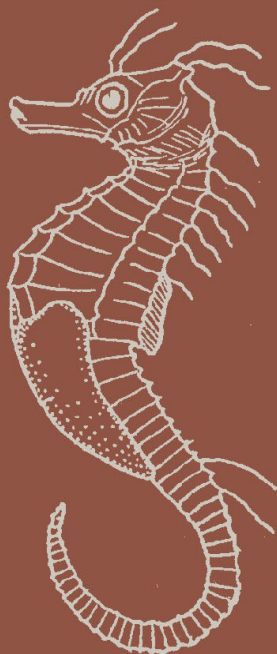


# Comparative Anatomy *of the* **VERTEBRATES**

**THEODORE H. EATON, Jr.**



*Comparative Anatomy*  
*of the* **VERTEBRATES**

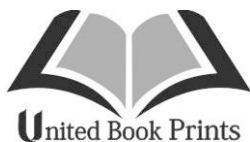
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## PREFACE

Students should come to Comparative Anatomy prepared by one or more substantial courses in zoology, and should be in their upper college years. They can then use the course effectively to equip them for medical school, for advanced study in zoology, or for teaching. Yet Comparative Anatomy is much more than a professional training course. Its values and meanings are as rich as those of all biology. It is basic to an understanding of man's origin and relationships; it is at the heart of our knowledge of evolution. By acquainting us with the changing structure of a great host of animals, the study of Comparative Anatomy gives a framework in which we can properly place our ideas of function and of embryonic development.

In one course or one book it is possible only to introduce the student to Comparative Anatomy. But that introduction ought to contain elements of all the wider meanings of the subject, and should take recent knowledge into account particularly. Therefore I have included a chapter on embryology, and presented some of the important ideas of those who work with prehistoric animals, so far as these clarify our picture of the relationships of the vertebrate classes. It is necessary always to be aware of the "time dimension," knowing that today's life is an outgrowth of different life in past ages, and that we can trace quite accurately the steps by which man and other modern forms have become what they are.

My conviction that it helps, in studying anatomy, to know the names, appearance, and ways of life of the animals concerned has led to a fairly comprehensive first chapter on the kinds of chordates, illustrated as fully as space would permit. Since structure without function has little meaning, I try to lay emphasis on the action of organs, tissues, and mechanisms of the body. A panoramic view in the last chapter may help in coordinating parts of the whole picture.

In order that bulk may not discourage full use of this text during a



semester or a quarter, I have written concisely, but hope that it may be found full and clear enough to satisfy the more energetic student as well as the critical instructor.

It has been necessary to use, by permission, many illustrations from different sources, and I am grateful for them, but the majority are either new or redrawn by the author. The bibliography at the end lists books and papers which have been particularly useful to me, including those referred to in the text, but it is far from being either complete or well balanced. The sources cited there will lead the student to other work, however, in which he may be interested.

Here I should like to acknowledge my great obligation to Professor Charles L. Camp, of the University of California, under whom I received my first training in this field, and who gave me a vigorous enthusiasm for it; and to Professor Alfred S. Römer, of Harvard, with whom I have had most fruitful opportunities to work. Both men have read the manuscript and have given me the benefit of much critical comment. To Professor William K. Gregory, of the American Museum of Natural History, I owe my thanks for valuable suggestions and encouragement on a number of occasions. Finally I wish to inscribe this book to my mother and father, whose manifold faith and help have made the task easier.

THEODORE H. EATON, JR.

*April, 1951*