

SHORT COMMUNICATION

Feeding association between the cattle tyrant (*Machetornis rixosus*, Tyrannidae) and the capybara (*Hydrochoerus hydrochaeris*, Rodentia)

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Abstract

Several birds associate with grazing mammals to use them as perches, beaters or to feed on ectoparasites. Here, foraging strategies of the cattle-tyrant associated and non-associated to capybaras were compared. The study was developed in urban areas of Campinas, Brazil. Seventeen feeding bouts of cattle tyrants associated with capybaras and 16 of cattle tyrants in the absence of capybaras were timed. Feeding bouts of birds associated with capybaras were significantly longer than those of birds not associated with the mammals. This may be associated with the fact that association with capybaras enhance the birds efficiency in catching arthropods.

Keywords: Foraging efficiency, bird-mammal association.

Several birds associate with grazing mammals to use them as perches, beaters or to feed on ectoparasites (Moreau, 1933; Rand, 1953; Sprunt, 1955; Heatwole, 1965; Smith, 1971; Isenhardt & DeSante, 1985; Vernon & Dean, 1988; Kallander, 1993; Ruggiero, 1996). Feeding associations between birds and capybaras (*Hydrochoerus hydrochaeris* Linneus, 1766) has been recorded in previous studies (MacDonald, 1981; Marcus, 1985; Murphey *et al.*, 1985; Sick, 1997; Tomazzoni *et al.* 2005), including the association involving the cattle tyrant (*Machetornis rixosus*, Vieillot 1819). It is likely that this is a commensalistic interaction, in which the bird preys on arthropods flushed by the grazing activity of the capybara, thus increasing its foraging success (Macdonald 1981, Sick 1997, Belton 2000, Tomazzoni *et al.* 2005). The purpose of the present study is to examine the foraging strategies, more specifically the time of feeding bouts, of cattle-tyrants associated with capybaras.

The study was done at the “Hermógenes Leitão Filho” city park (from now on HLF Park) and in the campus of the Universidade Estadual de Campinas, in the municipality of Campinas, southeastern Brazil (22°48'37.5"S 047°04'30.5"W). Both sites are highly disturbed, with planted grass areas and sparse trees. Several capybaras lived in the HLF Park at the time this study was developed. Samplings were done in May and June 2003.

In order to evaluate the efficiency of foraging strategies of cattle tyrants, we timed their feeding bouts. A feeding bout was considered to be the interval between the moment a cattle-tyrant lands for feeding until the moment the bird takes flight to leave the site. Short flights while on the ground or to perch on capybaras were considered as part of the feeding bout. Since we were unable to identify individual birds, we did not control for number of individuals sampled, but we avoided sampling the same individual twice, whenever possible. We measured the duration of 17 feeding bouts of cattle tyrants associated with capybaras and 16 of cattle tyrants in the absence of capybaras. We compared mean durations of feeding bouts of birds associated with capybaras with those of birds feeding alone by means of student's t-test (Zar, 1999). Capybara-associated feeding bouts (mean = 10 min 46 s, SD = 5 min 28 s) were significantly longer than alone-feeding bouts (mean = 3 min 46 s, SD = 1 min 40 s) (t-test, $t = 5.2$, $p < 0.05$) (Fig. 1).

This result and the fact observed by Tomazzoni *et al.* (1955) that cattle-tyrants actively feed on insects flushed by capybaras suggest that cattle-tyrants foraging in association with capybaras may be increasing their success in catching preys. Such predation increase was observed for the smooth-billed anis (*Crotophaga ani*) associated with cattle (Rand 1953). When not associated with capybaras, on the other hand, the best foraging strategy would probably be to invest less time in several different sites (Fitzpatrick 1980). Investigations on prey catching success, diet composition and feeding behaviors comparing the two situations could bring further details of this and other bird-mammal interactions.

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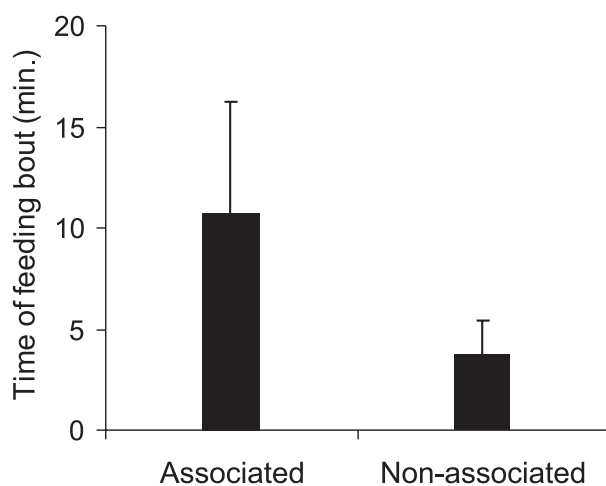


Figure 1 - Mean times of feeding bouts of cattle-tyrants associated and non-associated with capybaras.

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