

*The Condor*  
Volume 105, No. 2  
May 2003 C.E.  
Abstracts

## FEATURE ARTICLES

### DIETARY AND SEXUAL CORRELATES OF CAROTENOID PIGMENT EXPRESSION IN DOVE PLUMAGE

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Manuscript received 29 April 2002; accepted 2 December 2002.

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*Abstract.* Carotenoid pigmentation in birds' plumage is considered an honest indicator of phenotypic quality, and thus a target of sexual selection. But carotenoids also fulfill essential physiological functions, and therefore, carotenoids should only appear in plumage if they are in excess of those needed physiologically. We explored the presence of carotenoid-based plumage coloration in columbids and its association with diet and sexual dichromatism using a comparative analysis. We found that carotenoid plumage pigmentation appeared three times independently in doves, and that these events were always associated with frugivorous feeding habits. This suggests that expression of carotenoid-based plumage color in granivorous species may be constrained by the scarcity of carotenoids in their diet. However, more than half of the frugivorous species lack carotenoid-pigmented plumage, indicating that rich dietary sources of these compounds are a necessary but not sufficient cause for their expression in plumage. Analyzing 12 pairs of sister taxa, we found that plumage dichromatism was neither associated with the amount of carotenoid pigment present in the plumage nor with the sexual dimorphism in carotenoid-pigmented plumage. Although the presence of carotenoid-based plumage coloration has been related to sexual selection in several taxa, we failed to show such an association in columbids.

*Key words:* carotenoid pigments, Columbidae, dichromatism, doves, plumage color, sexual selection.