

SHORT COMMUNICATIONS

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HEAD-DOWN OR "PREENING INVITATION" DISPLAYS INVOLVING JUVENILE BROWN-HEADED COWBIRDS

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The head-down display of the Brown-headed Cowbird (*Molothrus ater*; Darley 1968, Rothstein 1977) was first described by Selander and La Rue (1961). They called it the "interspecific preening invitation display" because they observed that it was nearly always directed towards other species, which would frequently preen the displaying cowbird. Selander and La Rue ascribed an interspecific function to the display, and because the posture resembles displays known to communicate appeasement in other birds, they hypothesized that cowbirds use the display to appease potential hosts and facilitate approach to host nests. Field experiments by Robertson and Norman (1976) suggest that the display would function in the manner proposed by Selander and La Rue but we know of no evidence that cowbirds use the display in this manner despite numerous observations of potential hosts attacking cowbirds. Observations on captive cowbirds indicate, moreover, that the display has both inter- and intraspecific functions (Rothstein 1977). Here we describe three instances of head-down displays involving juvenile cowbirds, two of them intraspecific presentations. In two of these observations—of a wild bird in Kansas and of a captive bird by SIR—the juveniles performed head-down displays. Since intraspecific head-down displays are rarely seen in nature and displays involving juveniles seem to be uncommon, we hope that this note will stimulate others to report relevant observations.

During the late afternoon of 10 August 1979, PEL noticed two juvenile Brown-headed Cowbirds perched on a fence surrounding a garden area on the University of Kansas campus, Lawrence, Douglas County, Kansas. One of these young (identified as the "first") remained perched while the other bird ("second") was more active, moving from fence to ground and perching again on the fence about 20 cm away from the first bird. This second cowbird then stepped closer to the first bird with bowed head (head-down display). The first bird stepped closer and made one slow "peck" at the second's nape. This display presentation was interrupted after less than 30 s by the arrival of an adult Chipping Sparrow (*Spizella passerina*), which came to the ground below the cowbirds. Both young cowbirds flew to it and begged. One cowbird (apparently the first) was fed; the other flew off across a nearby road. The second cowbird was probably recently independent of its host. The first young was seen with a Chipping Sparrow initially on 5 August and last noticed 11 August in the same vicinity. When observed on 11 August, this cowbird was seen to catch and eat an insect on its own and then beg from the sparrow, which fed it. Since young cowbirds usually leave the nest at about 10 days of age and do not become completely independent of host care until 25-39 days old (Woodward and Woodward 1979), both of these juvenile cowbirds were judged to be slightly less than or about one month old.

As with this field observation, data on a captive cowbird also indicate that the head-down display appears at an early age. On 9 July 1976, SIR removed a female nestling Brown-headed Cowbird from a Hooded Oriole (*Icterus cucullatus*) nest in Goleta, Santa Barbara County, California. Starting on 13 July, the cowbird was caged with a young oriole removed from the same nest. On 22 July, a mounted Hermit Thrust (*Catharus guttatus*), prepared in a normal perching posture, was placed with the cowbird and oriole who were then 20 ± 1 and 19 ± 1 days old, respectively. The oriole occasionally pecked at the mount but usually fled from it. By contrast, when the mount was moved near her, the cowbird usually froze, raised her nape feathers and bowed her head slightly, clearly giving head-down displays. The cowbird did many such displays but on a few occasions she pecked at the mount or fled from it at its approach. On 23 July, the cowbird and the oriole's only response to the mount was to beg to it but the cowbird again did head-down displays when an 11-day-old Black-headed Grosbeak (*Phaeucticus melanocephalus*) was placed with it. This cowbird was the only one of about 15 hand-reared cowbirds observed to use the head-down display.

Our second field observation of a head-down display, by SIR, occurred on 10 July 1979, 0.8 km east of the Devil's Postpile National Monument in the Sierra Nevada of Madera County, California, at an elevation of 2,365 m at the Red's Meadow Pack Station (a series of horse corrals). Cowbirds in this area form large feeding concentrations at pack stations (Rothstein et al. 1980). At 08:42, 3 male, 2 female and 1 juvenile cowbird were seen foraging on the ground. After being flushed, the juvenile and nearly all of the adults flew to a nearby stump about 2 m high and the males began to sing. Within two minutes, the juvenile, with no apparent provocation, jumped on the back of a female who responded immediately by doing a head-up (or bill-tilt) display, a standard icterid threat gesture (Nero 1963). The two birds then walked side-by-side and after about 30 s the female directed a head-down display to the juvenile. Instantly, a male cowbird ran over and chased the female. The juvenile was observed on both subsequent visits to the pack station that day (at 10:42 and 12:50) and all evidence indicated that it was independent. It seemed to be fully grown with a normal length tail, but given the lateness of cowbird breeding in the Sierra (Rothstein, unpubl. data), it must have been less than 1.5 months old.

