



THE NEST OF THE SCARLET-HEADED BLACKBIRD *AMBLYRAMPHUS HOLOSERICEUS* IN BRAZIL WITH NOTES ON ITS BREEDING BEHAVIOR

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Abstract · Although it is a common marsh bird of central Brazil, there is little information about the reproductive biology of the Scarlet-headed Blackbird *Amblyramphus holosericeus*. Here we present data from observations made of two nests —found in November 2005 and March 2008 — amid the vegetation of a flooded area in the Pantanal of Mato Grosso, the central-west region of Brazil. The nests were built by the couple attached to marshy vegetation, at least 1 m above the surface of the water. The clutches consisted of two eggs with a greenish background color, spotted with fine brown striations and some small, spaced spots across the surface. In one of the nests the incubation period lasted 13 days. Both male and female cared for the chicks, who left the nest around 10 days after hatching. Despite its Least Concern global conservation status, the species could be experiencing a population decline, primarily due to the destruction of swamp areas and to frequent fires in much of the Pantanal region during drought periods.

Resumen · El nido del mirlo escarlata *Amblyramphus holosericeus* en Brasil y notas sobre su comportamiento reproductivo

A pesar de ser un ave común de los pantanos del centro de Brasil, existe poca información sobre la biología reproductiva del mirlo escarlata *Amblyramphus holosericeus*. En este trabajo presentamos datos de observaciones realizadas en dos nidos encontrados durante los meses de Noviembre y marzo de 2008, en medio de la vegetación de un área inundada en el Pantanal de Mato Grosso, región Centro-Oeste de Brasil. Los nidos fueron construidos por la pareja y se ubicaron en vegetación palustre a al menos 1 m de altura por encima de la superficie del agua. Las puestas estaban formadas por dos huevos de color verdoso, salpicados de finas estrías y pequeñas manchas marrones espaciadas en su superficie. En uno de los nidos la incubación duró 13 días. El macho y la hembra cuidaron de los polluelos, los cuales abandonaron el nido unos 10 días después de la eclosión. A pesar de su estado de conservación de preocupación menor, la especie podría estar sufriendo una disminución de la población, principalmente debido a la destrucción de las zonas pantanosas, y por los frecuentes incendios en gran parte de la región del Pantanal durante los periodos de sequía.

Keywords: clutch size · eggs · Icteridae · Pantanal

INTRODUCTION

Knowledge about the reproductive biology of birds is important, among other aspects, for understanding natural history patterns and establishing actions for the conservation of species and their habitats. However, little is known about the reproduction of many bird species, especially in the Neotropical region, which harbors the largest avifaunal diversity on the planet (Mason 1985, Rodrigues et al. 2017, Xiao et al. 2017, Lees et al. 2020, Fierro-Calderon 2021). Limited data is available on the nests, eggs, nestlings, incubation period, clutch size, and nesting season of some endangered and endemic species, as well as more common species with broader geographical distribution (Xiao et al. 2017, Lees et al. 2020, Fierro-Calderon 2021).

The Scarlet-headed Blackbird, *Amblyramphus holosericeus*, is among the species with insufficient data on its reproductive biology. It is a marsh bird that occurs in Bolivia, Paraguay, central-southern, southeastern, and southern parts of Brazil, Uruguay, and Argentina (Fernández et al. 2007, Fraga 2020). Throughout its range, *A. holosericeus* occurs in wetlands, lakes, and riverbanks bordered with dense shrubs or herbaceous vegetation, such as sedges *Cyperus spp.* and cattails *Typha spp.* *A. holosericeus* also sometimes visit pastures or agricultural fields near flooded areas (Di Giacomo 2005, Fraga 2020).

Although it is not a globally threatened species, *A. holosericeus* is not always common in its areas of occurrence. Due to its low abundance, it is considered vulnerable in some areas of its distribution, mainly due to the degradation and alteration of its habitats resulting from fires, intensification of cattle farming, and drainage of flooded areas, as well as the impact of illegal trapping for the bird trade. These threats have had a negative effect on its populations (Di Giacomo 2005, Fernández et al. 2007, Azpiroz et al. 2012, Fraga 2020).

