

The Origin of Errors about Birds

by Gregory S. Paul

Dr. Alan Fedducia's new book, *The Origin and Evolution of Birds*, has caused shockwaves through the dinosaur community with its sweeping rejection of the Birds Are Dinosaur Descendants theory. The problem is the sweep of this rejection ignores contrary data and, as a result, is fatally flawed.

Feduccia asserts that the skull of *Archaeopteryx* is very avian, but he bases this on reconstructions done a decade ago and ignores recent work [P. Wellnhofer, A. Elzanowski, L. Witmer, and the present author] based on the newest skull which shows it to be much more theropodian than avian. He also ignores Phil Currie's paper noting that the occipital wing of the braincase is very similar to dromaeosaurs and insists (based on old blurry CT scans) that *Archaeopteryx* had a double-headed quadrate, after the new skull has proven that this is absolutely false!

Feduccia says that theropod shoulder girdles are not birdlike, but the fully articulated skeleton of the new troodont *Sinornithoides* shows that the coracoids were large, their outer surfaces faced forwards, were angled sharply on the scapula blade, and articulated with long anterior grooves of a large sternal plate just like birds.

Feduccia dismisses the similarity of the pubes of *Archaeopteryx* and theropods, but in fact birds and dromaeosaurs share bone features not found in any other animals of any era.

Feduccia said that *Postosuchus* is close to the origin of carnosaurs (it is in fact a near-crocodylian) and that the tiny Triassic reptile *Megalancosaurus* is an "avimorph" (using a head-on photo that looks remotely avian, and not showing the rest of the skeleton which is decidedly non-avian).

Feduccia denies that feathers are related to endothermy [hot-bloodedness] but cannot cite a single living insulated [cold-blooded] ectotherm. He tries to link brain size to metabolism, but endothermic tuna have small simple brains while some ectothermic fish and sharks have really big complex brains. Feduccia says that crocodiles prove that more efficient cold-blooded animals surpass warm-blooded ones in the tropics (ignoring elephants, rhinos, hippos, and giraffes).

Feduccia agrees with most scientists that birds evolved flight by gliding down from trees, but insists that small theropods were not good tree climbers. While he dismisses those who support dinosaurian ancestry for birds as "arm wavers", he cannot cite a single characteristic found in birds and non-dinosaurian archosaurs that is not also found in theropods.

Feduccia, like many paleornithologists, insists that dinosaur paleontologists really don't know much about birds. He has shown, however, that he really doesn't know as much as he should about non-avian archosaurs. 