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Geographical variation in plumage of female Klaas's Cuckoo

Chrysococcyx klaas

by M.P.S. Irwin

Received 17 November 1986

This problem arose when preparing the plumage descriptions for the Cuculidae for Volume 3 of 'The Birds of Africa' (Academic Press, in press). The southern African material in the collection of the National Museum of Natural History in Bulawayo was used, which consisted of skins collected, mostly from Zambia and Zimbabwe, and included 18 female specimens. These show the well-marked and consistent sexual dimorphism indicated in the literature for this part of Africa, but in sharp disagreement with plumage descriptions and statements from elsewhere within the species' range, and especially from West Africa.

In southern Africa, Klaas's Cuckoo Chrysococcyx klaas is known to be strongly sexually dimorphic in plumage, with brownish, relatively dull-coloured females immediately distinguishable from brightly coloured males (Rowan 1983). Adult females in that part of the species' range are matt bronzy-brown above, from crown to uppertail-coverts, and have the central pairs of rectrices dull coppery. Below, the throat and breast are pale whitish-buff and the remainder of the underparts are variably barred dusky brown on the flanks. The sides of the neck and the lateral side panel or half-collar are dusky brown. The wings are glossy green, barred and tipped with chestnut or buff, the primaries spotted with chestnut-buff on the outer webs. In contrast, the adult male is shiny metallic green above and on the wings, with a faint golden or coppery wash on the back, varying from green to reddish copper on the central rectrices. The sides of the neck are metallic green and the lateral panel or half-collar, green or shot with copper, the whole sharply contrasting with the pure white underparts, relieved only by some dusky barring on the flanks and green streaking on the thighs.

Notwithstanding such clear-cut and diagnostic sexual dimorphism in this region, considerable disagreement exists in the current literature as to the usual female plumage and the degree of variation that occurs. This is sometimes described as similar to, or even indistinguishable from, that of the male. Bannerman (1933) showed in West Africa that the majority of females differ but slightly from males, but that the upperparts are generally more coppery, often a reddish-copper, the underparts, especially the flanks, with narrow brown bars, in some cases almost meeting across the belly. Bannerman also added in a footnote that there was no question of mis-sexing male-plumaged females prepared by reliable collectors and that in two cases such birds had contained eggs. Jackson & Sclater (1938) described females in Kenya and Uganda as having the head and nape uniform brown, the rest of the upperparts barred with dull rufous and metallic green and the central rectrices coppery brown; the underparts whitish with narrow brown cross bars. Friedmann (1948), writing of Africa as a whole, repeated the statement that females are similar to males, but with the upperparts with more of a coppery suffusion, and the lateral underparts (sides and flanks) more pronouncedly barred, in some cases the bars extending across the belly. Mackworth-Praed & Grant (1962) give a similar description for the southern third of Africa, but added that the primaries are brown with dark buff spots on the outer

but added that the primaries are brown with dark buff spots on the outer webs and that occasionally females are more similar to adult males. For the region south of the Zambezi and Cunene Rivers, McLachlan & Liversidge (1978) refer merely to plate 36 which shows a dimorphic brown-backed and green and buff-barred female with heavily barred underparts, but without showing the dark lateral side panels. They remark that females are sometimes like males. Maclean (1984) stated that females are mainly brown above and barred with metallic green on the wings; he illustrated a dimorphic bird showing something of the dark lateral side panel and barred underparts. Rowan (1983) also emphasises that the females are much browner above with bronze tones on the head, neck and upper mantle; she goes on to give a more detailed description of a typically dimorphic bird. All authors writing of South Africa differ only in detail in the descriptions or accompanying illustrations, and the emphasis is on strongly developed sexual dimorphism rather than similarity. Nevertheless, Serle (1965) has unequivocally shown by dissection, that in Cameroon male-plumaged females had well-developed ovaries or were just about to lay and that they varied greatly in plumage.