Regarding its reproduction, primary studies with diverse approaches were carried out in Argentina by Pereyra (1934), who described the nest; Fernández & Mermoz (2000) and Mermoz et al. (2021), who described nest parasitism by *Molothrus bonariensis*; Fernández et al. (2007), who studied the reproductive success; as well as Di Giacomo (2005) and De La Peña (2013), who compiled some information about this species, including data on its eggs and nests. In this paper, we describe the nest of *A. holosericeus* in Brazil and present data on its reproduction in the central-western region of the country.

METHODS

We obtained data from two *A. holosericeus* nests in 2005 and 2008 (see below) in the municipality of Poconé, Mato Grosso, in an area of the Pantanal floodplain close to the Transpantaneira highway, about 120 km from Cuiabá. The Pantanal Plain is located in the depression of the upper Paraguay River, bordered by the Andes Mountains to the west and by the Brazilian Central Plateau to the east. It occupies an area of approximately 140,000 km² in the Brazilian states of Mato Grosso and Mato Grosso do Sul, also occurring in parts of Paraguay and Bolivia. The plain extends approximately 250 km east to west and 450 km north to south, and its altitude above sea level averages 100 m but varies from 60 to 150 m. The climate is strongly seasonal, with an average annual temperature of around 25°C, with absolute maximum temperatures exceeding 40°C in the months of September to December (Fernandes et al. 2010) and an absolute minimum of around 15°C.

An annual cycle of flooding that varies in intensity each year makes it possible to alternate between years with heavy rains and relatively dry years. Every year, however, a large part of the terrestrial environment is flooded, and the expanse of inundation varies from 11,000 to 110,000 km², with an average of 53,000 km² (Fernandes et al. 2010).

The study site exhibited a diverse and heterogeneous landscape consisting of various types of environments and plant species. The area was predominantly covered by grasses (Poaceae) and sedges (Cyperaceae), alongside unidentified

woody plants. During the research period, the region experienced flooding, causing lakes, rivers, and canals to be submerged underwater.

To locate nests, we observed the behavior of breeding pairs when approaching and leaving presumed nest sites. From then on, we visited the nesting site every second day. Parameters such as the position of nests, height from the ground, and supporting plant species were recorded. Other variables, such as measurements and weights of nests and eggs, were taken using a measuring tape, a 150 mm graduated caliper, and 15 g precision Pesola scales. Clutch size, description of chicks, feeding patterns, and nestling period were also noted. Observations and photographic records were taken at a distance of approximately 10 m from a camouflaged hide.

RESULTS AND DISCUSSION

We monitored two nests, one from November 10 to December 23, 2005 (hereafter “November nest”), and another from February 26 to March 30, 2008 (hereafter “March nest”). The construction of the November nest began on November 10, 2005, and was completed on November 20, 2005. The construction of the March nest was already underway on February 26, 2008, and was completed on March 4. Therefore, the construction period for one of the nests was 10 days. The cup-shaped nests (sensu Simon & Pacheco 2005) were suspended at 1.0 and 1.3 m above the water surface, laterally attached with four or five stipes to aquatic macrophytes, *Cyperus giganteus* papyrus stems, and other Cyperaceae or Poaceae. Long and dry fibers of aquatic vegetation were used to construct and line the nest. The November nest’s measurements were: internal diameter 7 cm, external diameter 14.5 cm, internal height 6.5 cm, external height 13 cm; its weight was not determined (Figure 1). The March nest’s measurements: internal diameter 8 cm, external diameter 13 cm, internal height 8 cm, external height 20 cm, and weight 70 g.

Our observations agree with the scarce existing literature indicating that the species nests preferentially in flooded areas, with the nest built in aquatic plants, such as reeds, and supported at its base with the stems of the surrounding plants (Pereyra 1934). The nest is cup-shaped, made of straw and



Figure 1. Nest of *Amblyramphus holosericeus* on an aquatic macrophyte, *Cyperus giganteus* papyrus. (Nordesta collection).

grass, open at the top, with a diameter of 10 cm wide and 10 cm deep; nests are often lost or flooded due to rising water levels (Pereyra 1934). Similarly, also in Argentina, Di Giacomo (2005) described the nest as a bulky, untidy semi sphere made of pieces of leaves and dried grass, lined with more delicate fibers, and attached to several reed stems between 0.8 and 2.3 m above the water. De La Peña (2013), on the other hand, reported the nest as a bowl of plant fibers, measuring 12 cm in diameter, 8 cm in internal diameter, 7.5 cm deep, and 15 cm high, constructed in reeds at 1.30 m above the water.

