

Preface to Volume 5

A PREVIOUS volume in this series (Palaeontology) reviewed the origin and early history of amphibians as evidenced by their fossilized bones. In the present book, the scope is extended forward in geological time to the present by summarizing the osteology of extant forms. These two volumes are bridged by the first chapter in the present book, in which Emilia Vorobyeva compares the dermal skulls of Recent amphibians with those of their Palaeozoic ancestors.

Then follow chapters treating osteology on various scales, first at the cellular level by Brian Hall, and then at the tissue level by J. Castanet, H. Francillon-Viellot, A. de Ricqlès and L. Zylberberg. The remainder of the chapters deal with the morphology of whole bones of the three Orders of modern amphibians. Two chapters treat salamanders. Christopher S. Rose reviews the osteology of salamander skulls, following which Neil H. Shubin and David Wake examine morphological variation in the limb skeleton of salamanders. The osteology of caecilians is then covered by Marvalee Wake. Finally, there is a treatment of the skull of anurans by Zbyněk Roček. Roček's chapter also delves into the usage and synonymy of the names of bones and bone-parts. He clarifies much previous confusion and establishes a standard terminology.

The approach taken varies among authors, all chapters being primarily morphological, but some stressing functional aspects and others presenting phylogenetic interpretations. Many of the chapters have a strong developmental emphasis. In fact, most chapters either deal with skeletal development at length, or at least have some sections treating developmental features.

There is not complete unanimity of viewpoint among all authors. Differences of opinion stimulate further research and are a sign of a healthy and growing field of endeavour. Consequently, rather than attempting to reconcile divergent opinions, the editorial policy was to provide a forum where controversial topics could be aired by experts and contrasting views presented.

There is one obvious topical omission that detracts from the completeness of the volume. Both the skull and the appendicular skeleton of salamanders receive treatment, but the limb bones of anurans do not have a chapter dedicated to them. It was intended to have a chapter that covered this aspect, but repeated delays in its completion necessitated a compromise between a comprehensive coverage and the need to present the other material, already through the proof stage by a number of months, in a timely fashion. This deficiency will in part be compensated by including in future volumes a chapter covering the relationship of skeletal morphology, including the appendicular skeleton, to the systematics of amphibians (Taxonomy) and a chapter on the development of the skeleton in direct-developing frogs (Development).

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