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Nesting by dark-bibbed female Beautiful Long-tailed Sunbirds *Cinnyris pulchellus* and occurrence of dark bibs in both sexes of Beautiful Long-tailed and Gorgeous Sunbirds *C. melanogastrus*

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Summary.—Observations on nesting Beautiful Long-tailed Sunbirds *Cinnyris pulchellus* in The Gambia revealed that some females have dark or partially dark bibs, contrary to most accounts in the literature. Furthermore, all fledglings seen in The Gambia also had dark bibs and some males in eclipse plumage or lacking tail-streamers engaged in breeding activity. The conclusion that some adult female *C. pulchellus* have dark bibs and that some, probably all, juveniles have dark bibs was confirmed from museum specimens. It is further demonstrated, based on specimens, that some adult females and juveniles of Gorgeous Sunbird *C. melanogastrus* also have dark bibs.

Beautiful Long-tailed Sunbird *Cinnyris pulchellus* is a widespread species occurring in savanna and Sahelian habitats from Senegal in West Africa to Eritrea in the east, reaching south into parts of Kenya, Uganda and Democratic Republic of the Congo. A close relative, formerly considered a subspecies of *C. pulchellus*, is Gorgeous Sunbird *C. melanogastrus* found in west and central Kenya and parts of Tanzania. Most textbooks describe the black bib on the throats of Beautiful and Gorgeous Sunbirds as characteristic of juvenile and immature males (e.g. Bannerman 1948, the text but not the plates [Figs 10b and 10c of Pl. 42 are transposed] in Barlow *et al*. 1997, Cheke & Mann, 2001, 2008), with females lacking such markings being plain-throated, but sometimes having a yellow wash. An exception is Fry *et al*. (2000) who stated 'juvenile like adult female but with chin and throat dusky grey', but this account did not make it explicit that the remark applied to both sexes. It was therefore of interest that between 2010 and 2019 CRB observed that all fledglings from many successful nests of *C. pulchellus* in his garden and vicinity at Brusubi (13.3925°N, 16.7545°W), in the coastal Western Region of The Gambia, were dark-bibbed, this being the standard feature on pulli and fledglings, and apparently also the case at other sites in The Gambia.

In February 2014 CRB observed a dark-bibbed female, accompanied by a male lacking any tail-streamers but otherwise in full breeding plumage, feeding and attending a fledgling. Then on 15 March 2018 he observed and photographed a dark-bibbed female, albeit with a pale-centred throat, carrying nesting material. When this was reported to CFM & RAC they initially surmised that helpers of various ages were involved. CRB's rejection of this possibility prompted RAC & CFM to examine specimens of both *C. pulchellus* and *C. melanogastrus* at the Natural History Museum, Tring (NHMUK), to re-examine the occurrence of dark-bibbed plumages in these species. Here we describe some breeding observations and the results of our specimen examination, and conclude that (1) some or all of both sexes of fledglings / juveniles of *C. pulchellus* and *C. melanogastrus* have dark bibs; (2) some adult females of *C. pulchellus* retain the bib even when nestbuilding, incubating

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and feeding young, and (3) male *C. pulchellus* in breeding plumage without streamers or in eclipse plumage are sometimes involved in breeding activities.

Nesting by *Cinnyris pulchellus* at Brusubi

On 26 February 2014 CRB noted a very recently fledged *C. pulchellus* being fed by a pair of colour-ringed, apparently adult, birds in a *Bougainvillea* hedgerow bordering a road. The adult male (colour-ringed with a single yellow 7, when it had full-grown streamers, on 22 October 2013; Fig. 1.) was in full breeding plumage but lacked tail-streamers and the female had a dark bib, which it also had when initially trapped almost one year earlier (colour-ringed single green on 11 April 2013; Fig. 2). Observations were made for a week and, as both presumed adults were colour-ringed, it was possible to confirm that these were the only birds feeding the single fledgling, which also had a dark bib, thus the possibility of attendant helpers in juvenile plumage was eliminated. Fig. 3 illustrates the dark bib on another recently fledged juvenile but of unknown sex.

