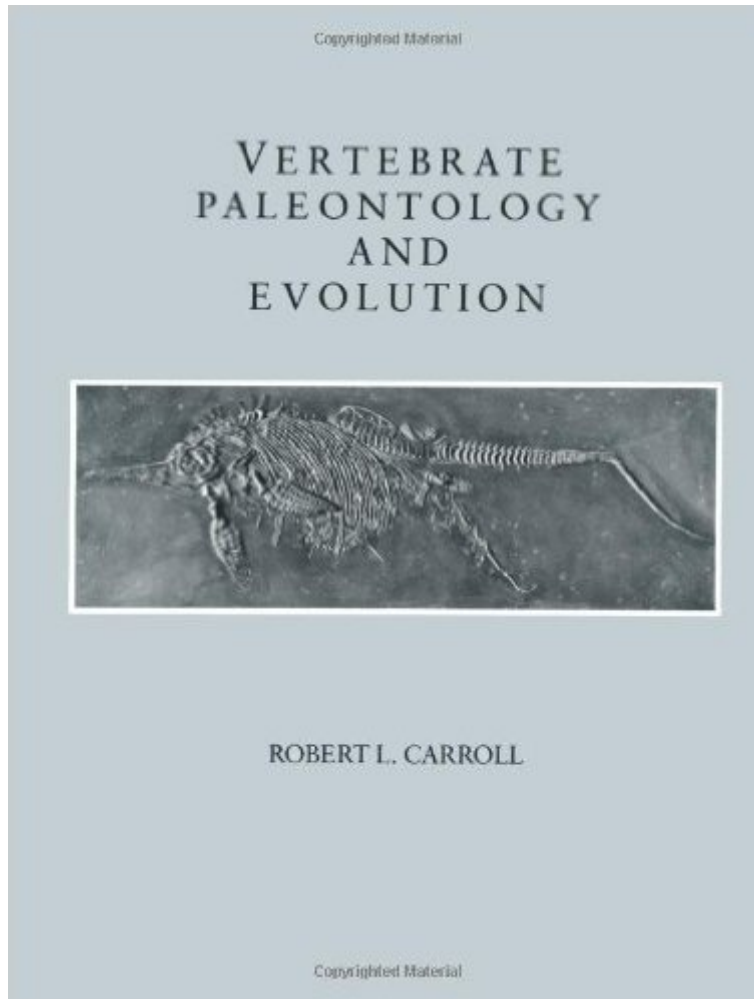


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# Vertebrate Paleontology And Evolution



## Synopsis

"Carroll has to his credit an immense amount of useful labour in writing the book and will probably corner the market for a vertebrate paleontology text for the rest of this century." Nature

## Book Information

Hardcover: 698 pages

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Average Customer Review: 4.9 out of 5 stars [See all reviews](#) (10 customer reviews)

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## Customer Reviews

...the only easily available work that goes to any depth on this intensely interesting subject. A large book of medium thickness with an average of about two drawings per page, including familial relationship diagrams. Since the late Paleozoic, there have been two significant branches of terrestrial vertebrates: the diapsids (crocs, dinosaurs, birds) and synapsids (pelycosaur, therapsids, mammals). Sharing a common ancestry and evolving at times in parallel, nevertheless distinctive features appear early that, though not of immediately apparent significance, in fact consign the lines to their separate fates. The pelycosaur Dimetrodon, the familiar lizard-like reptile with a sail on its back that is often reproduced as a toy, and which I have always associated with the dinosaurs, is in fact a member of the synapsid line. The book points out how the process on the mandible that reaches up toward the temporal lobe is the beginning of a shift away from the ancestral quadrate-angular jaw articulation maintained by the diapsids through the birds. With the additional points of leverage provided, mammals were destined to become better chewers, able to move their jaws sideways in addition to up and down. The angular bone and one other bone in the mandible, incidentally, become modified to help pick up soundwaves, and eventually migrate to become one of the three bones in the middle ear. (Birds only have one bone in their middle ear, though interestingly, their hearing appears to be just as acute.) Mammals continued to refine their

chewing mechanism, introducing improvements to their teeth. Instead of the saw of teeth possessed by dinosaurs and early reptiles, the mammals developed closely occluding teeth that allowed them to grind food more efficiently.

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