

## SHORT COMMUNICATIONS

### SONG AND DISPLAY OF THE PLUM-HEADED FINCH

The vocalizations and displays of the Estrildidae (waxbills, mannikins and grassfinches) are generally fixed patterns, stereotyped to a point where similar performances might be expected of each individual irrespective of circumstances. This has made them particularly useful in comparative studies of behaviour based on captive birds. Recent observations on a pair of Plum-headed Finches *Aidemosyne modesta* are not, however, easy to reconcile with earlier published statements and suggest that there may be some exceptions or errors of observation. They are therefore offered here in the hope that they may inspire a closer observation of wild birds to determine the typical forms of behaviour.

Hall (1962) in a comparative study of estrildine song lists the Plum-headed Finch with the African *Lonchura* (*Spermestes*) species and the Green Avadavat *Amandava formosa* as having a song that is 'virtually inaudible at five feet'. Immelmann (1965) states that the song is low and 'has the almost voiceless characteristics of the closely related *Lonchura* species. It starts with a series of high-pitched, almost inaudible, sounds and continues with chirping and gargling trills, becoming louder and more flute-like towards the end'.

The pair that I studied was kept in a small aviary or large cage in a room, and I could observe behaviour at a range of 2-3 m. The birds were bred in captivity and it might be argued that this could have produced atypical song. The song of the male was a simple one. It was uttered frequently, usually when the male was sitting alone, and also used in the stem-display. I could study it at close quarters and determine that no almost inaudible sounds were occurring. It consisted of a short series of a low-pitched, hoarse and throaty note, uttered rather softly, and immediately followed by one or two high-pitched and more musical piping notes. 'Rek-rek-rek-rek-rek, tsee, tsee' is a rendering of a typical phrase. The first note was most typically repeated five times, but could be repeated two to eight times. The other note was repeated from one to three times. This song was audible outside the room, certainly to a distance of about ten metres from the source, in an otherwise quiet situation, but possibly not much farther.

There was another type of vocalization heard on a few occasions when the male suddenly flew to the female and perched by her with the forehead feathers sleeked and its whole posture rigid and

intense, and uttered a very faint and rapid hoarse piping. I had the impression that on these occasions copulation would have followed if the female had been receptive, but when I witnessed it there was only some mandibulation with the bill-tips close together. Once the bills were momentarily interlocked several times, giving a superficial appearance of courtship feeding. This very subdued vocalization was also heard when both birds were at the nest together. It seems to be the only call that can be reconciled with Hall's description.

Immelmann states that in the epigamic display of the species there is some individual variation, but that during the stem-display the bill is kept horizontal or pointed downwards. This would seem to be only partly true. When, several times, I saw the display the male seized a long grass-stem or piece of weed by its extreme tip in the bill-tip so that it hung down. It flew up to a perch settling with bill pointing steeply upwards in a fashion typical of some other estrildine species, and began to display with well-spaced and deliberate upward jerks. If the female then settled nearby the male turned towards her and lowered his bill until it was level with hers, then performed the slow upward jerks in this posture; which is probably that to which Immelmann refers. This display was accompanied by the song described above, and although the performance is often regarded as only pair-bonding in function it was followed once by copulation.

Display was accompanied by sleeking of the feathers of the forehead to give the triangular head-shape typical of many displaying estrildines. The body-plumage was not so much fluffed as inflated, so that the onlooker was not conscious of erection of feathers, but that the male looked suddenly rather bull-necked, and a large expanse of striped flank was visible below the closed wings. The tail tended to be laterally angled towards the bird at which display was directed. In approaching the female the male tended to lean forward with head raised a little, staring intently at her. Sometimes I saw him approach her along a perch in this posture with feathers fluffed, at each hop changing the position of his feet from one side of the perch to the other so that he advanced in a series of slow half-pivots, finishing each half-turned toward the female and exposing an area of patterned flanks that merged with the spotted wing-coverts and patterned rump, with the tail swung beyond its normal position so

that it was bent towards the female at the end of each hop. This is similar to the approach-display described by Morris (1954) for the Zebra Finch *Poephila guttata*.

