

# Fossil News

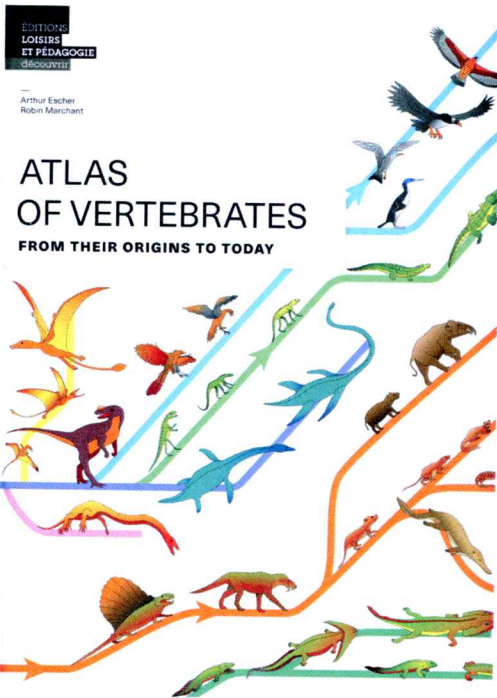
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# Book Review

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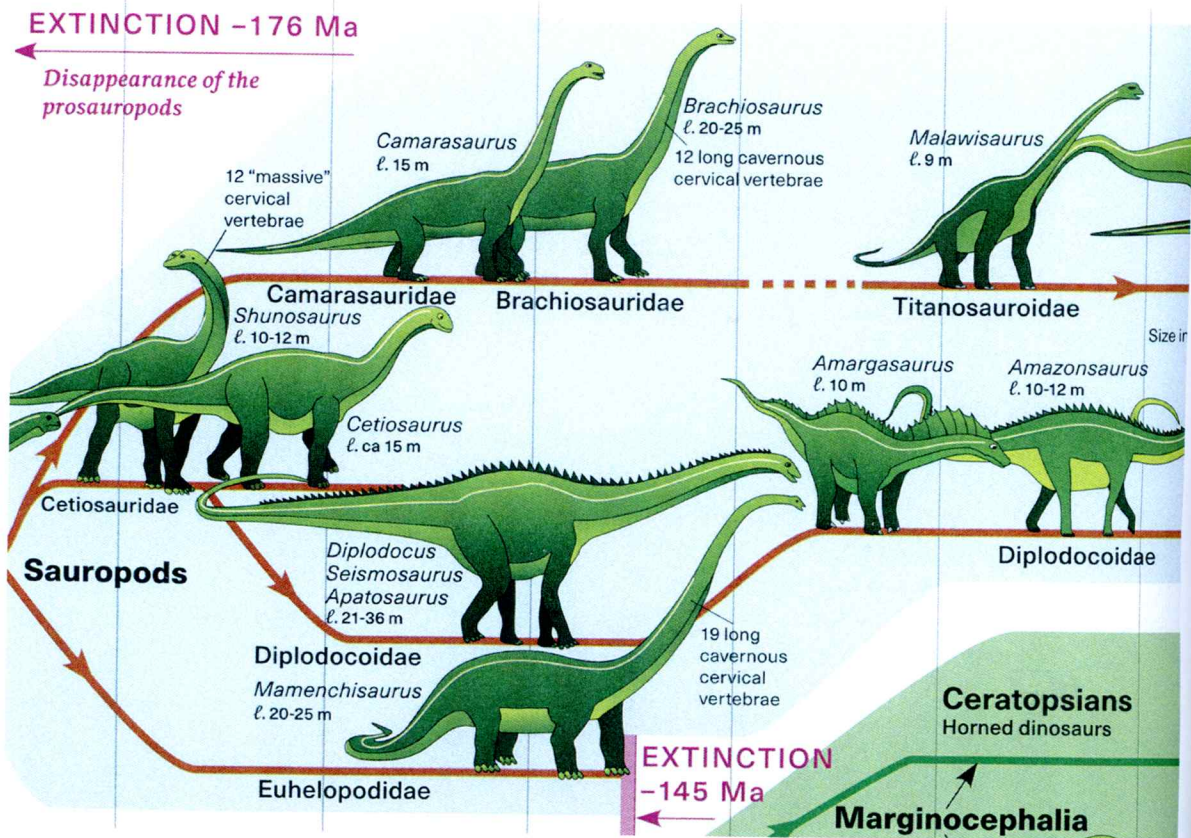