On 15 March 2018, during a nesting effort in the same garden an apparently adult female with a black bib, but with a pale-centred throat, was photographed collecting nesting material during multiple visits to leaf litter in a flower pot (Fig. 4). On 12 January 2019 CRB observed a female with a dark bib collecting and carrying away bark fibres from an *Acacia* sp. on a number of visits to the tree's bole at Bantakunku Beach (13.3405°N, 16.8123°W) coastal Gambia, but no nest was located.

Although the bird in Fig. 1 may have simply just lost its streamers, there is other circumstantial evidence that males that are not in full breeding plumage engage in breeding activity. For example, on 27 June 2019 CRB observed a male in almost full eclipse plumage without tail-streamers that was in full song, and he has also seen a male in three-quarters eclipse plumage visiting a nest and displaying to a female.

Museum specimens

Adult female *C. pulchellus* and *C. melanogastrus*.—Fig. 5 shows specimens of adult female *C. pulchellus* from which it is clear that although some females have unmarked throats, the two in the centre of the image have narrow and broad expanses of black on their throats, respectively. All are labelled as females, with NHMUK 1930.3.4.220 reported as containing eggs and having a brood patch. Fig. 6 illustrates two additional black-throated females. There are similar specimens of female *C. melanogastrus*, including one collected by R. E. Moreau (Fig. 7). However, presumably in the belief that all birds with black throats must be males, someone has annotated the label of this bird 'young male'. A similar annotation is present on the labels of black-throated birds claimed as being female by their collectors, including on that of NHMUK 1911.10.16.189 (collected by G. Blaine) and a '?' has been inserted in blue ink ahead of the female symbol on NHMUK 1964.15.1 (collected by C. H. Fry, apparently the only author to suggest that both sexes could have dark throats). This raises the issue of whether some or all of the black-throated birds, claimed as being female by their collectors, were perhaps incorrectly sexed. However, NHMUK 1940.12.4.27 (Fig. 8), collected on 24 June 1939 south-west of Sokoto, Nigeria, which has some black on the throat, but not an extensive amount, was collected at its nest by W. Serle who reported that it had enlarged ovaries. A similar specimen (NHMUK 1926.8.8.350) with a slightly darker throat was collected by G. L. Bates north of Rei Buba, Cameroon, at an altitude of *c*.400 m on 6 April 1925, and labelled as having small eggs (Fig. 8).

Juvenile *C. pulchellus* and *C. melanogastrus*.—Confirmation that some juvenile females of both species have black throats is provided by the specimens illustrated in Fig. 9.

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Figure 1. Breeding male Beautiful Long-tailed Sunbird *Cinnyris pulchellus* without tail-streamers, Brusubi, The Gambia, 11 March 2014 (Dave Montreuil)

Figure 2. Black-bibbed female Beautiful Long-tailed Sunbird *Cinnyris pulchellus* seen nesting, Brusubi, The Gambia, 11 March 2014 (Dave Montreuil)

Figure 3. A very recently fledged black-bibbed Beautiful Long-tailed Sunbird *Cinnyris pulchellus*, Brusubi, The Gambia, 14 February 2016 (C. R. Barlow)

Figure 4. Black-bibbed, but with pale centre to the throat, female Beautiful Long-tailed Sunbird *Cinnyris pulchellus* with nest material, Brusubi, The Gambia, 15 March 2018 (C. R. Barlow).

The label for NHMUK 1930.3.4.219, collected by G. L. Bates, includes the note 'ovary small'. Many similar specimens labelled as juveniles or immatures of both sexes with extensive black throats are also present in the NHMUK collection.

Discussion

As only female *C. pulchellus* are involved in nestbuilding, there is no doubt from the above observations made by CRB (see Figs. 2 and 4) that some females possess dark feathers on their throats. The bird in Fig. 2 was undoubtedly more than one year old, being probably at least 15 months old, and, given that it is unlikely that immatures would build nests, we consider that there is little doubt that some adult females have dark bibs or streaks on their