#### REFERENCES

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### THE FUNCTIONS OF THE BILL OF THE TOOTH-BILLED BOWERBIRD

It has been often proposed and generally accepted that the peculiar toothed bill of the Tooth-billed Bowerbird *Scenopoeetes dentirostris* is 'an adaptation related solely to the habit of sawing leaf petioles in two, preparatory to the daily decoration of its display ground' (e.g. Marshall 1954).

On 25 July 1973 a Tooth-billed Bowerbird was observed for fifteen minutes in the canopy of the extensive closed forest on Paluma Range near Mt Spec. The bird, which called once although no other bird was detected nearby, was quickly and deftly eating the margins of leaves within the canopy of a boxwood (apparently *Planchonella obovata*, the Northern Yellow Boxwood\*) (see Fig. 1 for damage).

The bird was subsequently collected and found to be an adult male in non-breeding state (testes: left, 2.8 mm; right, 3.1 mm) and with remiges at the approximate mid-stage of moulting. Its weight (176 g) reflected good condition, well within the range of 143-198 g (mean 170g) in twelve birds taken under other circumstances. The crop contained a few fragments of leaves and the gizzard was filled with parts of leaves only.

Tooth-billed Bowerbirds are considered to be largely frugivorous, varying this principal diet with snails and insects (Marshall 1951). The stomachs of seven birds examined from Mt Spec were found to contain only indeterminable leaf material in three birds collected during July and August and some *Elaeocarpus* spp among other fruit material in four birds collected in November, January, February and March. The birds have also been seen to take soft fruits such as oranges, lemons and mulberries during summer when they are easily seen and fruits and insects are more abundant. Such observations are clearly more reliable for this species because soft fruits cannot be detected in stomachs.

\* All botanical identifications were by officers of Botany Branch, Queensland Department of Primary Industries.

Birds do not commonly pluck whole green leaves. Storks and herons (Allen 1939) and birds of prey (Brown and Amadon 1968) do so frequently for decorating their nests, but have no particular adaptation of the bill. Eating of leaves is even less common but nevertheless species of neotropical plantcutters *Phytotoma* do so, and their bills are serrated (Thomson 1964). The purpose of well-developed toothed bills in other species is questionable: the African Tooth-billed Barbet *Lybius bidentatus*, for example, eats 'fruit, especially bananas, berries, etc.' (Mackworth-Praed and Grant 1970).

Goodwin (1964), discussing the Capitonidae, suggested 'that the notched bill is correlated with significant ecological differences that minimize competition between all forms with notched and all those with un-notched bills'. Tooth-billed Bowerbirds occur throughout their range at all times of the year in close association with three other ptilonorhynchids—the Catbird *Ailuroedus crassirostris*, Golden Bowerbird *Prionodura newtoniana*, and Satin Bowerbird *Ptilonorhynchus violaceus* (Lavery 1968); non-breeding *S. dentirostris* have been collected thus in every month from May to September. At Mt Spec the stomachs of six Catbirds, which are common, mostly contained fruits of Blueberry Ash *Elaeocarpus*

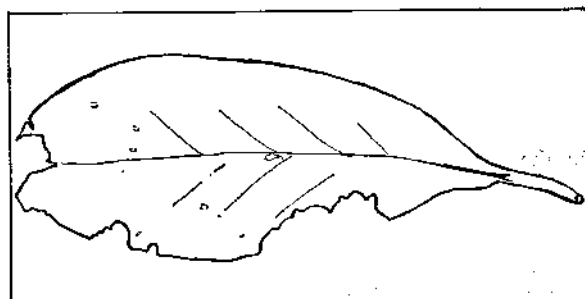


Figure 1. Leaf of *Planchonella obovata* showing damage by a feeding Tooth-billed Bowerbird. (Tracing from photograph.)