

FEATURE ARTICLES

SOCIAL SELECTION AND GEOGRAPHIC VARIATION IN TWO MONARCH FLYCATCHERS FROM THE SOLOMON ISLANDS

CHRISTOPHER E. FILARDI¹ AND CATHERINE E. SMITH

University of Washington Burke Museum and Department of Biology, Seattle, WA, 98195

Manuscript received 22 February 2007; accepted 16 November 2007.

¹Present address: American Museum of Natural History, Center for Biodiversity and Conservation, Central Park West at 79th Street, New York, NY 10024. Email: filardi@amnh.org

Abstract. We tested the potential for social selection to act as a mechanism driving rapid plumage divergence in two sympatric monarch flycatchers, the White-capped Monarch (*Monarcha richardsii*) and the Kolombangara Monarch (*M. browni*), endemic to a single island group in the Solomon Archipelago. Solomon Island monarchs are famous for dramatic patterns of morphological divergence across very narrow water gaps, little parallel ecological variation, and minimal genetic differentiation among sister taxa inhabiting adjacent island groups. Social selection theory predicts that plumage traits evolved in allopatry may transmit important social information and that responses of dimorphic and monomorphic taxa to territorial intrusions will differ. For the dimorphic *M. richardsii*, we presented mounted specimens of subadult or female- and adult male-plumaged individuals to territorial birds and quantified their responses to these simulated intrusions. Territorial male *M. richardsii* generally responded alone, reacting most aggressively to adult male mounts. This response suggests that the bright white cap and occipital and nape patches on male *M. richardsii* function as social signals. In contrast, in the monomorphic *M. browni*, both sexes responded aggressively to intrusions of an adult-plumaged conspecific mount. Furthermore, in a variety of Melanesian forest passerines, individuals of dimorphic species generally responded singly to simulated territorial intrusions, whereas individuals of monomorphic taxa usually responded in pairs. Together, these data suggest social selection may be an important mechanism of population divergence driving some of the most extreme patterns of geographic variation among birds.

Key words: dichromatism, *Monarcha flycatchers*, mount presentations, plumage, social selection, Solomon Islands, speciation