EVEN MORE ABERRANT WOODLAND KINGFISHERS

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The first aberrant Woodland Kingfishers *Halcyon senegalensis* caught at Nchalo, Malawi (16°16S, 34°55E) were described by Hanmer (1983). Those birds all had bilateral red patches on what ought to be a black mandible. Then Hanmer (1984) discussed the possible causes of the aberration, after obtaining the opinions of several people who had extensive knowledge of Woodland and/or Mangrove Kingfishers *H. senegaloides*. Two main possibilities emerged: (1) the red patches could have been due to delayed melanin deposition in immatures or to a genetic mutation affecting melanin deposition; (2) they could have been the result of hybridization between Woodland and Mangrove Kingfishers.

Up to 1984 I was not aware of all the plumage differences between these two closely related kingfishers, but from then on, the feathers around the carpal joint (underwing) were examined. The Woodland Kingfisher has a wholely white underwing, while the Mangrove has a big black patch on the carpal joint (Fig. 1 overleaf). Maclean (1985) was in error on this subject, as was Fry (1980) (C. H. Fry *in litt.* and pers. obs.). Between 1984 and 1988 all birds, with or without aberrantly-coloured bills, appeared to have white under wing-coverts.

On 23 February 1989 a young adult (*ca* 15 months old) Woodland Kingfisher was caught. It was that species in respect of bill length, depth and width, body plumage, wing length and weight, but the bill was marked as in Fig. 2c (page 45) and, although most of the underwing feathers were white, the under primary coverts 6-9 were finely black tipped (Fig. 1b). The fine line of black was not very distinct and could, on a cursory inspection, have been missed.

On 26 March an immature (*ca* 4 months old), with the bill marked as in Fig. 2e was caught. It had a small black patch on the carpal joint and distinctly black tips to under primary coverts 4-10 (Fig. 1c). In all other respects this was a Woodland Kingfisher.

On 23 March 1989 another immature was caught, with a similarly marked bill to the above two birds, but one in which the amount of red was considerably greater (Fig. 2d). This bird was very carefully examined. There was no black whatsoever on the underwing.

In March 1988 a young adult (*ca.* 16 months old), with bill resembling Fig. 2a, apparently had white under wing-coverts, but in view of the faintness of the black line in the February 1989 bird and the fact that I merely glanced at the underwing (as I did with previous aberrants, since I had assumed that any black would stand out against the white plumage), I am not certain that no black existed.

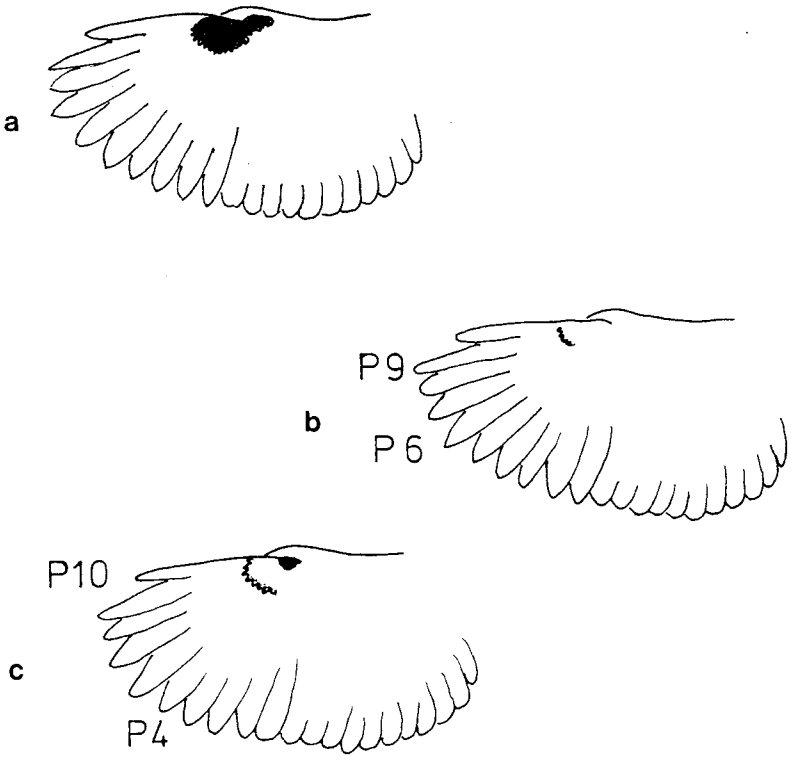

FIGURE 1

UNDERWING OF (a) MANGROVE KINGFISHER *HALCYON SENEGALOIDES*, (b) AND (c) TWO NCHALO WOODLAND KINGFISFHERS *H. SENEGALENSIS* WITH ABERRANT BILL COLOUR (FIGURE 2c AND 2e RESPECTIVELY)

That all four of the recently caught aberrant birds described here should be young (between 4-16 months old), might suggest that Milstein (1983) and Fry (1983a) were correct in suggesting that the aberrant bill colour was related to age (the assumption being that as the birds aged, the red patch would disappear) and this is possible, but it does seem improbable that black feathers or black tipped ones would bleach with age. Unfortunately, with the closure of the Nchalo Ringing Station, it is unlikely that either of these birds will be retrapped in 1989/1990.

