

Feduccia, A. 1976: A Model for the Evolution of Perching Birds. *Systematic Zoology* 26: 19-31.

The Passeriformes and related perching birds have been difficult to classify but Feduccia has discovered new evidence, in the morphology of the stapes (columella or stirrup-bone) of the inner ear, to resolve phylogenetic relationships. The primitive condition, found in their reptilian ancestors, is shared in the majority of living birds, but derived conditions distinguish other groups including hoopoes and wood-hoopoes (with an "anvil" stapes), bee-eaters, motmots, kingfishers, todies and trogons (now grouped together as "Alcediniformes") and some (but not all) of the groups hitherto known as "suboscines."

Within the suboscines some families (including the Lyrebirds and New Zealand Wrens) retain the primitive condition of the stapes as do the structurally advanced oscines, whereas Old World pittas, broadbills, the Philepittidae of Madagascar and the tyrant flycatchers and other suboscines of the New World have a stapes of derived type. According to Feduccia, "the oscines and suboscines could not have shared a common ancestor," a statement that might make *Archaeopteryx* turn in its grave (or at least in its graving stone!). He means, however, that the Passeriformes, as previously conceived, are not monophyletic, the true "suboscines" being more closely related to the Alcediniformes (as defined above) than to the "oscines," which must include the Lyrebirds and New Zealand Wrens.

As knowledge of Tertiary birds increases, new patterns are emerging. The structurally primitive Piciformes (woodpecker allies) were "Apparently the predominant and perhaps the only perching birds of the early Tertiary of North America" the first passeriform being Upper Oligocene and doubtful. In both Europe and America, the Oligocene was a period of importance, even dominance, of Alcediniformes, and the early records of Passeriformes need checking.

The classification proposed uses some names chosen because of common usage and euphony rather than priority, as permissible for orders, which are not subject to the Code of Zoological Nomenclature. The Orders Piciformes, Coraciiformes, Upupiformes, and Bucerotiformes have the usual content. The Order Alcediniformes contains the superfamilies Meropoidea (bee-eaters) Alcedinoidea (Kingfishers, motmots, todies, each a family) and Trogonoidea (trogons). The Order Tyranniformes includes the several families of suboscine birds and the Order Passeriformes has its normal content plus the two groups rejected from the suboscines.

For New Zealand ornithologists this paper reclassifies the Xenicidae: they can no longer be considered diminutive relatives of the Pittas but their affinity within the Passeriformes has not been established. Moreover, if the radiation of the Old World oscines was post-Eocene, the endemic New Zealand passerine families may not be as old as has sometimes been suggested.

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