Guineafowl spend much time feeding in tall grass. Characteristics of the head and neck (which at such times are the only visible parts of the bird) offer individual identification criteria for the observer.

Combining and recording casque shapes and bare skin colour patterns of individual birds has proved to be an authentic identification technique in a small group of guineafowl.

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FURTHER COMMENT ON BILL PIGMENTATION IN THE WOODLAND KINGFISHER

P. Le S. Milstein

The paper by Hanmer (1983) on aberrant bill pigmentation in the Woodland Kingfisher *Halcyon senegalensis*, with additional comments both by Fry (1983) and Mrs Hanmer, was most interesting to me as I had also noted aberrant bill pigmentation in this fascinating kingfisher at Mineral Range 190 JS in the central Transvaal (25 20S; 29 35E).

It is important to realise that in this kingfisher the bill is initially pink, but subsequently dusky melanistic pigment is deposited in both mandibles before later attainment of the characteristic adult colouration of scarlet maxilla and black mandible under genetic control. In an earlier paper on the breeding biology of this species (Milstein 1962), I noted:

> "The beak, gape, and legs are still salmon pink up to about seven days of age. Then dark pigments begin to develop in both mandible and maxilla, while the pink colour gradually becomes orange. Apparently normal development is a gradual darkening of the bill until it is a dark brownish or blackish colour, with the tips of both mandible and maxilla still orange, and the gape orange or red-orange. Data from J.P. Chapin (1961, personal communication), Barbour and Tarboton

broadly confirm this. However, in this species there is definitely individual variation in the colour of the bill before the red maxilla and black mandible of the adult is attained. It is agreed with Chapin that this does not seem significant. Apparently it is merely a question of the pigment changes occurring at different ages in juveniles, and also in slightly different forms. Communicated by Chapin, the earliest change is one of two specimens from the same nest, both still retaining the egg-tooth; one had the bill almost entirely blackish while the other's bill was entirely orange. The latest change is the exceptional juvenile (previously mentioned) captured barely able to fly at Mineral Range on 7 February 1960, and ringed. The entire bill was more red than orange, and apparently only then was dark pigment forming in the basal ridge of the mandible. The legs and feet were not yet dusky, but melanistic pigment was visible in the scales. At fledging the legs and feet are normally still red-orange. The alarm call of this specimen was that of *Halcyon senegalensis*, and the locality is fortunately far distant, but it appeared remarkably like the Mangrove Kingfisher *H. senegaloides*."

Like Fry, I have handled large numbers of study-skins of the Woodland Kingfisher, including the extensive series of the Royal Museum for Central Africa at Tervuren in Belgium and the British Museum in London, without encountering the aberrant pigmentation described by Hanmer. However, I agree with Fry that this charateristic would be less visible in study-skins than in life, as the scarlet colour fades. Since my primary objective was to study the speciation associated with our blue-crowned migratory subspecies *cyanoleuca* and the comparatively sedentary brown-crowned subspecies *senegalensis* (including the darker form '*fuscopilea*') as well as their relationship with the Mangrove Kingfisher, I think that I would have noted such aberrant bills when measuring them.

I agree with Fry that the fact that these bill aberrations are still present in adults must make them rare. Tempting though it is to invoke the convenient hypothesis of hybridization with the Mangrove Kingfisher, I cannot accept this on present evidence. The split in ancestral stock presumably took place during the Pleistocene climatic vagaries so well indicated by Moreau (1966), with the Mangrove Kingfisher probably surviving in a coastal east African drought refuge while the differentiated south-eastern *cyanoleuca* and north-western *senegalensis* populations later fused again before full speciation had been achieved. The Mangrove Kingfisher is reputed to have retained earth-burrows as nesting sites while the Woodland Kingfisher has apparently invariably adopted tree-holes for nesting, usually those of barbets and woodpeckers.

Inadequate data are available to determine the difference in courtship and other breeding displays between the two species,

but it appears unlikely that they would have maintained their apparent integrity as full species on mere superficial differences and by separation which is possibly more ecological than truly geographical.

Assessing the data of Hanmer, I find the aberrant bill pattern 'c' of particular significance. A supposed Mangrove Kingfisher hybrid would clearly have been even less likely to have the tip of the maxilla pigmented black than an aberrant Woodland Kingfisher. It is of interest that this pattern is almost precisely the opposite of the intermediate dusky 'juvenile' pattern described earlier. Furthermore, it appears that this is the individual with the short bill having 'signs of regrowth' at the tip. In a non-burrow excavating species it may be that the bill had been slightly damaged rather than being worn down in the breeding season.

The patterns 'a' and 'b' are relatively easily explained. In the first case temporarily incomplete deposition of the black pigment may have occurred, with possible completion still possible, although my aberrant fledgling had commenced an apparently uniform darkening of the basal ridge of the mandible. In the second case incomplete deposition of melanin under only partially effective genetic control may have taken place. Both examples are, in my opinion, better interpreted as aberrant differential deposition of melanistic pigment under inadequate genetic control rather than postulated hybridization.

Ringers are in a better position than other ornithological fieldworkers to determine how varied the clearly differentiated deposition of black pigment in this kingfisher is, as they can make precise observations on recaptures over a period of time and, in the case of marked birds, can also supplement these data by field observations. In her location Dale Hanmer will probably be in a better position than the rest of us to solve this interesting problem particularly if, as seems likely, she has a higher proportion of aberrancy in her Woodland Kingfisher population.

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LONGEVITY FROM RETRAPS CONTINUED

D.B. Hanmer

In Hanmer (1981) I listed 117 birds caught at Nchalo, Malaŵi (16 16S; 34 55E) which were known to be over four years old. Almost two years later, in July 1983, there were 115 birds of 45 species which were known to be six or more years old, plus a further 69 (including another 16 species - Table 1 opposite) which were five years old or more. In Table 2 (page 59), ages are given to the nearest half year, taking into account the month of ringing and recapture and the apparent age at ringing. Of the 115 birds, 86 were seven or more, 44 eight or more, 21 nine or more and 9 ten or more years old. All the oldest birds were weavers or bishops, but among the nine-year-olds were three bulbuls, a warbler and a flycatcher. There was a greater variety of species in the eight-year-old group; a dove, a nightjar, four bulbuls, three warblers, a shrike, two sunbirds, a sparrow and a canary, as well as nine weavers or bishops. The five-, six- and seven-year-old groups were equally varied.

Winterbottom (1982) suggested that birds of thick bush are more likely to reach four years of age than those which live in open areas, but Table 2 suggests otherwise. Admittedly more weavers and bishops than bush birds have been ringed at Nchalo, but even so, few individuals of bush species were recaught during 1981/1982 or 1982/1983, more than four years after ringing, despite fairly intensive netting in bush or thicket. This may be due to trap-shyness. Weavers and bishops, particularly in the off-season, move about in big flocks and may not individually be looking where they are going, whereas a thicket bird probably knows where the nets are and avoids them where possible.

The capture of several Yellow Weavers year after year is interesting, as this species does not nest anywhere near the trapping area and these birds have only been caught in the off-season.