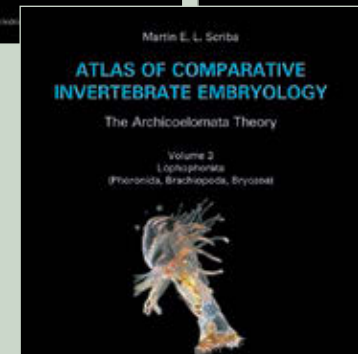


MARTIN E. L. SCRIBA

ATLAS OF COMPARATIVE INVERTEBRATE EMBRYOLOGY

The Archicoelomata Theory

Volumes 1-5



Verlag Dr. Friedrich Pfeil · München

Dr. Martin E. L. Scriba

Professor of Zoology

Born 1931

Teaching zoology, embryology and evolution in years

1968-1971
Philipps-University of Marburg, Germany

1971-1996
University of Aachen, Germany (RWTH)



How should I use my time after retirement?

To realize my dream of writing this atlas of comparative Embryology

Why an atlas?

People prefer to visualize ideas so on an atlas is an ideal method of presenting different processes of embryological development.

Why compare embryological development in different taxonomic groups such as families, orders and classes?

Because closely related organism pass through simple and highly determined embryonic development. At the end of some chapters the relevant results of research in development biology using gene sequence data, gene expression and protein chemistry are discussed.

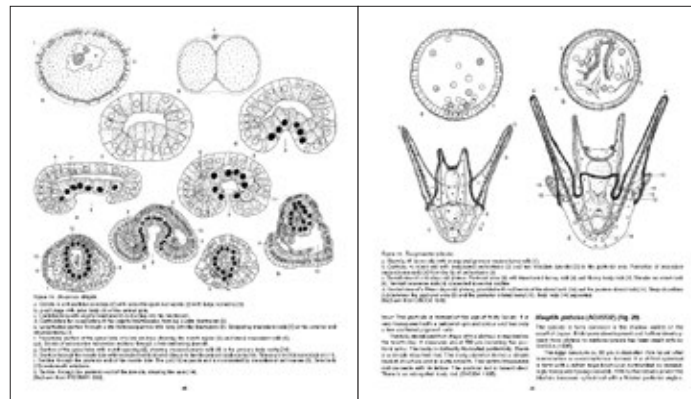
What is the scope of the atlas?

The atlas presents an extensive illustrated compilation of embryonic development in animal phyla, it refers to publications about embryology from the 1860's until the present day.

It is concerned with descriptive embryology, looking at the composition of embryos and larvae and their morphological changes during development.

What is the aim of the atlas?

Comparative embryology allows the construction of phylogenetic trees. The atlas supports the Gastraea-theory of Haeckel (1874) and the Archicoelomata-theory of Masterman (1898).



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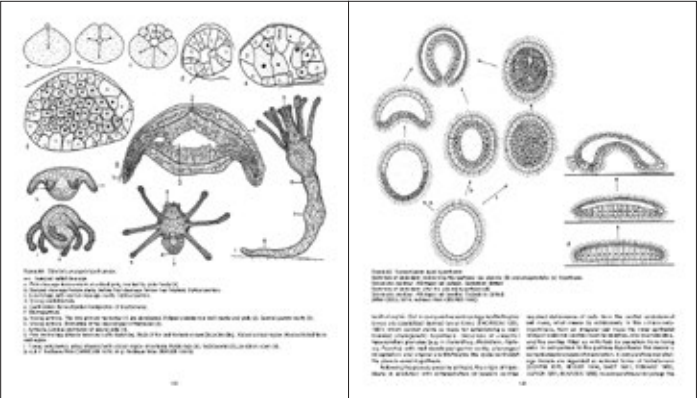
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This Atlas of Comparative Embryology has two aims. Firstly, it describes embryonic development or ontogeny of several species within a phylum. Secondly, by comparing the different ontogenies this collection supplies a basis for phylogenetic reflections about phylum-level relationships in lower Metazoa. Diversity of ontogenies, embryos and larvae can be an important source for well-founded phylogenetic theories. Like comparative morphology and anatomy, comparative embryology plays a central role for the analysis of evolution.

