

Phylogeography of three endemic birds of Maratua Island, a potential archive of Bornean biogeography

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Abstract. Maratua is an oceanic island ca. 50 km off the east coast of Borneo and home to several endemic taxa of birds and mammals. To determine the phylogeographic relationships of three of Maratua’s most distinctive avian endemics—a shama *Copsychus stricklandii barbouri*, a bulbul *Pycnonotus atriceps hodiernus*, and a monarch *Hypothymis azurea aeria*—we compared their mitochondrial ND2 sequences with those of putatively closely related Southeast Asian populations. We found that Maratua’s shama and bulbul are substantially differentiated from populations on Borneo and elsewhere in Southeast Asia, whereas Maratua’s monarch is not. The shama’s phylogeographic tree indicates a sister relationship between *C. s. barbouri* and *C. s. stricklandii* of northeast Borneo, both of which have white crowns (ND2 distance ~2%). These two taxa, in turn, are >3% divergent from *C. malabaricus* populations, which have black crowns. The relative morphological and genetic similarity of *C. s. barbouri* and *C. s. stricklandii* suggests that *C. stricklandii* had a broader distribution in eastern Borneo in the mid-Pleistocene and that *C. s. stricklandii* has more recently moved or been restricted to its current position in northeast Borneo. Maratua has thus acted as a biogeographic “museum”, preserving evidence of *C. stricklandii*’s former distribution. The Maratuan *P. atriceps* is about equidistant genetically from other *P. atriceps* populations. It is distinguished by an overall grey body plumage, whereas *P. atriceps* elsewhere is mostly yellow (with grey morphs appearing only rarely). The universality of grey birds on Maratua is likely the result of a founder effect. The Maratuan monarch’s genetic similarity to the mainland Bornean population suggests either that it is a recent invader or that substantial gene flow occurs between Borneo and Maratua in this species. The genetic and morphological distinctiveness of the shama and bulbul are adequate to consider them both as full species.

Keywords. *Copsychus malabaricus*, *Copsychus stricklandii*, *Hypothymis azurea*, phylogeography, *Pycnonotus atriceps*, rare morphs

INTRODUCTION

Maratua is a small oceanic island ca. 50 km east of east Kalimantan, Indonesian Borneo (Fig. 1). It is home to only 35 resident land-bird species, one monkey, and two rats. Among its depauperate vertebrate fauna, however, are some endemic taxa with substantial potential to inform biogeographers about the history of species distributions and diversification on Borneo. Maratua is close enough to Borneo

to attract occasional terrestrial immigrants, but isolated enough to act as a “museum”, preserving the morphology and genetic character of faunas that inhabited eastern Borneo long ago (Fooden, 1995). In this respect Maratua resembles, on a smaller scale, the Mentawai Islands off southwestern Sumatra (see Fig. 2B), which have preserved a surprising array of early Sundaic vertebrates, including an endemic gibbon and a proboscis-like monkey (Wilting et al., 2012).

The first collector to visit Maratua was Harry Cusheir Raven in 1912–1913. He obtained specimens of all of the island’s terrestrial bird and mammal species for the US National Museum (Miller, 1913; Riley, 1930; Kellogg, 1944; Deignan, 1959). In 1926, E. P. Mjöberg made the second collection, this time for Harvard University (Bangs & Peters, 1927). The curators who handled these early specimens were impressed by the distinctiveness of Maratua’s birds and mammals, and they named several as new species (Miller, 1913; Bangs & Peters, 1927; Kellogg, 1944). Most of these names have survived to modern times as subspecific epithets: viz., *Macaca fascicularis tua* (Long-tailed Macaque) (Fooden, 1995), *Rattus tiomanicus mara* (Malayan Field Rat) (Musser & Califfa, 1982), *Aerodramus salangana maratua* (Mossy-nest Swiftlet), *A. fuciphagus perplexus* (Edible-nest Swiftlet), *Pycnonotus atriceps hodiernus* (Black-headed

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