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Abstracts

SHORT COMMUNICATIONS

MELANIN BASIS OF ORNAMENTAL FEATHER COLORS IN MALE ZEBRA FINCHES

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Abstract. The carotenoid-pigmented bill of Zebra Finches (*Taeniopygia guttata*) has received much recent attention as a sexually selected signal of quality, but these birds also display several sexually dichromatic plumage traits, including rust-colored cheek patches, a black breast band, and brown flanks. Black, brown, and earth-toned features in animals are thought to be produced by melanin pigments, but few studies have identified the melanin content of such colors in bird feathers. We used a series of biochemical techniques to investigate the pigmentary basis of these plumage colors in male Zebra Finches. All three feather traits contained melanin pigments, but varied in the amounts of the two basic forms of melanin (eumelanin and phaeomelanin). Black breast feathers contained predominantly eumelanin, whereas cheek and flank feathers contained extraordinarily high concentrations of phaeomelanin. Conventional methods of carotenoid analysis detected no carotenoids in either the cheek or flank feathers.

Key words: carotenoids, eumelanin, phaeomelanin, pigments, plumage coloration, *Taeniopygia guttata*, Zebra Finch.