Most head-down displays by adult Brown-headed Cowbirds occur after the cowbird approaches or even chases the display recipient (Rothstein 1977, in press). In such situations, the display conforms more closely to threat than to appeasement (contrary to Selander and La Rue's interpretation) and additional information indicates that the display is motivated largely by aggression (Rothstein 1977, in press). The Kansas observation fits the interpretation of a threat function, as does the field observation in California. The display of the captive juvenile was unusual in that she displayed only when the grosbeak or mounted thrush approached her, in a context that suggests appeasement. Perhaps the display is sometimes given in the context of appeasement when it first develops in young birds but becomes limited to a threat function as individuals mature. Additional observations of displays involving juveniles and of displays occurring in nature may improve understanding of the function and ontogeny of this remarkable behavior.

Field observations by SIR were made while engaged

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OBSERVATIONS OF THE BEHAVIOR OF THE ZIGZAG HERON

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Reliable sight records of the Zigzag Heron (*Zebribus undulatus*) are said to be virtually nonexistent, and nothing has been recorded of the feeding, breeding or other habits of this species (Hancock and Elliot 1978). We therefore present our observations of an individual of this species and summarize several other recent sight records.

Robert Ridgely (pers. comm.) sighted a Zigzag Heron on the Rio La Torre, Madre de Dios, Peru, in October 1976. The bird was in a very small oxbow lake beginning to fill with water at the onset of the rainy season. The oxbow was completely shaded, with thick undergrowth around the edges. J. P. O'Neill (1969) collected a Zigzag Heron at Yarinachocha, Loreto, Peru; it was at the edge of a small pond (a low spot that filled in flood times), with the edge growing up in grasses (O'Neill, pers. comm.). D. L. Pearson (1975) collected one in Bolivia as it fed on the floor of primary forest. The relevant information on the two specimens, provided by J. P. O'Neill, is listed below.

LSUMZ 42681, Yarinachocha, Dpto. Loreto, Peru, ad. ♀, 24 Feb. 1965, ovary 10 × 5 mm, slightly enlarged; iris dark brown; bill dark horn, bottom of mandible yellowish brown; feet brownish with yellowish undersides. Seems to be an *adult* ♀. JPO coll.

LSUMZ 71899, ♀, probably sub adult, 6 Nov. 1972, ovary 15 × 6 mm; upper mandible gray, lower mand. dull yellow; iris yellow; 140 g; 24 km S. Riberalta, Beni, Bolivia. D. L. Pearson coll.

We observed a Zigzag Heron on 8 August 1979, at the Explorer's Inn on the south bank of the Rio Tambopata, immediately downstream from the mouth of

the Rio La Torre (12°49'S, 69°18'W) at an elevation of approximately 170 m. The Inn is approximately 30 km southwest of the town of Puerto Maldonado, Department of Madre de Dios, Peru. We first saw the bird at 09:30 along a 1 m wide creek that was shallow, slow moving and completely shaded by a high, dry tropical evergreen forest with thick undergrowth and a canopy approximately 30 m high. When first observed, the heron was less than 1 m from the ground in dense underbrush at the top of a 1 to 2 m high creek bank. It flushed at our approach and crossed the creek, where it perched for several minutes at our eye level. It then flew a short distance and again perched at eye level on a fallen tree trunk, where we were able to watch it for over five minutes from a distance of approximately 7 m.

The bird was apparently an adult, dark above with buffy vermiculations and paler below. The iris was pale dirty yellow, the bill blackish and very short, and the legs were medium value greyish horn with yellowish toes. The bare facial skin was darkish gray. This bill description differs from those of O'Neill and Pearson and from that of Cherrie (1916) from a freshly killed bird as dusky above, pale yellow horn color below. The feathers of the neck and head formed a mane, especially prominent when the heron tucked or turned its head, which gave the bird a thick-headed appearance. The heron's posture and head shape (Fig. 1) differ substantially from most published illustrations of the Zigzag Heron. Our bird was less puffed-out below and its shaggy nape was not so full as illustrated by Tudor in Meyer de Schauensee and Phelps (1978); also, the neck was pulled in more and the feathers of the neck not as long and stiff as illustrated by Hayman in Hancock and Elliot (1978). The posture was more horizontal and the bill shorter than illustrated by Tudor or Hayman (cited above) or by Keane in Blake (1977), or Barruel in Haverschmidt (1968).

During the approximately seven to eight minutes of observation the heron flicked its tail with a peculiar movement. The tail was flicked from a neutral position down and to one side, then back to neutral, then down and to the other side and then back to neutral. Each element of this movement occurred approximately once a second (25 counted in 30 seconds). This tail flicking was essentially continuous, the rhythm barely interrupted during the several brief preening bouts.