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Vertebrate zoology : an introduction to the comparative anatomy, embryology and evolution of chordate animals

Excerpt from Text-Book of the Embryology of Man and Mammals The rapidly increasing recognition of the importance of Embryology in all morphological studies makes it desirable that the most valuable text-books upon tho subject, in whatever language, be made available for those who are beginning its study. Although tho English-reading student already has at command a number of text-books upon this subject, it is evident to any one familiar with Hertwig's Lehrbuch der Enlwicklungegeschichlt des Menschen und der Wirbeltkiere that this work covers the field of Vertebrate Embryology in a more complete and satisfactory way than any book heretofore published in English. Two important objects to be accomplished in a text-book are: first, a clear and methodical exposition of the well-established facts of the science; and, secondly, such a presentation of unsettled questions as shall stimulate tho reader to further inquiry and research. I believe it is far too common for the second of these aims to be overlooked. Tho present work fulfills both requirements in an eminent degree, and in its historical surveys exhibits an exceptional fairness of treatment, notwithstanding tho author has been one of the foremost contestants in several of the fields reviewed. Tho summaries which follow the discussions of the several topics serve a useful purpose in directing attention to the more important conclusions drawn from each subject. I have aimed to give a clear and accurate reproduction of the author's

ideas; while I have endeavored-not always successfully- to avoid awkward renderings and German idioms, I have preferred to err on tho side of a too literal rather than a too liberal translation. There are a few points that demand a brief explanation. The German word Anlage has heretofore been variously rendered into English by rudiment, origin, beginning, basis, foundation, etc., while some writers, recognising tho inadequacy of any of these words to express the idea, have incorporated tho German word itself in their English. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Vertebrate Embryology

Vertebrate Fetal Membranes