

# Observations on possible social play in the Malabar Pied Hornbill *Anthracoceros coronatus* at Dandeli, northern Karnataka

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**S**ocial play is a part of the huge repertoire of animal behaviour, particularly in species with courtship behaviour. Diamond & Bond (2003) presented a comparative analysis of social play in 25 species of birds belonging to five families (parrots, two families of hornbills, Eurasian babblers and, corvids). Social play was separated

into four categories that could be empirically demonstrated: play chasing, play fighting, play invitations, and social object play. Two species of hornbills have been recorded as showing play chases and play fighting. Kemp (2001) observed that juvenile Southern Ground Hornbills *Bucorvus leadbeateri* engage in fast aerial chases, bill wrestling and,

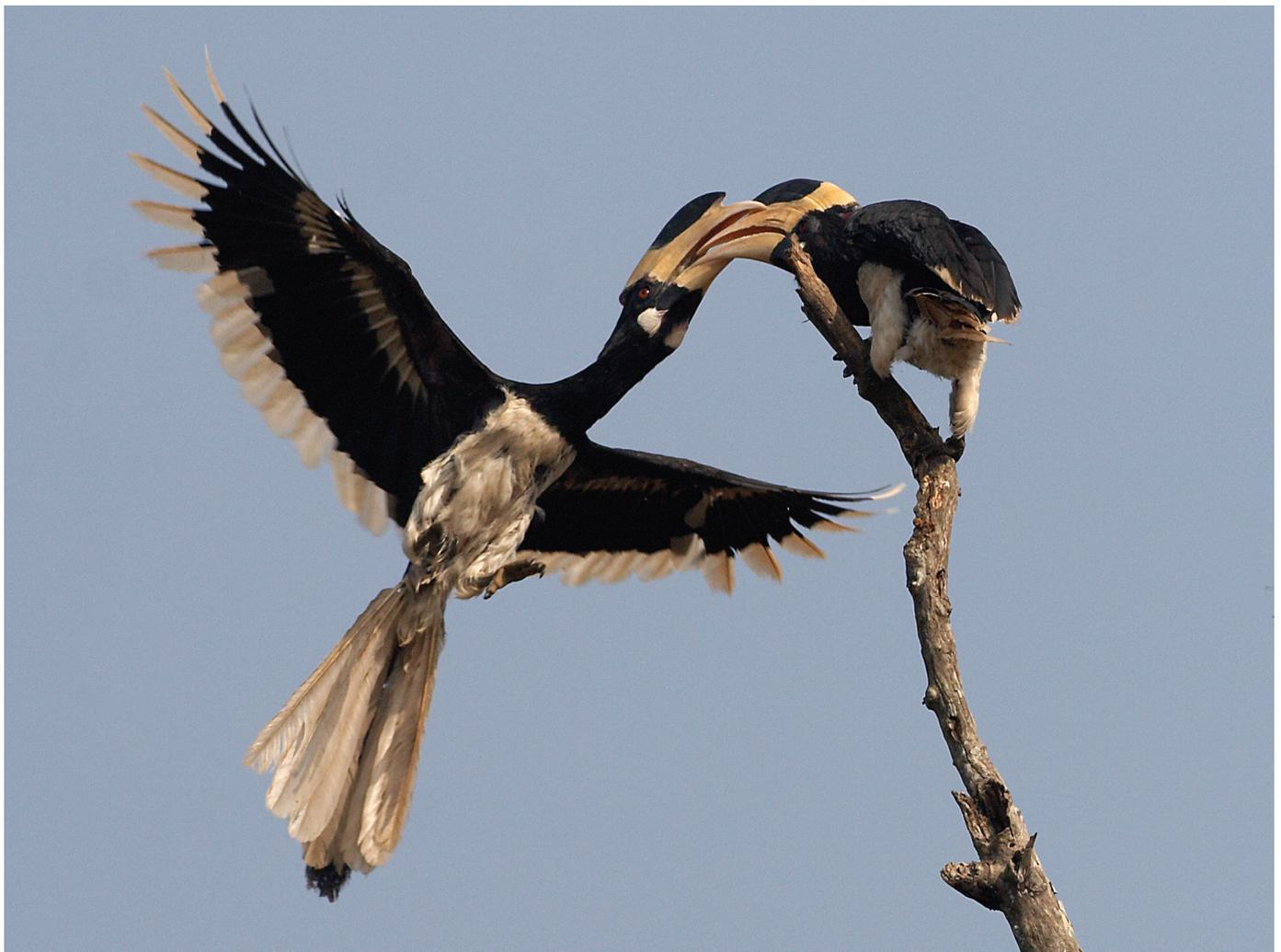


Fig. 1. Play fighting among male Malabar Pied Hornbill

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Fig. 2. Male Malabar Pied Hornbills locking bills

jumping on or over each other. He also recorded social object play in Ground Hornbills, noting that juveniles 'play tug-of-war with twigs'. Moreau & Moreau (1944) observed young Silvery-cheeked Hornbills *Bycanistes brevis* 'barge' each other and wrestle with their bills.