The atlas presents a wealth of embryonic and larval developmental processes to emphasize the great variety of ontogenies in the animal kingdom. Like the adult organisms, larvae are also of an enormous diversity owing to the varied requirements of their environment. Within a phylum, embryonic and larval development may be uniform to a large degree, but also deviations are known. In comparing the different ontogenies of an animal phylum, embryologists try to find out the common ancestor and to reconstruct the phylogeny of the group.

Establishing a phylogenetic system of the animal kingdom on the basis of comparative embryology requires a sound theory to integrate far reaching steps in evolution of the animal phyla. Two theories, which are founded in simple events that equally occur in many embryonic developmental courses of different phyla, are the Gastraea-theory of Haeckel (1874) and the Archicoelomata-theory of Masterman (1898). In this atlas, the phylogenetic system proposed by comparison of the different ontogenies is based on these two theories.

The atlas offers a broad view about the diversity of embryos and larvae and may be useful in looking for a suitable species of special interest. Naturally, an exhaustive description of all ontogenies of animals is impossible. Ontogenies of well known species and detailed research work of their embryos have been chosen. Besides this, embryological research work of some Metazoan phyla is incomplete. Our knowledge of the ontogeny of animals is mainly founded on the classical investigations between 1860 and 1960. In this atlas, in the chapters concerning phylogenetic interrelationships of phyla, results of studies on morphological or biochemical composition of structures of the adults and of modern gene sequence data may be included into discussion.



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MARTIN E. L. SCRIBA

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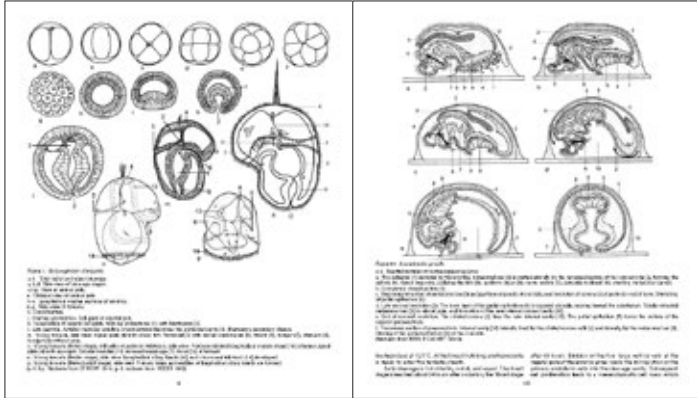
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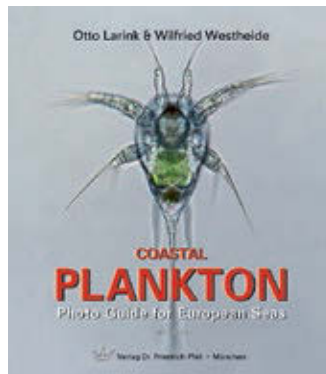
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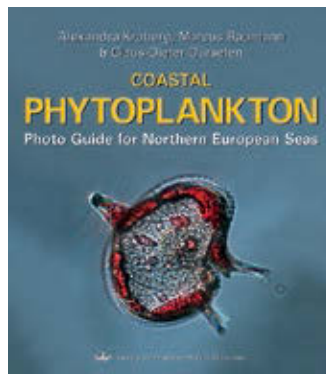
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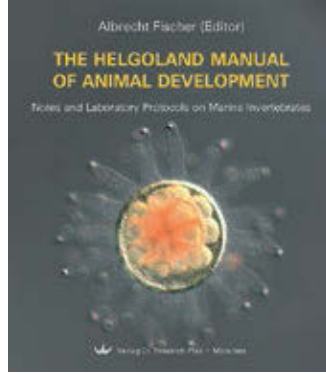
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