Although the observations made by Di Giacomo (2005), De La Peña (2013), and Fernández et al. (2007) recorded clutches of three to four eggs, we found clutches of two eggs in both studied nests. Eggs were laid on consecutive days (November 21–22 for the first nest and March 5–6 for the second). Eggs were pointed-oval shaped and had a greenish background, spotted with fine brown streaks and a few small, spaced spots across the surface. The two eggs in the March nest averaged 27.2 mm x 19.8 mm in size and 4.3 g, and the two eggs in the November nest averaged 25.4 mm x 18.4 mm in size and 3.9 g (Figure 2). Although our nests were not parasitized, parasitism by *M. bonariensis* and *Molothrus rufoaxillaris* has been reported elsewhere (Fernández & Mermoz 2000, Fernández et

al. 2007, Mermoz et al. 2021).

Our observations are in line with details reported by Fernández et al. (2007): *A. holosericeus* is a monogamous species with the pair dedicated to territory defense, nest building, and chick feeding. We could not determine the role of sexes in incubation but, according to Fernández et al. (2007), this task is carried out exclusively by the female. In the November nest, the incubation period was 13 days, and the nestling period was 17 days. The March nest incubation period was 12 days, and the nestling period was 13 days (Figure 3). Fernández et al. (2007) indicated an incubation period of 13 to 14 days in the studied nests in Argentina.

Chicks hatched on the same day (synchronous) in both nests (hatching success was 100%). Hatchlings have orange skin, a violaceous beak with white commissures, an orange throat, and a tongue dotted with small white dots (Figure 4).

On December 11, 2005, during an observation period of 120 min (06:15 h to 08:15 h) adults fed chicks approximately every 10 minutes, bringing insects (crickets and unidentified caterpillars) and several species of spiders. During feeding, chicks and adults vocalized intensely (Figure 4). Two days later, the nest had been predated. On March 27, 2008, during an observation period of 180 min (07:00 to 10:00 h) both par-



Figure 2. Nest and eggs of *Amblyramphus holosericeus* Poconé, Mato Grosso, November 2005. (Nordesta collection).



Figure 3. An adult, possibly the female, incubating eggs in the nest, Poconé, Mato Grosso, March 2008. (Nordesta collection).

ents fed their two 9-day-old chicks delivering food at 10-20-minute intervals, totaling 20 prey deliveries. Preys were usually given whole (without dismembering) and consisted of Lepidoptera larvae, termites, grasshoppers, beetles, and diverse species of spiders (Table 1). Both chicks left the nest on March 31, 2008 (Figures 5–8).

While growing, the chicks showed dark, almost black plumage and left the nest 10 days after hatching, a shorter period than that reported by Fernández et al. (2007) (12–13 days). Their parents continued to feed them while they roamed around the vegetation near the nest (Figures 7–8).



Figure 4. An adult in the nest with two 3-day old nestlings, Poconé, Mato Grosso, March 2008. (Nordesta collection).



Figure 5. An adult at the nest feeding the nestlings, Poconé, Mato Grosso, March 2008. (Nordesta collection)



Figure 6. An adult at the nest removes the fecal sacs excreted by the nestlings, Poconé, Mato Grosso, March 2008. (Nordesta collection).

Table 1. Arthropod prey fed to nestlings of two nests of *Amblyramphus holosericeus*, Poconé, Mato Grosso, December 2005 and March 2008.

Taxon	Number of prey (%)
Orthoptera	10 (29.41)
Lepidoptera (larvae)	8 (23.54)
Isoptera	3 (8.82)
Diptera	3 (8.82)
Coleoptera	3 (8.82)
Arachnid	7 (20.59)
Total	34 (100)

**Figure 7.** Nestlings, around nine days old, almost ready to leave the nest, Poconé, Mato Grosso, March 2008. (Nordesta collection).**Figure 8.** Nestlings about to leave the nest, Poconé, Mato Grosso, March 2008. (Nordesta collection).

No nesting records of *A. holosericeus* have been previously reported in Brazil. More observations and field research are needed to expand information on its behavior and reproductive biology, as many aspects of the reproduction of this species are still unknown in the Pantanal of Brazil. Overall, the reproductive details reported in our study were in line with those described in the literature (mainly from Argentina).

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