

ABSTRACTS FOR *CONDOR* 103(3) AUGUST 2001

FEATURE ARTICLES

MORPHOLOGICAL HERITABILITY IN A HYBRID BUNTING COMPLEX: *NESOSPIZA* AT INACCESSIBLE ISLAND

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Abstract. Juvenile *Nesospiza* buntings measured 7–11 weeks after hatching were compared with the sizes of their parents to estimate the heritability (h^2) of six external morphological characters. There was no evidence of size selection before juveniles were seven weeks old, but some additional growth in bill size probably occurred after this age. All characters had significant heritabilities among Tristan Buntings (*N. acunhae*; $h^2 = 0.66$ – 0.95) and hybrids with Wilkins' Buntings (*N. wilkinsi*; $h^2 = 0.62$ – 0.93). Positive heritabilities also were found within color morphs of the Tristan Bunting, although not all regressions were significant. Hybrid offspring generally were intermediate in size between their parents' phenotypes, but one hybrid pair had an unusually small offspring, possibly the result of an extra-pair fertilization. Differences between h^2 estimates from sib-sib and parent-offspring regressions suggest that environmental factors contribute to morphological variability, but the large heritable component confirms the potential for rapid morphological evolution among the small *Nesospiza* populations. Calculation of the relative importance of genetic and environmental effects requires controlled breeding experiments, but cross-fostering between broods in the field should not be performed, to avoid disrupting the natural population structure.

Key words: color morphs, heritability, hybrids, islands, morphology, *Nesospiza* buntings, Tristan da Cunha.

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