

Nest and egg description of threatened *Herpsilochmus* spp. from coastal forest habitats in Rio Grande do Norte, Brazil (Aves: Thamnophilidae)

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ABSTRACT. We provide description of eggs and nest structure for two Brazilian antwrens, including the IUCN “vulnerable” species, *H. pectoralis* Sclater, 1857, and the BirdLife International “near-threatened”, *H. sellowi* Whitney & Pacheco, 2000. Our observations derive from a larger study on *Herpsilochmus* Cabanis, 1847 distribution in coastal forest fragments in the northern range limit of the Brazilian Atlantic rainforest. Both species nested in relatively open forest. The nest of *H. sellowi* was built with fungal hyphae, a trait common among some birds. Both eggs were moderately beige with brown spots. Most of the information on Brazilian antwren nesting comes from species that do not occur in the Atlantic rainforest. This is the first account for nest behavior for Atlantic rainforest antwrens. **KEY WORDS.** *Herpsilochmus pectoralis*; *Herpsilochmus sellowi*.

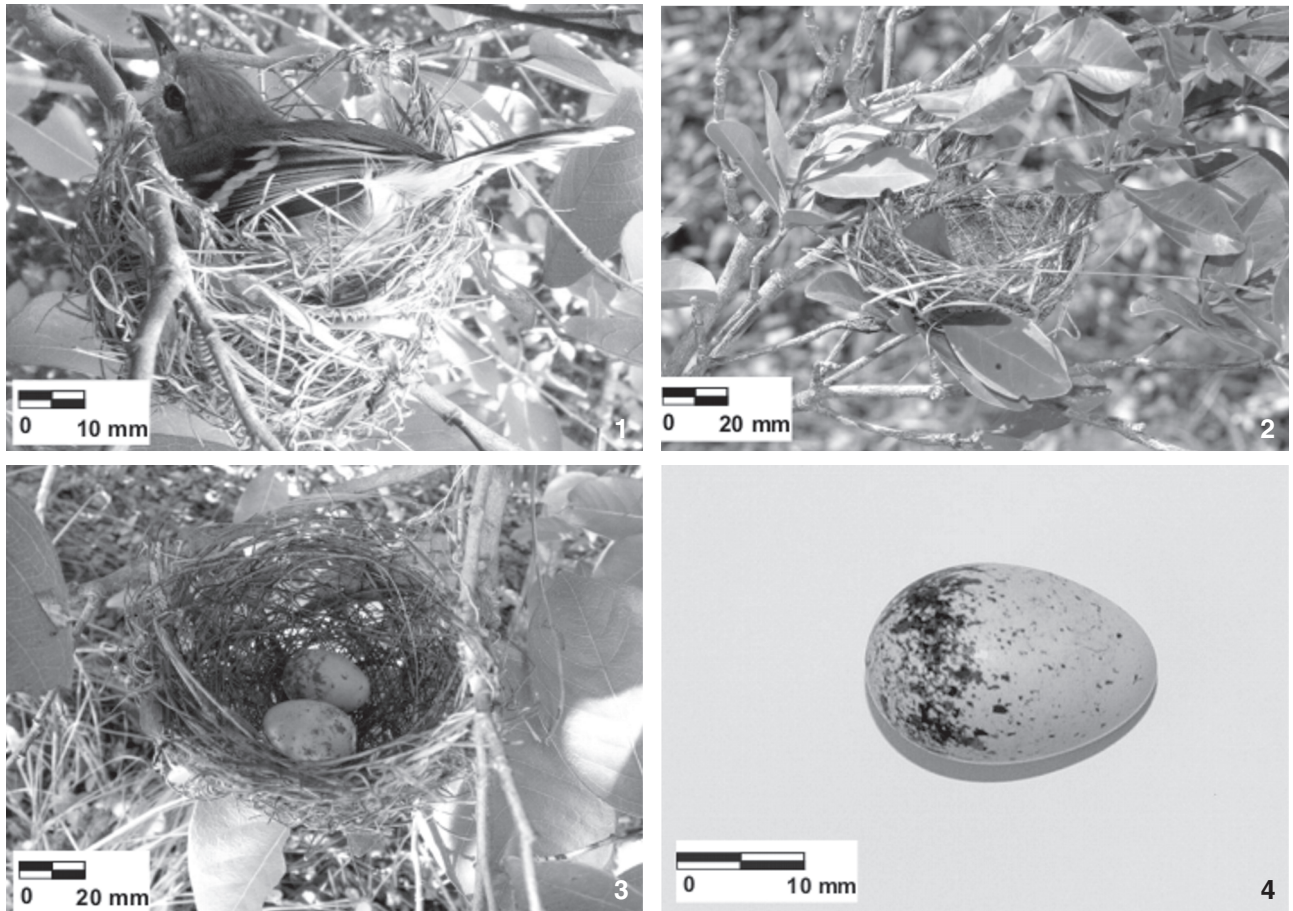
RESUMO. Descrição de ninhos e ovos de espécies ameaçadas de *Herpsilochmus* em habitats florestais costeiros no Rio Grande do Norte, Brasil (Aves: Thamnophilidae). Descrevemos a estrutura do ninho e características dos ovos de duas espécies brasileiras de *Herpsilochmus*, incluindo a espécie vulnerável (IUCN) *H. pectoralis* Sclater, 1857 e a quase ameaçada (BirdLife International) *H. sellowi* Whitney & Pacheco, 2000. Nossas observações derivam de um estudo maior sobre a distribuição de *Herpsilochmus* Cabanis, 1847 em fragmentos costeiros de Mata Atlântica em seu limite norte. Ambas as espécies nidificam em floresta relativamente aberta. O ninho de *H. sellowi* foi construído com hifas de fungo (*Marasmius*), uma característica comum entre algumas aves. Os ovos das duas espécies foram moderadamente bege, com pequenas manchas marrons. A maioria das informações disponíveis sobre nidificação do gênero no Brasil provem de espécies que vivem fora da Mata Atlântica. Este é o primeiro relato do comportamento de nidificação para *Herpsilochmus* na Mata Atlântica. **PALAVRAS-CHAVE.** *Herpsilochmus pectoralis*; *Herpsilochmus sellowi*.

