Sexual selection and the fate of introduced pigeons and doves (Aves: Columbidae)

Michael P. Moulton¹, D.K. McLain² and Linda E. Moulton³

¹Department of Wildlife Ecology and Conservation, University of Florida, Gainesville, Florida,
²Department of Biology, Georgia Southern University, Statesboro, Georgia and
³Interlochen Arts Academy, ICA, Interlochen, Michigan, USA

ABSTRACT

Background: Recent research has indicated that a response to sexual selection as manifested by plumage dichromatism predicts the introduction success of passeriform birds but not that of galliform birds.

Question: Does the response to sexual selection predict patterns of introduction success in species of the family Columbidae?

Data description: We compiled lists of introduced columbids using published references for ten island systems. We examined specimens of introduced columbid species housed at the Museum of Natural History in Tring, England. We measured wing lengths of individuals of each species and we categorized species as being either plumage dichromatic or monochromatic. We also compared success with native range size and wing length.

Conclusions: We found no difference in introduction success rates of monochromatic versus dichromatic columbids. Moreover, we found no significant differences in wing lengths between the two groups or in sizes of geographic ranges.

Keywords: Columbidae, introduced birds, sexual selection

INTRODUCTION

Sexual selection has favoured exaggerated development of male traits used in epigamic displays and agonistic contests (Andersson, 1994). Such exaggerated traits have long been argued to impair male survival (Darwin, 1871; Wallace, 1889; Fisher, 1958) and depress population fitness (Lande, 1987; Kirkpatrick and Barton, 1997). Allocation of energy to sexually selected structures and mate acquisition can result in poor male condition (Maney et al., 2008) and reduce energy allocated to coping with harsh or changing environments (McLain, 1993; McLain and Vives, 1998; but see Whitlock, 2000; Rankin and Arnaquist, 2008). Thus, some theoretical models indicate that sexual selection can increase the risk of extinction (Tanaka, 1996; Gavrilets et al., 2001; Arnaquist and Rowe, 2002; Kokko and Brooks, 2003).

In birds, male-brighter sexual dichromatism may reflect an evolutionary response to strong sexual selection pressures (Scott and Clutton-Brock, 1989; Möller and Birkhead, 1994; Dunn et al.,...
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