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Abstracts

FEATURE ARTICLES

SYSTEMATICS AND HISTORICAL BIOGEOGRAPHY OF WAGTAILS: DISPERSAL VERSUS VICARIANCE REVISITED

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Abstract. Nucleotide sequences of the mitochondrial cytochrome *b* and ND2 genes were used in analyses of phylogenetic relationships of 10 of the 11 currently recognized species of wagtails (Aves: *Motacilla*). All analyses produced similar hypotheses of species relationships. Both *Motacilla citreola* and *M. flava* are paraphyletic, and consist of two and three distinct clades, respectively. *M. lugens* and *M. alba* are paraphyletic with respect to one another. None of the three currently recognized superspecies are monophyletic. A series of alternative tree topologies on which species and superspecies monophyly were enforced were significantly worse estimates of relationships in all cases except that of *lugens* and *alba*. Ancestral area reconstructions suggest that *Motacilla* arose in the eastern Palearctic; molecular-clock dates suggest that this occurred roughly 4.5 million years ago. *Motacilla* colonized Africa around 4.5 million years ago, and accomplished a second ancestral colonization of that continent about 2.9 million years ago. A number of recent dispersals from Eurasia to North Africa and North America (via both Alaska and Greenland) have occurred, and no fewer than 26 dispersals have occurred throughout the evolution of the modern distribution of this genus. This result, similar to results of other recently studied avian lineages, strongly suggests that dispersal has been an important factor in the development of modern-day avian distributions.

Key words: colonization, dispersal, intercontinental biogeography, mitochondrial DNA, molecular clock, *Motacilla*, vicariance.