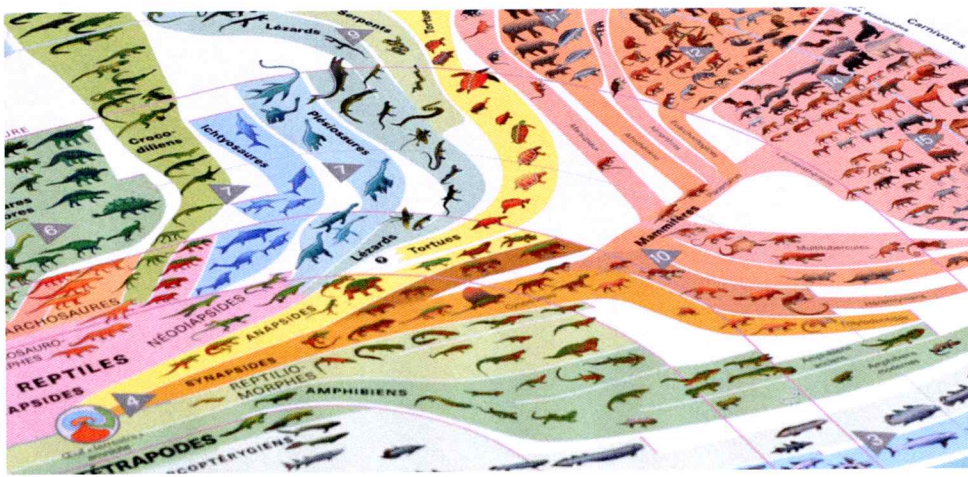
*Atlas of Vertebrates from Their Origins to Today* by Arthur Escher and Robin Marchant. Le Mont-sur-Lausanne, Switzerland: Éditions Loisirs et Pédagogie, 2019, 40 pages. Available in French and English editions.

During the last half century, the bar for prehistoric art has been set high. This is particularly true of dinosaur art, now being created by a vast number of talented artists from all over the globe. For a prehistoric art book to stand out from “the pack,” then, is unusual. This book stands out. It does so because it is unique among prehistoric art books as a collection of evolutionary trees (phylogenetic trees or phylogenies), densely illustrated by gifted artist Arthur Escher, who, incidentally, is the son of M. C. Escher (1898-1971), famed for his mathematically inspired graphic artwork. Furthermore, as a teaching tool, this book has few equals.

Spread: The evolutionary tree of the sauropods. Facing page, top: a detail of the fold-out poster that combines the family trees of all the vertebrates.

The book’s front endpapers begin with a “generalized tree of life” and a key to understanding the evolutionary trees that follow. Those trees run horizontally across this large-format volume (12.25” wide and 12.5” tall). There are a total of fifteen evolutionary trees: (1) fish and their emergence from water; (2) sharks, rays and chimeras; (3) diversification of bony fish; (4) the first reptiles; (5) the flight of reptiles; (6) terrestrial dinosaurs; (7) the return of the reptiles to water; (8) the flight of feathered dinosaurs; (9)





the diversification of reptiles; (10) early mammals; (11) elephants and sea cows; (12) primates; (13) the tribe of bipedal primates; (14) carnivores; and (15) ungulates and cetaceans. The relevant portion of the geological time scale is on the horizontal axis beneath each evolutionary tree. The last two-page layout illustrates the major phases of extinction from the end of the Ediacaran (~ 541 million years ago) to the ongoing extinction of the Modern World.

Each evolutionary tree is illustrated with dozens of color drawings of key animals along the branches, identified by genus name with a metric estimate of total body length. All generic names are indexed at the back of the book. A brief explanatory text and instructive diagrams

several extinct clades). All the trees come together in a poster in a sleeve at the back of the book which, when unfolded, measures about two feet by three feet.

The trees in the book, of course, are not all above scientific discussion—there is ongoing debate about many aspects of the evolutionary history of the vertebrates. But these are up-to-date trees that mostly capture a consensus in good, current scientific thinking on the phylogeny of a vertebrate group.

Beyond its unique content, this well-illustrated, easy-to-understand volume is a remarkable teaching tool. Darwin's *On the Origin of Species* contained only one illustration, a generalized evolutionary tree.

Such trees have long been the graphic by which paleontologists have depicted evolutionary history—the unfolding diversification of life over geologic time—and show, to borrow again from Darwin, “descent with modification,” i.e., the evolutionary process.

*Atlas of Vertebrates* is for anyone with a keen interest in vertebrate evolution, and there's no better gift for younger people, say middle-school aged or older, who want to grasp the main points of this long and fascinating process.

