

Gray-Headed Silverbill

(*Odontospiza caniceps*)

COURTSHIP DISPLAYS AND THE TAXONOMIC POSITIONS

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Until the study of Guttinger (1970), the Grey-headed Silverbill (*Odontospiza [Lonchura] caniceps*) was one of the least known of the mannikins (Lonchuridae). Between January 1971 and March 1972 I kept two wild caught pairs of these estrilids, as well as four males and two females which were hatched and raised in my home by Striated Finches (*Lonchura striata*). I made previously unreported observations on the behavior of these individuals. Some of these observations appear to be of taxonomic importance. In describing displays, the terms "inverted curtsey", "lateral pivoting", and "leap-frogging" used throughout this paper, are after Morris (1957).

Each breeding pair was kept alone in a cage measuring 22 in. x 18 in. x 21 in. When not breeding, they were kept in a cage 22 in. x 36 in. x 49.5 in. along with some other estrilids. The birds were colour-banded for individual recognition.

COURTSHIP DISPLAY

Guttinger (1970) describes the courtship display of this species as follows: The male grasps a grass stem by one end in the manner of many other estrilids. He flies before the female, then performs inverted curtsies accompanied by song. The inverted curtsey is a bobbing movement in which the main component is an upward thrust imparted by a straightening of the legs. The female then performs inverted curtsies in synchrony with the male, but without song or a grass stem. After a while, the male drops his grass stem, and turning his bill and tail in the direction of the female, sings his long song. The male's display is often accompanied by bowing (the "low twist posture" of Moynihan and Hall, 1954), which in turn often passes to displacement bill wiping. The above ceremony may also be initiated by the female, if she flies before the male and begins inverted curtsies. This display is infrequently, though regularly, performed during pair-formation and before the laying of the first egg. In contrast to most other estrilids, the inverted curtsey display of this mannikin has never been observed to lead to copulation. Frequently the display is followed by allopreening, or both partners feed. Guttinger (1970: 1052) has suggested that this display functions to stimulate and syn-

chronize mated pairs.

The display of my wild-trapped male Left-Yellow (LY) was as follows: With bill mandibulating and pointed at an angle skywards, head and tail turned towards the female, the belly slightly fluffed, LY would sing his long song. If the female changed perches, he would follow her, keeping the same posture and continuing to sing whenever he landed next to her. If she remained still, he would approach her in short hops, while still singing and posturing. Sometimes the female would respond with tail quivering in typical estrilid manner. Irrespective of the female's behavior, the male would often fly on her back, attempting to copulate. Usually he would leap-frog off. Only on one occasion did copulation ensue.

LY's display was similar to the second part of the display described by Guttinger (1970). The position and movements of the bill were similar to that seen in solitary song (Guttinger, *loc. cit.*), however, the lateral pivoting movements of the head were absent. Only on one occasion did LY perform inverted curtsies during courtship. Although there were always grass stems in the cage which LY utilized in nest-building, these were never used in display.

The display of my second wild trapped male, Left-White (LW), differed markedly from that of LY. His display may be divided into the following two parts: (i) the submissive courtship portion (terminology after Goodwin, 1965) and (ii) the inverted curtsey portion. The first display was usually followed by the second, although each could be performed without the other.

Submissive Courtship. In this display, the male crouched on a perch next to the female. The feathers of the belly were fluffed and covered most of the legs with only part of the toes showing. Its body was bent slightly away from the female. With head and sometimes the tail pointed in her direction, with bill wide open, and tongue protruding and moving back and forth, the male sang to her. Frequently, the male's wing distal to the female was flicked out and in very rapidly several times during singing (Fig. 1). A second male, Right-Black (RB), the offspring of

LW, was observed performing this display twice. This display is similar to that described for other estrilids, for example, the species of *Uraeginthus* (Goodwin, 1965). In the Red Avadavat (*Amandava amandava*), a similar display is given, but only to strange females (Kunkel, 1959; Goodwin, 1960).

Inverted Curtsey. After a period of singing in the crouched position, male LW erected himself. With bill still wide open, tongue still protruding and moving back and forth, head and tail pointed towards the female, and belly feathers slightly fluffed, the male performed inverted curtsies. At higher intensity the body was bent away from the female (Fig. 2) and inverted curtsies were alternated with lateral pivoting movements of the body. When performing inverted curtsies, the male slowly approached the female in a series of small hops. Sometimes he danced away from the female. Inverted curtsies were interspersed with bows and/or displacement bill wipes. Sometimes the male merely nodded at the female, probably an intention movement to bow (Morris, 1958). On a few occasions, double bows were observed, one bow followed immediately by another. As in submissive courtship display, the wing distal to the female was often flicked out and in very rapidly. On one occasion (19th February 1972) the wing was also quivered as in juvenile begging display (Guttinger, 1970).

The female sometimes responded with inverted curtsey displays. On rare occasions this was followed by tail quivering. Copulation was observed only twice (see below).

