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IRIS COLOURS IN AGEING AND SEXING SOUTH AFRICAN *PLOCEUS* WEAVERS

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Eyes in *Ploceus* weavers are often brightly coloured, particularly red or whitish, while weavers in the other genera (at least in South Africa) generally have brown or chestnut (reddish-brown) eyes in all age and sex classes (Craig 2010). Craig & Hulley (2004) showed that globally in weavers the distribution of eye colour is 78% brown, 21% pale, and 10% red. Young weavers and some females have brown eyes. In species with coloured irises the juveniles have a brown iris, which changes to become bright-coloured (Craig & Hulley 2004) in males and some females. Eye colour for males and females in the non-breeding season, when weavers are more difficult to sex, are often not explicitly given in standard texts.

Eye colour may be useful in ageing and sexing weavers and results based on my own ringing records and the literature are presented here. The nine species of *Ploceus* found in South Africa are Dark-backed Weaver *Ploceus bicolor*, Spectacled Weaver *Ploceus ocularis*, Lesser Masked Weaver *Ploceus intermedius*, Village Weaver *Ploceus cucullatus*, Cape Weaver *Ploceus capensis*, Yellow Weaver *Ploceus subaureus*, Golden Weaver *Ploceus xanthops*, Southern Brown-throated Weaver *Ploceus xanthopterus*, and Southern Masked Weaver *Ploceus velatus*.

Methods

Weavers were caught in mist-nets and ringed, or processed as retraps. Adult male weavers in full breeding plumage and females with brood patches were recorded as definite adult males and females respectively. The wing measurements of definite males and

females, with plumage characteristics, were used to help age and sex other birds. Eye colour was often recorded and these records were analysed by species. Usual eye colours were not always recorded, e.g. adult males in breeding plumage. Winter and summer months were determined by using breeding seasons for individual species in Hockey et al. (2005). Most data are from the Western Cape and KwaZulu-Natal.

Results and Discussion

Dark-backed Weaver adults have a brown eye (n=8), as do juveniles (n=2). The remaining eight *Ploceus* species in South Africa may have pale eyes (four species) or reddish eyes (four species) and these species are discussed below (Fig 1-2, Table 1).

801 Golden Weaver (Fig. 1a)

Adult males had pale eyes (white, cream) in summer (Sep-Mar, 1 male) and winter (n=1). **Adult females** had pale eyes (white, cream) in summer (Sep-Mar, n=1) and winter (n=1). **Juveniles** had dark brown eyes (n=2).

The sample sizes are small but Golden Weavers probably have pale eyes in all adult plumages. The literature is not explicit but implies that this is the case (e.g. Craig 2010).

799 Cape Weaver (Fig. 1b)

Adult males (n=209) in full breeding plumage had pale eyes (white, cream, pink). Of these, five males had pale eyes with speckles. In winter (Jan-June) all adult males in the Western Cape had pale eyes (cream or white, n=90; grey or marbled eyes, n=3). In the Western Cape, of 176 **females** with brood patches, 143 had brown or light brown eyes, and 33 (19%) had pale eyes that were cream or grey, speckled brown and pale, or brown with pale edges. Of 240 females in the Western Cape in winter (Jan-June), 232 had brown eyes (mid or light or dark brown), and eight (3%) had pale or speckled eyes. **Juveniles** (n=197) usually had brown eyes, initially dark brown but becoming lighter with age; 54 had eyes that were grey, ivory, whitish,



pale, or cream. This indicated that birds less than 6 months old already start obtaining paler eyes. First year birds (n=567) had brown (various shades) or pale (cream or white) eyes. First year birds with longer wings had pale eyes, and were sexed as immature males.

Adult male Cape Weavers have pale eyes, although in a few birds the eyes may be partially pale. Adult females usually have brown eyes, but 19% have pale eyes in summer and thus eye colour alone cannot be used to sex this species (contra Maclean 1985). This was confirmed by dissection of 12 birds (Barnard 1987). In winter most females have brown eyes while adult and immature males have pale eyes.

791 Spectacled Weaver (Fig. 1c)

Adult males, distinguished by a black bib, had pale eyes (white, cream, beige, light yellow, or cream with outer edge brownish) in summer (Sep-Feb, 5 males) and winter (n=7). **Adult females** had pale eyes (cream, pale, buff, greyish, light yellow, beige, ivory) in summer (Sep-Feb, 12 females) and winter (n=6). Six of the summer females had a brood patch. **Juveniles and immatures** had dark brown, brown, grey or ivory eyes (n=12). Birds with paler eyes appear to be older but do not yet have the black bills of adults.

Spectacled Weavers have pale eyes in all adult plumages.

