

URBANISATION MODIFIES PLUMAGE AND BEAK COLOUR OF COMMON BLACKBIRDS IN EUROPE

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INTRODUCTION

Living in the city is thought to affect the expression of secondary sexual traits in birds¹. The colour component of such traits has been suggested to be modified due to urbanisation^{1,2}. We investigated the effect of urbanization on plumage and beak colour of Common Blackbirds (*Turdus merula*), a sexually dimorphic species originally inhabiting forests but now widespread in cities. Plumage colour in this species is melanin-based, thus independent of food intake, while beak colour is carotenoid-based and thought to reflect individual quality in males (i.e. oranger bills indicate higher quality)³. If city living has negative effects on blackbirds, we predict that the colour of urban birds will suggest lower individual quality compared to forest living birds.

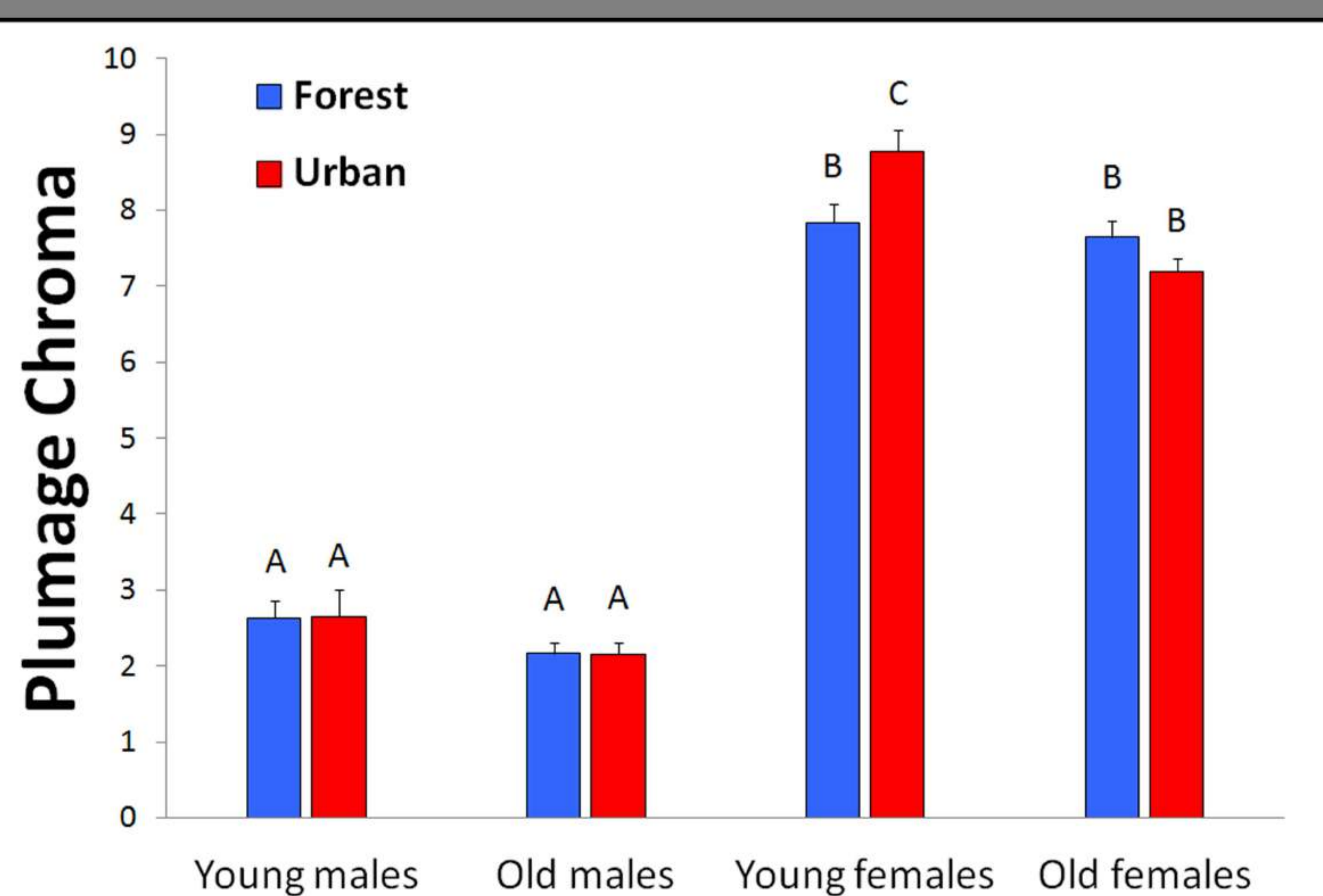
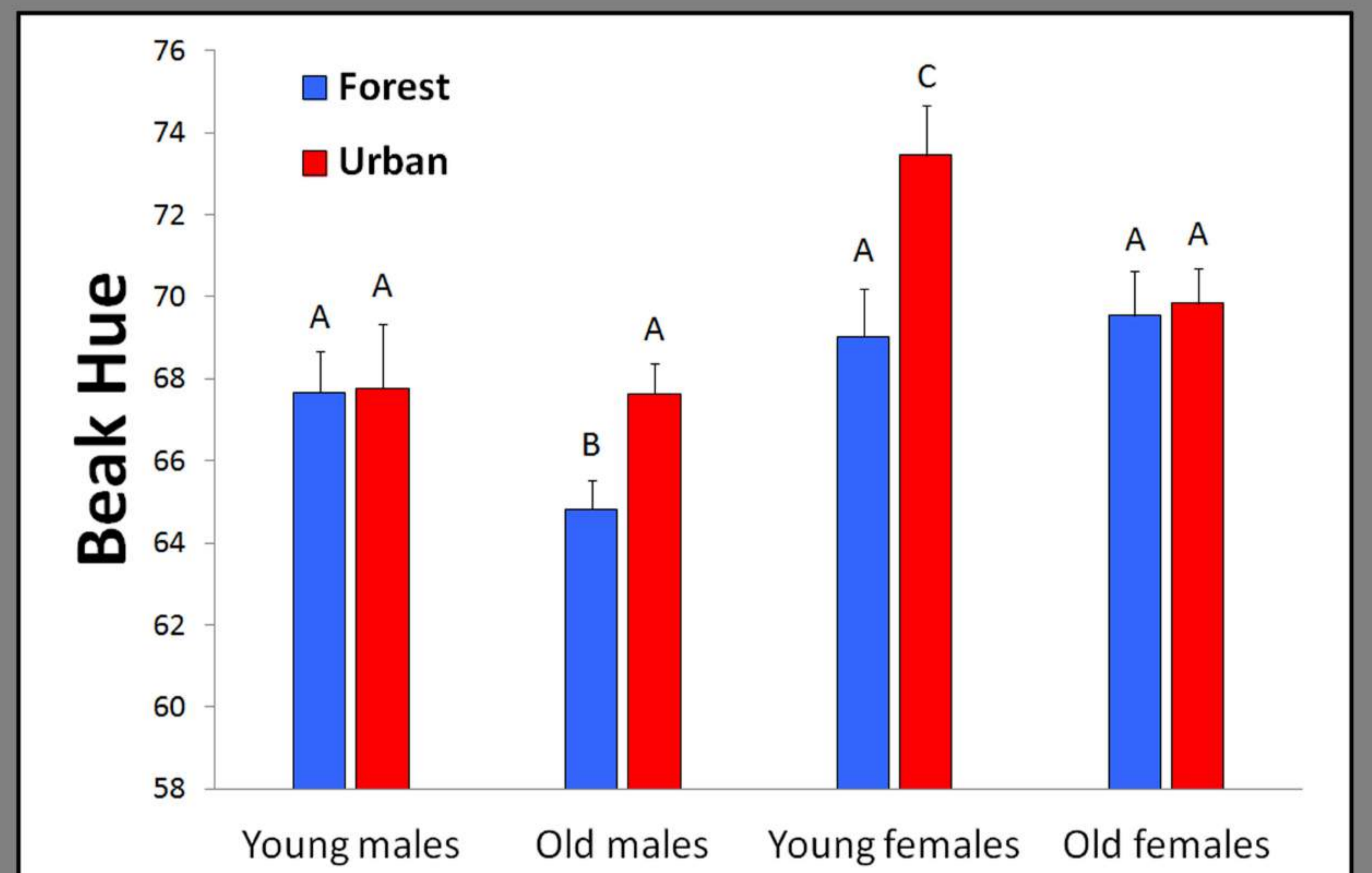
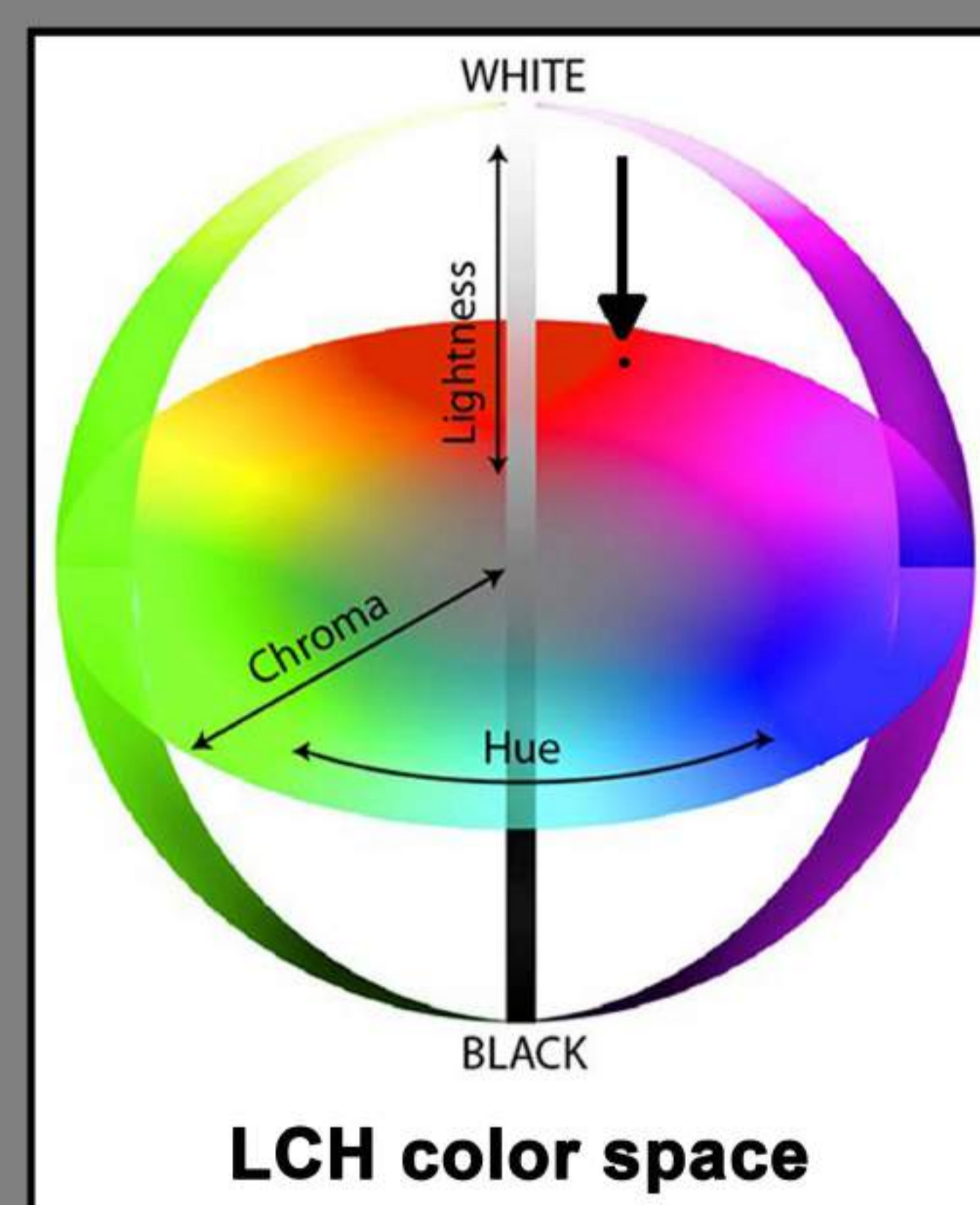
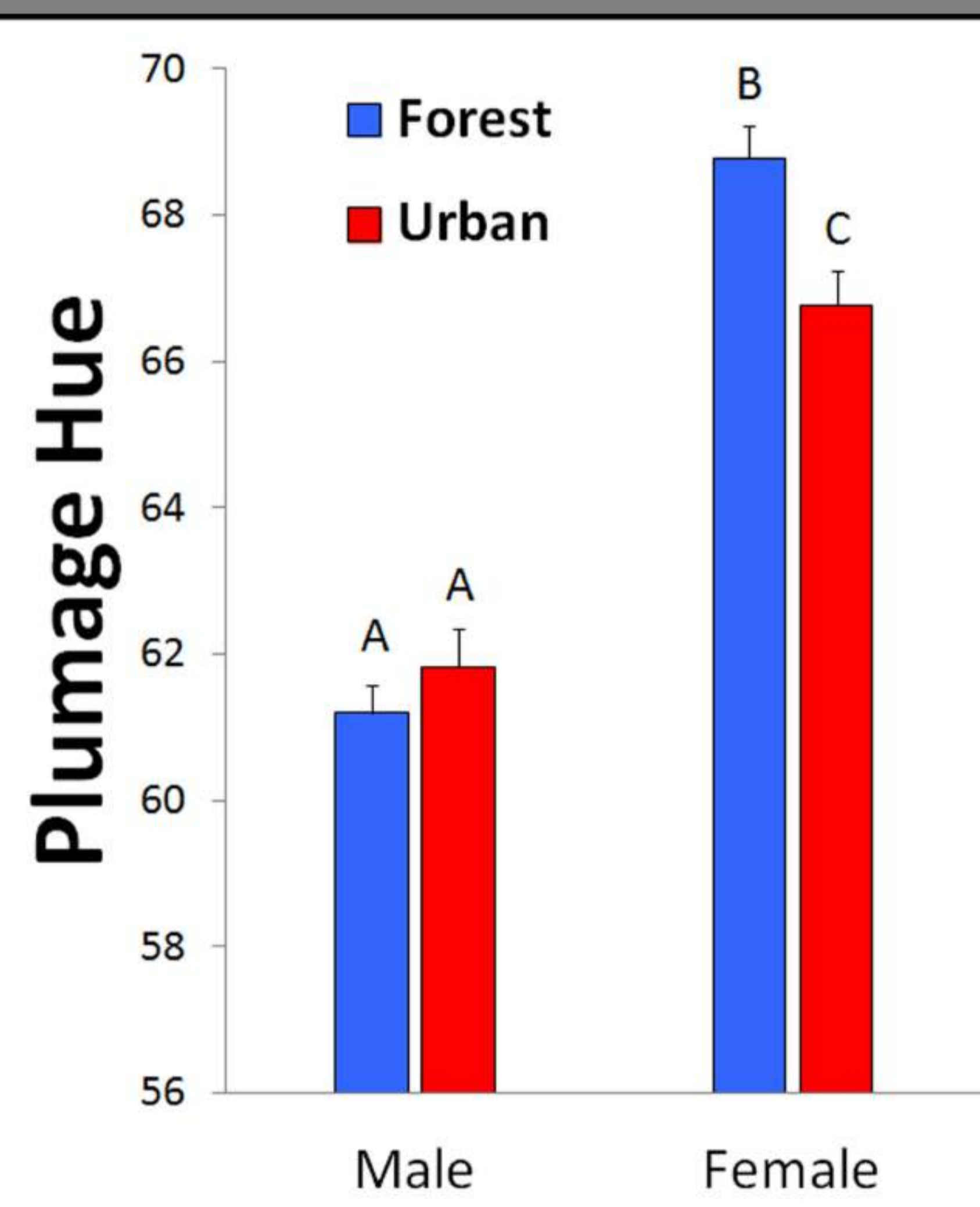
METHODS