LW and LY's displays could be elicited by reintroducing their females to them after a short period of separation. When not breeding, LW would display to any strange conspecific, irrespective of its sex, when the latter was introduced into the cage holding him and his mate. When breeding, LW would ignore or attack strange conspecifics introduced into its breeding cage.

Three other males, offspring of LY, were observed performing stem displays as described by Guttinger (1970). These were never at high intensity, as observations were made when the birds were still juveniles.

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COPULATION

At 6:47 p.m. on 9th February 1971 a successful copulation was observed between male LY and his mate Right-Red (RR). I was sitting about 3 ft. from their breeding cage when I heard LY complete two songs. I looked up to see LY on RR's back, his wings fluttering rapidly and tail thrust under hers in the act of coition. After dismounting he flew back and forth between two perches placed 1½ ft. apart. He next flew beside the female, and both birds then engaged in displacement auto-preening. At 6:54 p.m. the same day LY performed the same display described earlier. He flew on his mate's back in an attempt to mount her but she did not respond. RR laid her first egg on 15th February 1971.

On 1st January 1972 male LW was observed performing high intensity display to his mate (unbanded). She solicited with tail quivering, her head was slightly upturned and bill wide open. The male leap-frogged over her back four times, but no copulation ensued.

A copulation was observed between the same pair on 12th February 1972. The male displayed at full intensity, and the female solicited copulation with the tail quivering, her head slightly upturned, and bill wide open. After leap-frogging off her back twice, the male finally mounted. He stood perched on her back with tail widely spread for a few seconds, during which time the female's tail was still quivering. He finally copulated with her. After he had dismounted and flown to another perch, the female was seen performing inverted curtsies. At 12 noon on 27th February 1972 LW displayed to his mate at high intensity and the female solicited with tail quivering. The male leap-frogged off her back once, then copulated with her. The female performed displacement bill wiping after coitus, and the male preened his belly.

DISCUSSION

There appears to be individual variation in the displays of Grey-headed Silverbills. Whereas inverted curtsies were always performed by LW, they were rare in LY's displays. Whereas stem displays were performed by Guttinger's birds and three of the four offspring hatched in my bird room, I could never induce LW or LY to use stems in their displays. Moreover, displaying with bill wide open and tongue wagging were observed only in two birds (LW and RB)

Individual variation of this degree is not unusual among the *Lonchurae*. In the Cherry Finch (*Aidemosyne modesta*), for example, males also have a stem display, followed by singing with bill wide open.

However, Immelmann (1965) informs us that: ". . .there is great individual variation in this species. Some males never use a piece of grass, others never sing with bill wide open. . . ."

Copulation has not hitherto been described for the Grey-headed Silverbill. It has been suggested that for the Grey-headed Silverbill and in forms of *Spermestes*, copulation takes place normally inside the nest (Guttinger 1970, Kunkel 1965). Kunkel (1965: 175) observed only one copulation for *Spermestes (Lonchura) bicolor*. However, Morris (1957) was of the opinion that with the Bronze Mannikins (*Spermestes [Lonchura] cucullata*) copulation on a branch was the usual method, suggesting that he must have observed this more than once. It may not be too unusual then, for the Grey-headed Silverbill to occasionally copulate on a branch in the usual estrildid manner. Indeed, several aviculturists (summarized in Immelmann *et al.* 1972, in press) have also observed tail quivering by female Grey-headed Silverbills in response to the courtship dance of the male. An alternative interpretation of these observations would be that this is an artifact of captivity (see Immelmann *et al.*, *loc. cit.*), that awaits verification by field study. It is noteworthy that the bill open, head up posture of one of my soliciting female Grey-headed Silverbills was also observed in Bronze Mannikins by Morris (1957). Females of the latter species, however, also protrude their tongue when soliciting. Morris (*loc. cit.*) considered these to be important components of the female's display, derived from the nest building elements of "mandibulating and scooping."

Derivation of Display Components. The submissive courtship display of the Grey-headed Silverbill is very likely derived from the begging display of the juvenile. The posture of the head (Figs. 1 and 2), the waving tongue and wide open bill are all found in the begging juvenile, which does not always twist its head in the more usual estrildid manner (Personal observation). Guttinger (1970) reported that the young Grey-headed Silverbills also quiver their wings when begging. Wing quivering is rare in estrildid finches, and has been described in *Aeginthia temporalis*, *Erythrura prasina* (Guttinger 1970, Immelmann 1965) and *Lagonosticta rubricata* (Goodwin, 1964). Friedmann (1960 : 25) reported that nestlings of *Estrilda subflava* "move one or sometimes both wings forward in a jerking, spasmodic gesture". My observations indicate that in begging juveniles of Grey-headed Silverbills the wing distal from the parent bird

with food is also often slightly extended. The flicking distal wing in the submissive courtship display of the Grey-headed Silverbill is probably an intention movement to extend and quiver that wing. This opinion was held by Goodwin (1965) who made similar observations on species of *Uraeginthus*. I have reported on one observation of a Grey-headed Silverbill quivering a wing during courtship.

