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The Wilson Journal of Ornithology 120(4):887–890, 2008

Begging Behavior of Fledgling Rusty-breasted Cuckoo (*Cacomantis sepulcralis*)

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ABSTRACT.—I describe previously unknown begging calls and displays of a fledgling Rusty-breasted Cuckoo (*Cacomantis sepulcralis*) fed by a Pied Fantail (*Rhipidura javanica*) in Singapore. The cuckoo emitted two types of begging calls: (1) 'host-absent begging call' (loud 'tsi' repeated at 1-sec intervals) and (2) 'standard' begging call in the presence of the Pied Fantail (wheezy 'seeee' repeated 1–2 times/sec). The fledgling also performed the 'wing-shake begging' display, i.e., it raised one of its wings at a time towards the approaching Pied Fantail. This display was similar to that of the best studied brood parasite, the Common Cuckoo (*Cuculus canorus*). The structure of both types of begging calls of the Rusty-breasted Cuckoo was different in comparison to the Common Cuckoo and relatively more similar to some other closely related species of the genus *Cacomantis*. *Received 2 October 2007. Accepted 9 February 2008.*

The biology and ecology of brood parasitic cuckoos has received major attention during the last two decades (Davies 2000). However, most data are from only one species, the Common Cuckoo (*Cuculus canorus*). The knowl-

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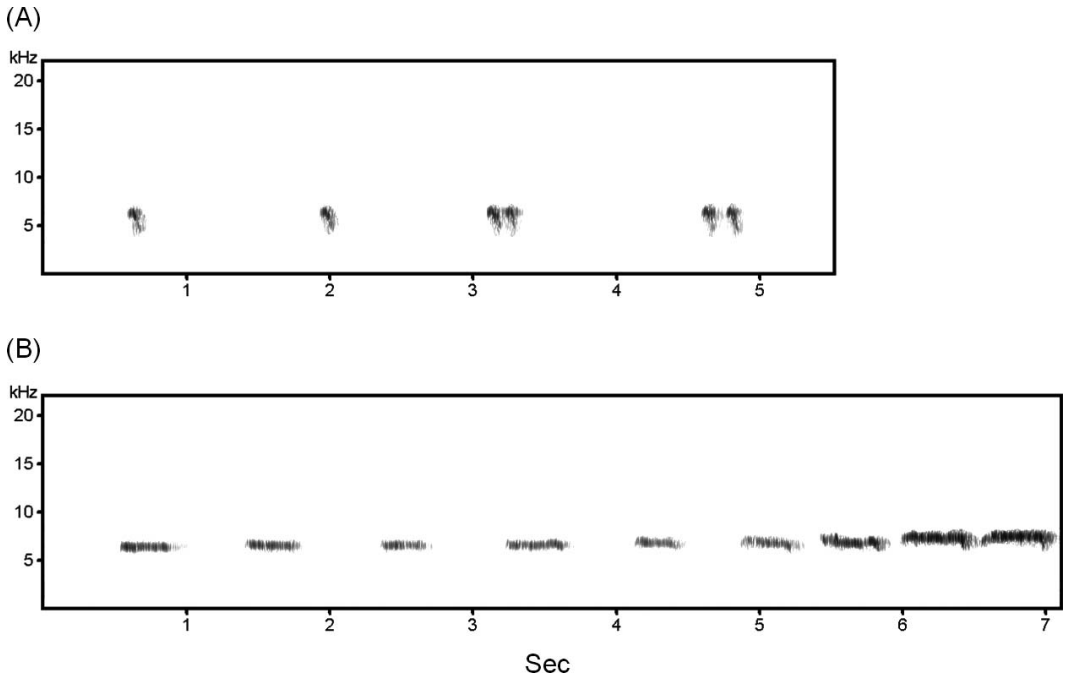

FIG. 1. Sonagrams of begging calls of fledgling Rusty-breasted Cuckoo in the absence of the Pied Fantail (A) and during its presence (B). The sonagrams were created using AVISOFT software and the background noise (cicada calls) was cleaned.

edge of even the general biology of other species is extremely poor, especially at the chick and fledgling stages (Grim 2006, 2007). This is true for most tropical brood parasites and in agreement with the poorly known biology of tropical birds in general (Martin 1996). Therefore, I report an observation of previously undescribed begging calls and begging behavior of a tropical cuckoo.

OBSERVATIONS

I observed a Pied Fantail (*Rhipidura javanica*) feeding a fledgling Rusty-breasted Cuckoo (*Cacomantis sepulcralis*) on 11 August 2007 in Sungei Buloh Wetland Reserve, Singapore. I localized the fledgling in the mangrove (*Rhizophora* sp., *Avicennia* sp.) habitat by its loud begging call. When the Pied Fantail was not present the cuckoo emitted the 'host-absent begging call'. This was a relatively loud 'tsi', about 0.1 sec in duration, 4–7 kH, repeated at 1/sec intervals (Fig. 1A left). At times the fledgling produced a doubled 'tsi' call (Fig. 1A right). The fledgling dramatically changed the structure of calling when the Pied Fantail approached and it produced the 'standard begging call'. This was a wheezy 'seeee', about 0.3–0.5 sec in duration at 6–7 kH. The cuckoo repeated the call at 1/sec intervals and increased in both rate (to 2 calls/sec) and frequency (to 7–8 kH) when the Pied Fantail was at close range (several cm from the chick) (Fig. 1B).