792 Lesser Masked Weaver (Fig. 1d)

Adult males in full breeding plumage had pale eyes (mostly ivory, or light green grey) in summer (Oct-Feb, 12 males) and winter (eye beige-grey or pale, n=2). **Adult females** had pale eyes (mostly ivory, green or grey) in summer (Sep-Feb, n=13). Eleven of the summer females had a brood patch. No adult females were caught in winter in South Africa, but 20 birds were handled in coastal Kenya in their non-breeding season. These all had pale eyes (cream, grey, yellowish, white). Some may have been young birds but wing measurements (compared to Fry & Keith 2004) showed that adults were sampled. Although this is a different race (*intermedius*) to the South African race (*cabanisii*), this suggests that this species had

pale eyes throughout the year in both sexes. **Juveniles and immatures** had eyes brown (n=3).

The Lesser Masked Weaver has pale eyes in summer in both sexes. The eye colour in winter is less clear, though the above data indicates that eyes may be pale year round in adults. Most authors give the eye colour of males as pale and do not mention females in winter (e.g. Craig 2010). Zimmerman et al. (2001, East Africa) notes that the eye is cream or pale yellow in all adult plumages, while Clancey (1964) states that females have brown eyes and Newman & Solomon (1994) give pale yellow or brown eyes for females.

800 Yellow Weaver (Fig. 2a)

Adult males had red eyes in summer (n=11). An additional 39 males were noted as full breeding plumage without giving eye colour – any other eye colour would have been noted, however. In winter (Mar-Aug) five males had red or dull red eyes. The eyes of 58 **females** with brood patches were brown (n=44), red-brown (n=11), reddish (n=2) and brown with the outer edge reddish (n=1). In winter (Mar-Aug) 18 females were handled in June and two had red-brown eyes and the rest brown. **Juveniles** (n=34) had brown or dark brown eyes, but two males had reddish eyes in June, suggesting that some juvenile males obtain red eyes before their first year. First year birds had mostly chestnut or reddish eyes (n=13) while three had brown eyes – most of these were classed as first year males.

Males have a red eye in summer and a red or dull red eye in winter. Females usually have brown eyes but a few have red-brown eyes in any season. Craig (2010) notes that the eye of breeding males may have a paler yellow inner ring, and gives female eyes as dark brown but in winter as deep reddish-brown.

802 Southern Brown-throated Weaver (Fig. 2b)

Adult males in full breeding plumage had a red-brown eye in summer (n=6). A male in winter (Jan-Sep) had a dark eye. **Females** with brood patches had brown eyes (n=6). I have no winter records. **Juveniles and immatures** had brown or dark brown eyes (n=6).



Males have a red-brown or chestnut eye in summer and probably brown (or red-brown) in winter. Females have brown eyes. Hanmer (1984b) gives eye colour in males (from 1.5 y) as red-brown, and females (from 1.5 y) as bright brown. Hanmer (1984a) summarises eye colour as follows: juveniles dull brown, adult females bright brown, immature and adult males reddish brown. Craig (2010) does not specify eye colour in winter for this species.

797 Village Weaver (Fig. 2c)

Adult males had red eyes in summer (n=94). Three adult males ringed in summer and retrapped in winter were dull-plumaged with red eyes. A further 42 males caught in winter (Mar-July) had chestnut eyes in four birds and the rest had red or dull red eyes (90%) - these may have included immature males. **Females** with brood patches usually had red eyes – birds with brown or red-brown eyes appeared to be first year females. Of 69 females with brood patches, two had the eye brown and three red-brown or chestnut, and the rest (93%) red or dull red. In winter (March-July) eight females were handled and six had red or reddish eyes (75%); one with a brown eye may have been a young bird. No adults with brood patches were retrapped in winter. **Juveniles** all had brown eyes (n=40). Immatures usually had eyes brown and sometimes reddish.

The Village Weaver adult male has a red eye in summer. In winter males appear to retain red eyes, although the intensity may be less than in summer. Breeding females may have a reddish or red eye (93%), and those with browner eyes are probably first year birds. In winter females often have red or reddish eyes (75%), those with browner eyes possibly being first year birds. This is confirmed by Fry & Keith (2004) who give eye colour as brown in second-year females (which can breed), and red by their second breeding season. Immatures resemble non-breeding females, with eyes brown in females, and brown to reddish-orange in males (Fry & Keith 2004).

803 Southern Masked Weaver (Fig. 2d)

Adult males had bright red, or sometimes dull red, eyes in summer (n=17). An additional 232 males were marked as full breeding

plumage without recording eye colour but any non-red eyes would have been noted. In winter males had red eyes, although the intensity was often less than in summer. Fifty-two birds marked as adult males were handled in different provinces in all months from March to June – they were dull plumaged and had red or sometimes dull red eyes. This implied that adult males do not have brown eyes in winter although it is possible that some smaller dull, brown-eyed birds were sexed as females in winter – large males were sexed on wing and all had red or reddish eyes. Four males ringed in full breeding plumage and later retrapped in winter were dull-plumaged but with red eyes – eye could become brown for a short while in winter but there is no evidence of this. **Females** with brood patches were classified into the following categories: brown or dark brown (n=67), red-brown or chestnut (n=6), and red (red, dull red/reddish/slightly red) (n=30) (29%). In winter (Mar-June) females had brown eyes (n=59) and one female had red eyes (retrap BC99959). Recently fledged **Juveniles** had dark brown eyes (n=14). From October to March all juveniles had dark brown or brown eyes (n=50), and this changed to a lighter brown with older juveniles. From April some first year birds started obtaining reddish eyes.