Of the ten birds, with some red on the mandible, which were ringed at Nchalo before 1988, only three were retrapped in later years. One immature (*ca* 3 months old) had a very thin line of red along part of the cutting edge on one side of the mandible. Two years later it was still present. An adult with a normal bill (and wholely white underwing) when ringed, had acquired a similar, but bilateral, fine red line three years later and still retained it three years after that. The positon of the red, from the middle to near the tip of the cutting edge, would suggest that its origin was different from that of red patches involving the gonys or the side of the mandible; it could be due to damage to the edge. Neither of these two birds is considered to have been aberrant. The only aberrant which had been recaptured, an immature when ringed, with the bill as in Fig. 2a resembled Fig. 2b eight months later, but underwing colour was not noted.

Of the other seven aberrants, never recaught, three (one immature, one young adult and one adult) were as Fig. 2a, one adult was as Fig. 2b, one young adult was as Fig. 2c and two (a young adult and an adult) were as Fig 2e. Of these, only the last three are known to have had (apparently) white under wing-coverts.

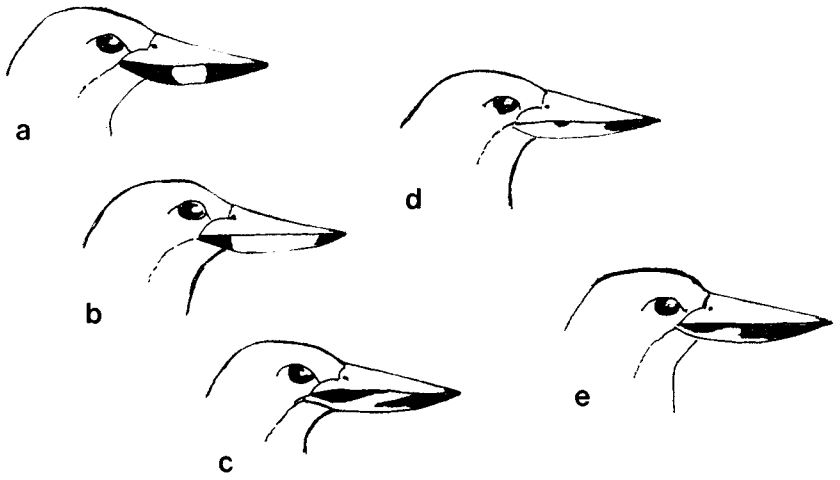

FIGURE 2

BILATERAL RED MARKINGS ON MANDIBLES OF VARIOUS NCHALO WOODLAND KINGFISHERS *HALCYON SENEGALENSIS*. SEE TEXT FOR NUMBER AND DESCRIPTION OF INDIVIDUALS RELATING TO PATTERNS (a) TO (e).

NOTE: ALL NCHALO WOODLAND KINGFISHERS HAD A 0,5-1,0 CM BLACK TIP TO THE MAXILLA

The amount of red on the mandible and the areas affected, seem to differ in different individuals. Also, apparently white under wing-coverts were found in birds which had differing red areas. Two birds which had the red involving the gonys, base and part of the side of the mandible (Figs. 2c and 2e) had some black on the underwing, but the Fig. 2d bird definitely did not have any black feathers there, nor (apparently) did the other Fig. 2c bird.

If Woodland Kingfishers which breed in or pass through Nchalo are genetically unstable as to mandible colour, then some variation in expression is to be expected, but I fail to see how such instability could produce any black on under wing-coverts. However, if hybridization has occurred, it must have occurred several times to account for the 12 aberrant birds (several aged 4-16 months) between 1979 and 1989 (none was caught between 1973 and 1978), so that it would be possible that some of the pairs which bred in 1987 and 1988 consisted of two hybrid birds. Their offspring might, therefore, have acquired a double dose of a gene from some black on the underwing, which could account for that character appearing in birds caught in 1989.

Professor C. H. Fry, informed of this latest discovery, replied "I don't know what to make of it all any more than you do and cannot add anything to the idea which we discussed in Safring News (Fry 1983b, Hanmer 1983, 1984) of possible introgression. It still seems quite a possibility.".

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