The Rusty-breasted Cuckoo fledgling sat on a branch 2 m above ground level and changed the perch only once during my observations. I observed the cuckoo chick from a distance of ~7 m for a period of ~10 min during which it was fed five times by the Pied Fantail. The cuckoo started to beg at a faster rate when it observed the approaching fantail. It also showed the 'wing-shake begging'. During this display the chick raised its wing at an angle of ~90° above horizontal and towards an approaching fantail. The display of the Rusty-breasted Cuckoo was *asymmetric*, i.e., the chick raised only one wing at the time. The fledgling in all five cases of feedings raised vertically the wing towards the approaching fantail (right wing 3 times, left

wing 2 times). In one case the fantail started to approach from the right side of the chick but finally arrived at the left side; the cuckoo synchronously changed the raised right wing for the raised left one. The chick stopped the wing-shake begging display when the fantail left the area. I saw only one fantail at the time but cannot exclude the possibility that two birds actually fed the chick. I was unable to identify the prey fed by the fantail to the cuckoo.

DISCUSSION

Cuckoo fledglings are occasionally fed by adults that did not raise them or even by species that do not raise cuckoos (Sealy and Lorenzana 1997), but the Pied Fantail was previously reported as a regular host of the Rusty-breasted Cuckoo in Java (Payne 2005). However, the hosts of this cuckoo in Malay Peninsula were 'not identified' (Wells 1999: 387). Some 60 passerine species have been recorded as hosts of the Rusty-breasted Cuckoo (Payne 2005).

The information on Rusty-breasted Cuckoo breeding biology is sparse. Johnsgard (1997: 215) reports 'No information' and Payne (1997) provides no data on cuckoo behavior in the postfledging period. Wells (1999: 387) reports 'No information' on the breeding behavior of the Rusty-breasted Cuckoo while Brooker and Brooker (1989) mention the fledging period is ~19 days. Payne (2005: 447) provides more details; he reports that one of three egg morphs of the Rusty-breasted Cuckoo mimics eggs of fantails (*Rhipidura* spp.), the nestling cuckoo evicts host eggs and young, the nestling period is 17–19 days, and the length of the post-fledging care is 1 month.

The compendium by Payne (2005) describes begging behavior by other cuckoo species, but mentions only a few records of Rusty-breasted Cuckoo fledglings and virtually no information on their calls or behavior. Higgins (1999: 682) reports 'no information on calls of nestlings' in the closely related Brush Cuckoo (*Cacomantis variolosus*). Brooker and Brooker (1989), and Payne (1997, 2005) treated the Rusty-breasted Cuckoo as a subspecies of the Brush Cuckoo.

There is some information on begging calls of two closely related cuckoo congeneric species. The begging call of a juvenile Chestnut-breasted Cuckoo (*C. castaneiventris*) is 'a repeated high-pitched thin wheezy *siiiaar-swee-sweep*' (Higgins 1999: 690). Fully fledged young Fan-tailed Cuckoos (*C. flabelliformis*) begged from a host with 'plaintive almost cicada-like *zeep-zeep-zeep*' (Higgins 1999: 698). These descriptions seem similar to the 'standard begging call' of the Rusty-breasted Cuckoo fledgling (wheezy 'seeee'). However, I have no information on age, gender or hunger level of the cuckoo chicks and any comparisons are only preliminary. It would be interesting to compare the fledgling's call with that of its putative fosterer's own chicks but I was unable to find any information on begging calls of Pied Fantail nestlings (Boles 2006, Wells 2007).

The Rusty-breasted Cuckoo fledgling uttered a different call when the Pied Fantail was absent ('tsi'; Fig. 1A). I found only one description of a 'host-absent begging call' in the literature for cuckoos. Sicha et al. (2007) described the 'host-absent vocalization' of the Common Cuckoo as distinct 'si' sounds repeated at intervals of 0.5–5 sec (Sicha et al. 2007: Fig. 1). The host-absent begging call of the Common Cuckoo has a higher frequency (7–8 kH) than that of the Rusty-breasted Cuckoo (4–7 kH) but sounds relatively similar to the human ear (pers. obs. of both cuckoo species). In contrast, the 'standard begging call' (in the presence of fosterers) of the Common Cuckoo chick spans a much wider range of frequencies (5–10 kH) than that of the Rusty-breasted Cuckoo (6–7 kH) and has a strikingly higher rate (10–20 vs. 1–2 calls/sec). There may be important species differences in the call structure between the two taxa and I acknowledge that differences may arise from factors unrelated to species identity (e.g., age, developmental stage, actual hunger level).

The Rusty-breasted Cuckoo fledgling also performed a 'wing-shake begging' display. This begging strategy seems to be universal in birds (Grim 2008) and the unusual aspect of this behavior in the observed cuckoo species was that the display was asymmetric (i.e., only one wing was raised at a time). Asymmetric wing shaking has also been observed in other cuckoo species (Tanaka and Ueda 2005, Tanaka et al. 2005, Grim 2008). In contrast, passerine chicks raise both wings at a time as a rule (Grim 2008).

Observations on behavior are valuable and indispensable for understanding the basic breeding biology of cuckoos and brood parasite–host interactions. Additional information will be valuable to facilitate cross-species comparisons. I encourage ornithologists and birdwatchers that may have observations on both chicks and fledglings of non-European cuckoos to publish their observations.

ACKNOWLEDGMENTS

I am grateful to Vaclav Pavel for preparing the sonograms. I thank Human Frontier Science Program Organization for supporting my brood parasitism research (grant HFSP RGY69/2007) and to Dana Campbell for correcting the language.

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