

Report of deimatic display by *Donacobius atricapilla*
(Linnaeus, 1766) (Passeriformes: Donacobiidae)
Registro de *display* deimático de *Donacobius atricapilla*
(Linnaeus, 1766) (Passeriformes: Donacobiidae)

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Abstract: An unusual display behavior in response to the human approximation is reported for the Black-capped Donacobius, *Donacobius atricapilla* (Linnaeus, 1766). The observed bird showed a body size maximization display keeping static. The registered display is supposed to be a territorial response used to deter interspecific intruders.

Keywords: Defensive behavior. Birds. Territoriality.

Resumo: Foi registrado um comportamento de *display* incomum para o japacanim, *Donacobius atricapilla* (Linnaeus, 1766), em resposta à aproximação humana. A ave observada exibiu um *display* que simula expansão do tamanho corpóreo, que se manteve estática. O *display* registrado é compreendido como uma resposta territorial usada para intimidar invasores.

Palavras-chave: Comportamento defensivo. Aves. Territorialidade.

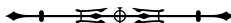
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INTRODUCTION

Birds can perform a variety of visual behavioral displays to declare their motivation or ability to defend valuable resources, such behaviors are intrinsic to the species and reflect their ecological requirements and social arrangements (Bradbury & Vehrencamp, 2011; Kiere et al., 2019). Deimatic displays are responsive defenses through unexpected visual signals to daunt opponents or predators, in which the trick is the element of surprise (Umbers et al., 2015). An example is the crest display observed in the hand-held *Onychorhynchus coronatus* (Statius Muller, 1776) (Graves, 1990). However, deimatic displays are poorly reported in birds.

The Black-capped Donacobius, *Donacobius atricapilla* (Linnaeus, 1766), inhabits the reeds and marshes of the lowlands in South America (Sick, 1997; Winkler et al., 2020). It is a social bird that lives in groups of monogamous couples and juveniles, which safeguards their territory (Kiltie & Fitzpatrick, 1984). The breeding pair presents a typical warning display against the intruders: the couple shows an antiphonal duet perched nearby, wagging their tails like a pendulum (Winkler et al., 2020).

Here is described another unusual display behavior executed by a single Black-capped Donacobius.

MATERIAL AND METHODS

The exhibition was observed and photographed by a single observer, on January 9th, 2019, in an open marsh area (6° 50' 54.2" S, 51° 54' 05.6" W) surrounded by *terra firme* forest in the Amazon, located in municipality of São Félix do Xingu, Pará state, Brazil. Based on the comparison of photographs during and after the exhibition, it was possible to measure the relative visual surface area expansion of the bird from the observer perspective, which was calculated using the 'AreaLength' algorithm in the Adobe Illustrator CC 2018 software.

RESULTS AND DISCUSSION

The registered display behavior consists in the abrupt body size maximization by means of the feathers bristling,

spreaded wings, bent neck, gaping beak and bulging eyes, when the bird remained completely static and silent (Figure 1). The exhibition began as soon as the bird noticed the observer's presence (about 40 ft away), the exhibition finale also occurred abruptly.

Two display sections were observed, the first lasting about 15 seconds, followed by a 10 second break, and then another section lasting about 10 seconds, in the second section the wings were half open. The bird had apparently dry feathers, and the two observed exhibitions were triggered by the observer's movements, thus nullifying the hypothesis of sunbathing behavior. The bird remained on the branch for about one minute after the last exhibition.

No other individual was found nearby, due to this, it is supposed that the individual observed was a single young adult since couples are usually seen together or in close proximity (Winkler et al., 2020). The 'AreaLength' algorithm pointed to an 87.58% increase in the bird's visual surface area during the display (Figure 2), suggesting that the function of this behavior is likely to appear larger.

The registered behavior is assumed to be a territorial rather than an antipredatory response, since there was



Figure 1. Display exhibition of *Donacobius atricapilla* in Pará, Brazil. Photo: Luis Aguiar de Morais (2019).

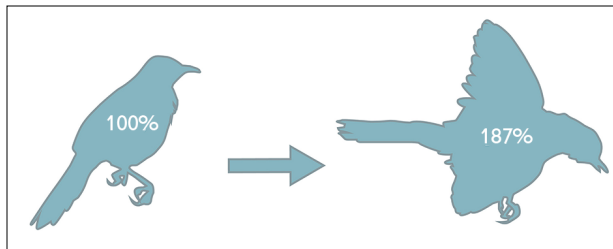


Figure 2. Visual surface area expansion caused by display in the *Donacobius atricapilla*.

no immediate flight away after the exhibition. The burly appearance and the bulging eyes, which seem like eyespots (see De Bona et al., 2015), suggests that the display feature is possibly a deimatic strategy used by the Black-capped *Donacobius* to deter interspecific intruders. There are no descriptions of this behavior for *D. atricapilla* in the current literature, another similar behavior was described for *Bubo* owls (Ramanujam, 2010), however, followed by escape.

CONCLUSIONS

Here, an unknown behavior for Black-capped *Donacobius* was reported, corroborating the complex social organization of the species demonstrated by previous studies. Future work may investigate evolutionary explanations for this behavior and its possible ecological correlations.

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