In order to reconcile these contradictions I recently examined the material in collection of the Sub-Department of Ornithology of the British Museum (Natural History) at Tring, UK. This immediately confirmed that there is well-marked geographical variation in female plumage and that the conflicting statements in the literature are a reflection of this. Basically, birds in Tring from southern Africa show the least individual variation and the greatest sexual dimorphism, while these plumage variations can be divided into five somewhat arbitrary categories that merge one with another, so that placing individual specimens is at times rather subjective. Plumage categories and the provenance of specimens are as follows:

- 1) Male-plumaged females considered correctly sexed and indistinguishable from adult males: Cameroon (four), and one specimen each from Nigeria, Uganda and Kenya. Of these, three from Cameroon and one from Nigeria were sexed by W. Serle and had the ovaries slightly or greatly enlarged.
- 2) Male-plumaged females, less greenish, more markedly shot with iridescent purple above and noticeably so on sides of throat and half-collar: Cameroon (two), and one specimen each from Liberia, Ghana, Bioko, Kenya and Tanzania. One of the Cameroon specimens had contained small eggs.
- 3) Male-plumaged females like the last, but with less metallic gloss of sides of neck and half-collar, barring on chest and flanks more marked and extensive; chestnut barring on wings noticeable: Liberia (two), Ghana (one), Nigeria (two), Cameroon (two) and Gabon (one). A Liberian specimen collected by A. Forbes-Watson had 8 mm yolks and another from Nigeria collected by W. Serle a fully developed egg.
- 4) Intermediate plumaged females, more clearly sexually dimorphic; crown and back metallic purple, but less glossy, more matt in appearance; sides of throat and half-collar dark brown, non-metallic with only hint of purplish suffusion; underparts extensively barred, washed buff, wings metallic green, barred chestnut and primaries extensively barred and spotted with chestnut. Sierra Leone (two), Cameroon (one), Central African Republic (two), Sudan (four), Ethiopia (three), Zaire (one)

Uganda (five), Kenya (four), Tanzania (one), Malawi (two), Mozambique (one), Angola (two) and South Africa: Cape (one).

- 5) Fully dimorphic females as described above. Sides of neck and half-collar non-metallic, barring of underparts finer, more clearly vermiculated. Fifteen specimens examined from Malawi and Zambia southwards to the Cape and not listed separately.

From the above analysis it is apparent that male-plumaged females in categories (1-3) predominate in West Africa and also occur in Kenya and Tanzania. A further 29 specimens in intermediate plumage come from throughout the species' range, and fully dimorphic females are apparently restricted to the southern savannas from about Zambia and Malawi to the Cape. However, from large areas in central and eastern Africa, particularly Angola, Zaire and Tanzania there are very few specimens, and the examination of larger series in other major museum collections would certainly refine the picture. It may be added, that in collections, males usually outnumber females more than two to one. There also appears to be greater instability in plumage north of the Equator than south of it. However, it is significant that male-plumaged females in the first three categories are unknown south of Tanzania, and that those showing the greatest degree of sexual dimorphism in southern Africa are unknown from East Africa or anywhere even approaching the Equator (although there are insufficient specimens to indicate how far north such birds might go in the non-breeding season).

No attempt has been made to explain this geographical variation and the matter will clearly require much further study.

SUMMARY

Females of Klaas's Cuckoo Chrysococcyx klaas show marked geographical plumage variation and in West Africa are most similar to the males, whereas in the southern savannas there is marked sexual dimorphism.

RESUME

Il y a beaucoup de variation géographique entre les femelles de Chrysococcyx klaas. En l'Afrique de l'Ouest elles ressemblent les mâles plus qu'aux savannes du sud, où se trouve une véritable dimorphisme sexuelle.

ACKNOWLEDGEMENTS

I am most grateful to Dr Hilary Fry for commenting on a draft of this paper and to Mr G.S. Cowles and Mr P.R. Colston of the Bird Room staff at Tring for providing facilities for study.

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