Breeding males have a bright red or sometimes dull red eye in summer. In winter males appear to retain red eyes, although the intensity may be less than in summer. Rowan (1964) notes that some males retain the red eye for much, perhaps all, of the year. Tarboton (1965) noted a ringed male with a “milky” red-orange eye in winter and deep “clear” red eye in summer. Some (29%) breeding females have a reddish or red eye. Care thus needs to be taken to not sex these adult females as immature males by checking for brood patch and wing length.

Conclusion

Knowing the eye colours of all age and sex groups can prevent errors in ageing and sexing weavers in the hand by ringers. For all eight *Ploceus* species studied here, adult males have coloured eyes in summer and in winter, although they may be less bright in winter



(more data is needed for Southern Brown-throated Weavers in winter). Adult females of Golden, Spectacled and Lesser Masked Weavers appear to have pale eyes in adults of both sexes year round. In the other species, varying proportions of the adult females have pale or red eyes in summer, and even less in winter (Table 1). Juveniles have dark brown eyes in all species and in some species this colour lightens after several months in males.

Eye colours in South African *Ploceus* weavers are thus unreliable for ageing and sexing.

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Figure 1 – Ploceus weaver, males with *white* eyes



a. Golden Weaver – male and female



b. Cape Weaver – male and female

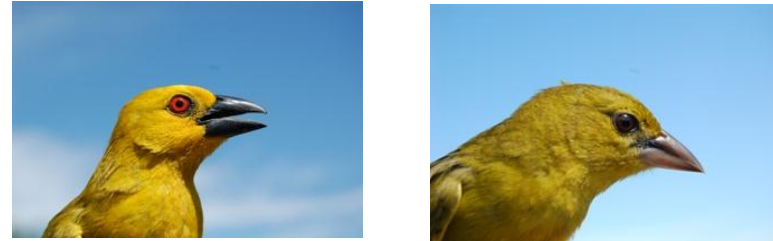


c. Spectacled Weaver – male and female

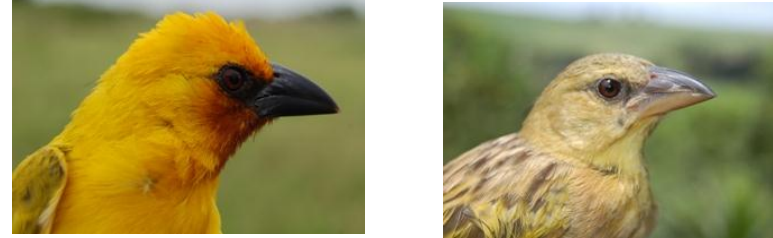


d. Lesser Masked Weaver – male and female

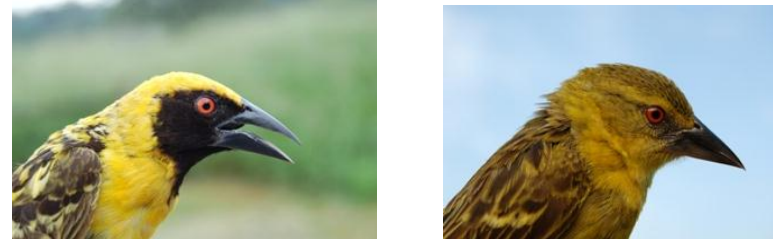
Figure 2 – Ploceus weavers, males with *red* eyes



a. Yellow Weaver – male and female



b. Southern Brown-throated Weaver – male and female



c. Village Weaver – male and female



d. Southern Masked Weaver – male and female



Table 1. Iris colours of adult South African *Ploceus* species (Dark-backed Weaver is excluded as the iris is brown in both sexes) (sample sizes are listed in brackets)

Species	Adult male breeding	Adult male Non-breeding	Adult female breeding	Adult female non-breeding
Golden Weaver	100% pale (1)	100% pale (1)	100% pale (1)	100% pale (1)
Cape Weaver	100% pale (209)	100% pale (93)	19% pale or pale & brown (176)	3% pale or speckled (240)
Spectacled Weaver	100% pale (5)	100% pale (7)	100% pale (12)	100% pale (6)
Lesser Masked Weaver	100% pale (12)	100% pale (2)	100% pale (13)	100% pale (0)
Yellow Weaver	100% red (40)	100% red or dull red (5)	24% red-brown (58)	11% red-brown (18)
Southern Brown-throated Weaver	100% red-brown (6)	0% red-brown (1)	0% red-brown (6)	0% red-brown (0)
Village Weaver	100% red (94)	100% red or dull red (42)	93% red (69)	>75% red (8)
Southern Masked Weaver	100% red (249)	100% red or dull red (52)	29% reddish (103)	<1% red (59)