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Figure 5. Female Beautiful Long-tailed Sunbird *Cinnyris pulchellus* specimens, left to right: (1) NHMUK 1929.2.18.377, Bakkendik, North Bank Division, The Gambia, 22 December 1928, coll. W. P. Lowe; (2) NHMUK 1939.12.9.3176, near Thiès, northern Senegal, 29 June 1907, coll. F. W. Riggenbach; (3) NHMUK 1930.3.4.221, Say, River Niger ('Upper Volta' but now in Niger), 21 April 1928, coll. G. L. Bates; (4) NHMUK 1878.10.26.86, Daranka (? = Daranka Island, south-west of Banjul), The Gambia; (5) NHMUK 1913.7.6.24. George Valley, Freetown, Sierra Leone, 12 April 1911, coll. Major Kelsall; (6) NHMUK 1930.3.4.220, east of Kulikoro, French Sudan (now Mali), 18 June 1928, coll. G. L. Bates (R. A. Cheke, © Natural History Museum, London)

Figure 6. Two black-throated female Beautiful Long-tailed Sunbirds *Cinnyris pulchellus*, left: NHMUK 1902.1.20.218, Darella Aila, southern Abyssinia (Ethiopia), 10 December 1900, coll. A. E. Pease; right: NHMUK 1912.10.15.1219, Mensi Wandu, southern Abyssinia (Ethiopia), 18 August 1905, coll. W. N. McMillan / P. C. Zaphiro (R. A. Cheke, © Natural History Museum, London)

Figure 7. Female Gorgeous Sunbird *Cinnyris melanogastrus*, NHMUK 1936.7.2.247, Manyara Plain, north end of Lake Manyara, Tanzania, 2 August 1936, coll. R. E. Moreau (R. A. Cheke, © Natural History Museum, London)

Figure 8. Female Beautiful Long-tailed Sunbirds *Cinnyris pulchellus*, above: NHMUK 1940.12.4.27, shot at nest with enlarged ovaries, south-west of Sokoto, Nigeria, 24 June 1939, coll. W. Serle; below: NHMUK 1926.8.8.350, female with small eggs, north of Rei Buba, Cameroon, 6 April 1925, coll. G. L. Bates (R. A. Cheke, © Natural History Museum, London)

throats. This conclusion is supported by museum specimens (Figs. 5, 6 and 8) and is also the case for *C. melanogastrus* (Fig. 7). However, some females do have completely pale throats, sometimes washed yellow. There is also evidence that males that are not in full breeding plumage may breed or perform activities associated with breeding such as singing, displaying or visiting nests. It is also clear that some juveniles of both sexes and both species may have dark throats but, as yet, we are unsure if this is always true.

Our findings contradict most accounts in the literature. Bannerman (1948) stated of *C. pulchellus* that the 'adult female differs in every particular from the male and lacks any

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Figure 9. Specimens claimed as female and described as immature, left: Gorgeous Sunbird *Cinnyris melanogastrus*, NHMUK 1935.10.16, Rusinga Island, Kenya, 14 February 1935, Leakey / Bell coll., or juvenile, middle: Beautiful Long-tailed Sunbird *C. pulchellus*, NHMUK 1930.3.4.219, above Yelwa, River Niger, Nigeria, 1 April 1928, coll. G. L. Bates, and right: NHMUK 1922.12.8.1319, Zalingei, Darfur, Sudan, 29 October 1921, coll. Admiral H. Lynes (R. A. Cheke, © Natural History Museum, London)

metallic colour, the whole plumage being dull' and continues subsequently 'Chin and throat whitish, the rest of the undersurface washed more or less strongly with yellow'. He described immature males as resembling 'the adult female in having upperparts brown but have the throat blackish…' and that immature females are distinguished from immature males 'by not having any dusky black on the chin and throat which is white'. It is probable that these descriptions led to the widespread assumption that only males ever have dark throats. Indeed, it is possible that the female-labelled specimens at NHMUK that were 'corrected' to being assigned to the male sex were so re-labelled by Bannerman. Given this salutary lesson in the dangers of following the literature uncritically (although the account in Fry *et al*. 2000 is an exception, implicitly but not explicitly), we now wish to re-examine the situation in other sunbirds, such as other species of *Cinnyris* with dark throats and *Chalcomitra* spp. that are similarly endowed, and to follow-up whether all or only some juvenile *C. pulchellus* have dark throats, with The Gambia being an ideal location for further such field work.

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