In this note we report some interesting field observations of pre-roosting behaviour in the Malabar Pied Hornbill *Anthracoceros coronatus*. These observations were made during a three-month survey (December 2006–February 2007) of the species in the Dandeli region of northern Karnataka, India. The study area (14°45'–15°25'N 74°25'–74°50'E) comprises mainly tropical deciduous forests and is believed to be the last stronghold of *A. coronatus* in the Western Ghats biodiversity hotspot (Divya Mudappa & T. R. S. Raman *pers. comm.*). Three other species of hornbills also occur in the study area, namely Great Pied Hornbill *Buceros bicornis*, Malabar Grey Hornbill *Ocyrceros griseus* and Indian Grey Hornbill *O. birostris*.

Roosting behaviour of the Malabar Pied Hornbill was monitored between 16:00–18:30 hrs at three different roosts along the Kali River, near Dandeli, Old Dandeli and Ganeshgudi. Flocks of 1–6 birds were seen arriving at their pre-roost gathering site along the river from different directions. On arrival they spread out in a linear fashion over 100–200 m on various trees. Between 16:00–17:15 hrs, a number of activities were recorded including loud vocalisations, hopping from one branch to another, feeding on fruit, preening and, flying across from one riverbank to the other. After 18:00 hrs the hornbills flew back to the roost trees individually or in pairs. They sat motionless on trees

and at dusk slowly settled into their roosts, camouflaging themselves within the dense foliage of the roost trees.

During the pre-roost gathering, the Malabar Pied Hornbills were observed locking bills with each other. This was termed as social display or "play fighting" by Reddy (1988) who also observed such behaviour between male and female hornbills. Observations made during the present study also recorded this form of social display between individuals of the same sex, i.e., two females or two males (Fig. 1). "Kissing" (Reddy 1988) behaviour was also displayed, where a pair of hornbills would bring their bills together and gently touch the tips with each other. This display was observed only between male and female hornbills.

Among the kinds of social play behaviour observed during this study, the most fascinating and interesting observation was a characteristic flight display along with the locking of bills. These hornbills were observed to fly out of the pre-roost tree, one after another, perform a mid-air acrobatic twirl and lock their bills together (Figs. 2 & 3). This took place directly above the middle of the river and as the birds were free-falling in mid-air, they would suddenly break off and fly back to the pre-roost gathering tree or in two different directions. This kind of flight display was observed five times during the study period between two females (twice) and also between a male and a female (thrice). These observations were made on five different occasions in the three roost sites mentioned in Table 1.

Reddy (1998) did not record this behaviour. Raman (1998) and Cranbrook & Kemp (1995) have reported a



Fig. 3. The complete acrobatic sequence

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behaviour described as “aerial casque-butting” in Great Pied and Helmeted *Rhinoplax vigil* hornbills. Aerial casque-butting has been observed between males in these species and is hypothesised to be a form of dominance display. In the Malabar Pied Hornbill however, since the mid-air acrobatic twirl occurred both between female-female and male-female pairs, we hypothesise that this could be a form of play chasing behaviour. Play chasing is said to occur when one bird follows another in flight or on the ground. It can be distinguished from flocking or other facilitative movements by the absence of consummatory behavior at the end of the chase and by the repeated exchange of roles

of pursuer and pursued (Diamond & Bond 2003). More observations are required to determine the exact nature and social implication, if any, of such an interaction.

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**References**

Cranbrook, E. & Kemp, A. 1995. Aerial casque-butting by hornbills (Bucerotidae): a correction and an expansion. *Ibis* 137: 588–589.  
 Diamond, J. & Bond, A. B. 2003. A comparative analysis of social play in birds. *Behaviour* 140: 1091–1115.  
 Kemp, A. C. 2001. Family Bucerotidae (Hornbills). **In:** *Handbook of the birds of the World. Mousebirds to Hornbills*. 6: 436–523. del Hoyo, J., Elliott, A. & Sargatal, J. (eds.). Barcelona: Lynx Edicions.  
 Moreau, R. E. & Moreau, W. M. 1944. Do young birds play? *Ibis* 86: 93–94.  
 Raman, T. R. S. 1998. Aerial casque-butting in the Great Hornbill *Buceros bicornis*. *Forktail* 13: 123–124.  
 Reddy, M. S. 1988. Some aspects of ecology and behaviour of hornbills, with special reference to *Anthracoceros coronatus* (Boddaert) from North Kanara district of Western Ghats. PhD. Thesis, Karnataka University.

**Table 1. Locations, dates and sex of the Malabar Pied Hornbill *Anthracoceros coronatus* observed performing the mid-air acrobatic twirl**

| Location    | Date        | Sex |
|-------------|-------------|-----|
| Old Dandeli | 27.xii.2006 | F-F |
| Dandeli     | 11.i.2007   | M-F |
| Dandeli     | 13.i.2007   | F-F |
| Ganeshgudi  | 1.ii.2007   | M-F |
| Ganeshgudi  | 15.ii.2007  | M-F |

**Errata**

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Page 199, column 1, 19th line from bottom: Replace ‘22.x.2007’ with ‘22.x.2006’.

Page 199, column 1, 9th line from bottom: replace ‘2.xi.2007’ with ‘2.xi.2006’.