Herpsilochmus Cabanis, 1847 includes 15 poorly studied species, with ten species in Brazil. Descriptions of nests and nesting behavior are available for two species, *H. longirostris* Pelzeln, 1868, from the Brazilian savanna, and *H. dugandi* Schauensee, 1945, from the Amazon Basin (STRAUBE *et al.* 1992, MARINI *et al.* 1997, ZIMMER & ISLER 2003). Here, we describe nests and egg traits of two endemic *Herpsilochmus* antwrens: *H. pectoralis* Sclater, 1857 and *H. sellowi* Whitney & Pacheco, 2000. The threatened *H. pectoralis* (BIRDLIFE INTERNATIONAL 2008a, MMA 2003) is limited to the northeastern region of Brazil, from the states of Maranhão to Rio Grande do Norte and south to Bahia (RIDGELY & TUDOR 1994, ZIMMER & ISLER 2003). The recently described *H. sellowi* (the Caatinga Antwren) is a near-threatened species (BIRDLIFE INTERNATIONAL 2008b) originally thought to be restricted to the Brazilian semi-arid Caatinga (WHITNEY *et al.*

2000) but that may be common in forest fragments in coastal areas of the state of Rio Grande do Norte.

Birds and nests were observed in a mosaic of forest fragments on the coastal area of the state of Rio Grande do Norte, Brazil. The surrounding landscape is heterogeneous, but comprises mostly agricultural land. Nest description follows SIMON & PACHECO (2005). Eggs and nests were measured with a caliper (to the nearest 0.05 mm) and a small ruler (1 mm). Eggs were weighed on a Pesola scale (to the nearest 0.1 g). Egg coloration was determined following the color guide of SMITHE (1975).

On 15 April, 2006, one nest of *H. pectoralis* was found in a forest gap of coastal woody scrub (“restinga”) dominated by *Myrcia aff. guianensis* (Aubl.) DC., 1828, *Psidium oligospermum* Mart., 1828 (both Myrtaceae) and *Anacardium occidentale* Linnaeus, 1753 (Anacardiaceae) in the Pipa Ecological Sanctu-



Figures 1-4. (1-2) Nests of *Herpsilochmus pectoralis* and *H. sellowi*, respectively; (3-4) eggs of *H. pectoralis* and *H. sellowi*, respectively. Photo credits: Bruno França and Mauro Pichorim.

ary (Tibau do Sul municipality, 06°13'46"S, 35°04'08"W, 60 m elevation). The unlined, cup-shaped nest was in a low, horizontal fork of *Maytenus impressa* Reissek, 1861 (Celastraceae), 1 m above the ground, built mostly of grass with grass roots, passionflower tendrils, leaves of various sizes and twigs from a legume vine. Outside diameter was 71 x 67 mm (widest and perpendicular) and internal 51 x 50 mm, inside depth was 45 mm, and total height was 60 mm (Fig. 1). Two eggs were in the nest being brooded by the female. The eggs (19.2 x 14.3 mm, N = 1) were beige (Color 219D Beige), with brown spots mainly at the obtuse pole (Color 221A-Warm Sepia) (Fig. 2). Both male and female were seen participating in incubation, based on a four-hour observation period. *Callithrix jacchus* (Linnaeus, 1758) (Callitrichidae) came near the nest (but in the canopy) on one occasion and while close to the nest tree the female was agitated, constantly looking in the direction of the wandering marmosets in the canopy.