We measured the plumage and beak color of 225 blackbirds in 5 urban and 5 forest populations along a latitudinal gradient in Europe (from Spain to Finland). We used a field spectrophotometer to obtain information on lightness, chroma and hue of each structure measured. We analysed our data using LMM including city as a random factor and habitat, sex and age as fixed factors.

RESULTS

BEAK	Lightness	Chroma	Hue
Habitat	p = 0.41	p = 0.67	p = 0.53
Habitat x sex	p = 0.84	p = 0.69	p = 0.60
Habitat x age	p = 0.78	p = 0.53	p = 0.66
Habitat x sex x age	p = 0.36	p = 0.53	p = 0.015

PLUMAGE	Lightness	Chroma	Hue
Habitat	p = 0.85	p = 0.65	p = 0.22
Habitat x sex	p = 0.07	p = 0.39	p = 0.006
Habitat x age	p = 0.34	p = 0.015	p = 0.37
Habitat x sex x age	p = 0.71	p = 0.03	p = 0.12



CONCLUSIONS

- Old male blackbirds in urban habitats have yellower bills than forest ones. Potential effect of the intake/use of carotenoids^{1,2} or age.
- Urban female blackbirds have feathers with lower hue values than those in forest habitat. Potential effect of contaminants⁴.
- Urbanization might be disrupting sexual selection in blackbirds by altering visual ornaments.

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