Relationship to Spermestes. LW's complete display was similar in many respects to that of the Bronze Mannikin as described by Morris (1957). The Bronze Mannikin also begins its courtship dance with a crouched display, with the bill open, and the tongue protruding and moving. This is followed by an inverted curtsy display, and lateral pivoting when performed at higher intensity. Morris' birds also danced toward and away from the female, and leap-frogging was described. The similar postures of the soliciting females of the two species have been discussed. The differences between LW's displays and those of the Bronze Mannikin are that (i) LW's bill was pointed up whereas that of the Bronze Mannikin was pointed down. (ii) Wing flicks were absent from the display of the Bronze Mannikin. (iii) The tongue was moved more rapidly (quivered) in the Bronze Mannikin. (iv) Soliciting female Bronze Mannikins protruded their tongues.

Subsequent to Morris' (1957) study of the Bronze Mannikins, Kunkel (1959, 1965) and Guttinger (1970) have studied and compared courtship displays of all the forms of *Spermestes*. The last two authors both concluded that courtship displays of all forms of *Spermestes* are similar, but with quantitative differences with regard to the frequency of occurrence of the display components.

The Grey-headed Silverbill has been placed by some authors in the genus (or subgenus) *Euodice* along with the two Silverbills *Euodice (Lonchura) malabarica* and *E.(L.) cantans* (see review in Guttinger, 1970). Guttinger (1970; and personal observations) has shown that in a number of behavioral characters (vocalizations, fighting postures, copulation in the nest, absence of peering behavior) the Grey-headed Silverbill more closely resembles the African mannikins of the genus (or subgenus) *Spermestes*. My observations on the epigamic displays of LW and RB indicate that the courtship displays of the Grey-headed Silverbill, although variable, fall within the range of variation of that of species of *Spermestes*, lending support to Guttinger's conclusion of their close relationship.

The use of the vernacular "Grey-head-

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myth regarding tropical spiders, that are so large, they catch birds. He refers to the spiders of genus *Mygale* when he says, "Several and enormous species exist in Cuba [but] cannot possibly catch birds because it spins no net. . . and finally, because *Mygale* is in itself too inactive in its motions. . . to be able to get near a Humming-bird which, as far as I have seen, never perches except on branches." There are six pages dealing with spider lore and reflecting it to Humming-birds.

In another very interesting passage Martin relates how a female Mango Humming-bird, sitting upon two eggs, was captured with the nest. She hatched the eggs on shipboard during passage from Jamaica to England. The hen died shortly thereafter, but the two babies were delivered to London, where they survived about two months. Martin says that it is not possible to preserve Humming-birds in captivity. Fortunately, our modern technology has overcome many of the problems of Martin's time and it is now possible to rear some Humming-birds in aviaries.

He refers to the intelligence of the small birds saying, "... the intelligence of these tiny beings is manifested in their inquisitiveness; if struck at as they dart along. . . they will hover around the aggressor, peer closely into his face, or

examine the instrument designed for their capture."

Martin explains a theory that suggests that thickly insulated nests of the Humming-birds are designed to protect eggs and babies from the extreme static electricity often present in tropical thunder storms.

There are one hundred twenty seven pages of this marvelous commentary about Humming-birds. Some of it is fallacious. Some of it is extremely accurate. All of it is delightful.

If you ever have an opportunity to purchase or even examine this wonderful little book, by all means do so. The color plates alone are worth it, and even without the plates, the text is so original and engaging as to insure your reward. ■

SILVERBILL Cont'd from pg 23

ed Silverbill" for *Odontospiza (Lonchura) canicaps* would seem misleading, therefore, because it implies a close relationship to the Silverbills (*Euodice*), I propose the name "Pearl-headed Mannikin" for this distinctive estrildid, a name similar to the German "Perlhalsamadine".

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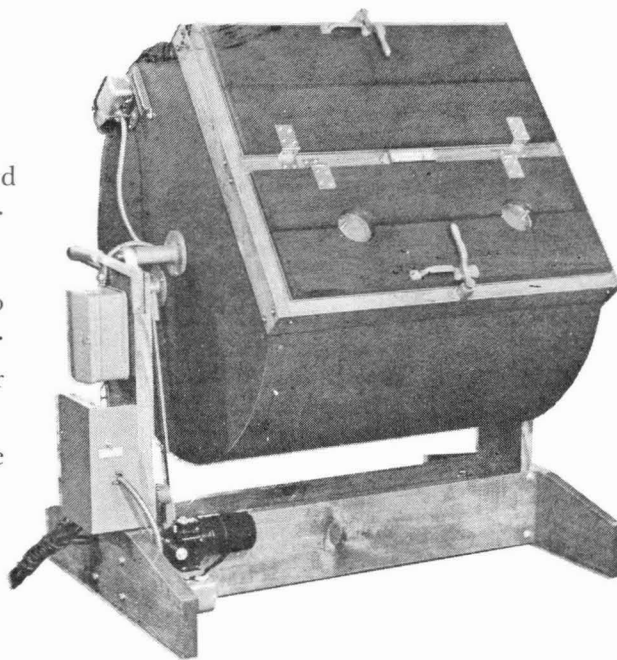
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