On 2 September, 2006, a nest of *H. sellowi* was discovered in a forest fragment in the municipality of Extremoz

(05°41'12"S, 35°41'12"W, 47 m elevation) with dominant plant species: *Curatella americana* Linnaeus, 1759 (Dilleniaceae), *Anacardium occidentale* and *Hancornia speciosa* Gomes, 1803 (Apocynaceae). The nest was under construction and both male and female were seen bringing nesting material and building the nest. The nest was apparently complete five days later and both sexes visited the nest without further construction. Seven days after discovery, two eggs were seen in the nest.

The nest was similar to the first (external diameter = 56 x 50 mm, internal = 46 x 44 mm, depth = 30 mm, height = 40 mm, nest height = 3.6m, Fig. 3) and built in a tree of *Byrsonima gardneriana* Juss. (Malpighiaceae). This nest included mostly fungal hyphae (*Marasmius* sp. - Fungi: Marasmiaceae), with grass blades and sheaths, tendrils, pieces of leaves and web. The eggs (18.5 x 12.5 mm, 1.1g, N = 1) were light beige (Color 92 Pale Horn) with brown spots concentrated on the obtuse pole (Color 31 Maroon, Fig. 4). Both adults were observed incubating. Again, only the female was observed turning the eggs (total observation time for this species was 17 hours).

The general shape of the nests reported here is similar to *H. longirostris* and other Thamnophilidae, including *Thamnophilus* Vieillot, 1816, *Dysithamnus* Cabanis, 1847, *Taraba* Lesson, 1830, *Thamnomanes* Cabanis, 1847, *Formicivora* Swainson, 1858 and some *Myrmotherula* Sclater, 1858 (SICK 1997, ZIMMER & ISLER 2003). Similar to other Thamnophilid nests, nest walls are thin and the eggs can be seen through them (ROPER 2003), especially in *H. sellowi*. Nests of other *Herpsilochmus* are more complex and materials tend to be more tightly intertwined. For instance, nests of *H. dugandi* contain bright green moss, with several wide stems of lichens around the bottom (ZIMMER & ISLER 2003) and nests of *H. longirostris* are composed of several leaves (especially of the bamboo *Guadua* Kunth, 1822 (Poaceae), grass spadices, filaments of the fungus *Marasmius*, kapok and radicels (STRAUBE *et al.* 1992). The seemingly odd habit of using fungus as nest material is shared with other Thamnophilidae such as *Myrmeciza ruficauda* (Wied, 1831), *Thamnophilus torquatus* Swainson, 1825, *T. atrinucha* Salvin and Goodman, 1892 and *Herpsilochmus longirostris*. (ONIKI 1975, STRAUBE *et al.* 1992, SICK 1997). The suggestion that species of this genus nest in upper levels of the vegetation (ZIMMER & ISLER 2003) is not supported here. Perhaps the low (1 m) nest of *H. pectoralis* possibly avoids canopy moving *Callithrix jacchus*, a common species in the area.

Two egg clutch size is within the modal size for the Thamnophilidae and, while it is apparently fixed at two in most species (probably a tropical feature), *Thamnophilus ruficapillus* Vieillot, 1816 and *T. caerulescens* Vieillot, 1826 lay three eggs while *Myrmornis* Hermann, 1783 lays one (ZIMMER & ISLER 2003).

The general biology of species in *Herpsilochmus* is still poorly known. Reproduction described here of *H. sellowi* in Atlantic forest shows that it is not restricted to the Caatinga. Furthermore, we have seen both species often in the coastal forests of eastern Rio Grande do Norte. Evidently the species is more widely distributed with active reproduction than was previously thought. Better understanding of distribution and reproductive biology will be needed to inform conservation measures. We hope that this study will generate further research that may also find additional occupied areas and that additional reproductive information may help determine whether populations are stable.

We thank David Hasset for permitting our research on his property and Valdenir Andrade for logistical support. Thanks also to Bruno Albuquerque who found one of the nests. Fungal material was identified by Iuri Baseia (UFRN) and plant material was identified by Rubens Queiroz (Departamento de Botânica, Unicamp), to whom we are grateful. We also thank

James Roper for reviewing the manuscript and improving our English. Partial support for this research was granted by the graduate program in Biological Sciences at the Universidade Federal do Rio Grande do Norte.

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Submitted: 01.VII.2008; Accepted: 10.IX.2008.

Editorial responsibility: Kleber del Claro