

Pacific Emerald Doves *Chalcophaps longirostris* socially signal with shoulder marking

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Abstract. Pacific Emerald Doves *Chalcophaps longirostris* attracted to a constantly available artificial food resource within North Queensland upland tropical rainforest often simultaneously numbered up to six individuals, resulting in frequent aggressive interaction. Observing and photographing Pacific Emerald Doves near and at the food source showed that individuals approaching feeders with conspecifics already at the feeders fully exposed their white shoulder-patch and held the wing joint just slightly away from the body, possibly as a flight-intention movement. Birds more distant from the feeders, or approaching them in the absence of conspecifics, exposed but a small part of their shoulder-patch, holding the wing tight against the body with body contour feathers covering the edge of the wing to give the usual appearance of the species. Thus, exposing the entire white shoulder-patch, which makes it appear whiter, functions as a ‘fight or flee’ social signal previously undocumented in the species or in any of the other *Chalcophaps* species.

Introduction

Pacific Emerald Dove *Chalcophaps longirostris* is the name for the Australasian population (now species: Gill *et al.* 2024) of the far widespread Emerald Dove group – all members of which were previously covered by the scientific name *Chalcophaps indica* as one species. It was long known in Australia and New Guinea as the Green-winged Pigeon (Frith 1982) or Emerald Dove (Goodwin 1970; Crome & Shields 1992; Higgins & Davies 1996; Baptista *et al.* 1997; Gibbs *et al.* 2001), the species as then defined being found from Kashmir, India, and Sri Lanka in the west eastward through South-East Asia, Indonesia, some offshore islands of Indonesian Papua, parts of Papua New Guinea, northern and eastern Australia and some islands of the western South Pacific (Gibbs *et al.* 2001).

Little is known “and surprisingly little published” (Higgins & Davies 1996, p. 876) of the social behaviour of the Pacific Emerald Dove (Higgins & Davies 1996; Baptista *et al.* 1997) other than observations by Harry Frith in the wild and captivity (Frith 1982), or of ‘Emerald Doves’ elsewhere (Baker 1913; Goodwin 1970; Skutch 1991; Gibbs *et al.* 2001). I have found no mention of social signalling by use of the white shoulder-patch of the Pacific Emerald Dove in Australasia nor the Asian Emerald Dove *Chalcophaps indica* or by Stephan’s Emerald Dove *C. stephani* (which has a non-contrasting dark-rufous shoulder-patch) in the literature (Baker 1913; Goodwin 1970; Frith 1982; Crome & Shields 1992; Higgins & Davies 1996; Baptista *et al.* 1997; Gibbs *et al.* 2001; Forshaw 2015). The species is typically seen in the wild as single birds or in pairs, and larger numbers are usually seen only at bird feeders, with gatherings of more than a pair elsewhere being not at all typical.

Observations

I spent a few hours watching and photographing Pacific Emerald Doves coming to feeders in a garden within

rainforest between Herberton and Malanda on the southern Atherton Tablelands, North Queensland. Because seed was made constantly available every day, they were present most daylight hours, with five or six or more birds not infrequently present at any one time. This artificially induced density of birds results in frequent aggressive interactions, raised-wing displays, and vigorous chasing of one pugnacious bird by another. In observing individual Pacific Emerald Doves approaching the bird-feeder area from the rainforest, I noticed that while any bird was relatively distant from the feeders its white shoulder-patches appeared, in extent and ‘whiteness’, typical of what I was used to frequently seeing on individuals of the species elsewhere. However, as birds approached feeders with others of their kind present their white shoulder-patches became more extensively visible and thus appeared far whiter. In birds in the normal, unintimidated, posture the leading wing joint, or bend of the wing, is held close to the body and the contour body feathers overlap the wing edge to cover a significant upper part, sometimes most, of the white shoulder-patch (see upper two images of Figure 1). In closer proximity to conspecifics, however, the bend of the wing is brought slightly out from beneath body contour feathers and held just a little away from the body and downward. This subtle movement exposes the full extent of the white shoulder-patch, and probably also better prepares the bird for instant flight should it need to avoid dominant individuals (see lower two images of Figure 1).

Discussion

It would appear that the subtle change from a normal posture, stimulated by the close proximity of potential rivals, as described and illustrated, may be a ‘fight or flight’ strategy of Pacific Emerald Doves. Thus, an individual bird fully exposes its white shoulder-patch to assert itself in the presence of potential rivals, and in so doing the bend of the wing is also brought away from the body which might well function as a physical flight-intention movement (independent of the signal function of exposing the white



Figure 1. Pacific Emerald Doves with the wing bend held against the body and the white shoulder-patch exposed in a normal way by lone or unconcerned birds (upper images), and with the wing bend held slightly away from the body and the white shoulder-patch fully exposed by birds nervous as they approach several rival conspecifics (lower images). Based upon soft part and head, neck, and underpart coloration, all are adult males, cf. Higgins & Davies (1996). Photos: Clifford B. Frith

shoulder) in better enabling the bird to quickly take flight should circumstances dictate it necessary. Further study should follow this initial observation in order to confirm the social function of the white shoulder-patch. It is possible that undisturbed individuals or pairs foraging on the ground typically expose little or no white shoulder feathering in order to enhance their crypticity but this requires confirmation.

A fundamentally similar social plumage signal is described for the widespread Common Wood Pigeon *Columba palumbus* of Europe when foraging on stubble fields (Murton 1965). If concerned about something in their environment, Common Wood Pigeons assume an alarm posture in which the neck is “outstretched, making the white nape-patch [*sic* – it is a neck-patch] very conspicuous” (Skutch 1991, p. 13). It is possible that other, lesser-known, pigeon species that wear a conspicuously contrasting patch of bright plumage may use it with a signalling-to-conspecifics function in some social contexts.

Acknowledgements

I thank Margit Cianelli OAM for drawing attention to the whiter shade of pale on Pacific Emerald Doves at her feeders. Margit Cianelli, James Fitzsimons, Thomas Macgillavry, Harry Recher,

Peter Valentine and Joe Wood provided helpful comment on a draft of this note, which I dedicate in fond memory of the late, great, ornithologist Derek Goodwin, pigeon specialist, cherished mentor, and friend.

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*Received 11 February 2024, accepted 20 March 2024,
published online 7 May 2024*

