

## FIRST RECORD OF NESTS BUILT USING DOMESTIC DOG HAIR BY *TODIROSTRUM MACULATUM* (DESMAREST, 1806) (AVES: PASSERIFORMES) IN CENTRAL AMAZONIA

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**Abstract:** The use of mammalian hair as a nest-building material by Amazonian birds is poorly documented. Here, we describe the use of the hair of a domestic dog as nest-building material by the Spotted Tody-Flycatcher, *Todirostrum maculatum*. The nesting pair collected the dog hair from the ground to construct their nest. The use of this material appeared to be highly opportunistic.

**Keywords:** breeding biology, natural history, nests description

### PRIMEIRO REGISTRO DE NINHOS CONSTRUÍDOS COM PELO DE CACHORRO DOMÉSTICO POR *TODIROSTRUM MACULATUM* (DESMAREST, 1806) (AVES: PASSERIFORMES) NA AMAZÔNIA CENTRAL

**Resumo:** O uso de pelos de mamíferos como material de construção de ninhos por aves amazônicas é pouco documentado. Descrevemos o uso do pelo de um cão doméstico como material de construção de ninho pelo ferreirinho-estriado, *Todirostrum maculatum*. O casal do ninho recolheu os pelos do cachorro no chão para construir seu ninho. O uso desse material pareceu ser altamente oportunista.

**Palavras-chave:** biologia reprodutiva, história natural, descrição de ninhos.

The Spotted Tody-Flycatcher *Todirostrum maculatum* (Desmarest, 1806) of the family Rhynchocyclidae, which has a body length of approximately 8 cm, is widely distributed in the Amazon region, and its reproductive biology is well known (Haverschmidt, 1955; Hilty & Brown, 1986; Marceliano, 1982; Melo & Greeney, 2019; Walther, 2004). This species usually

breeds throughout the year and builds nests that are similar in structure to those of all the other species of the family Rhynchocyclidae (Crozarior et al., 2016; Ferreira et al., 2019; Floriano et al., 2020; Haverschmidt, 1955; Ingels et al., 2016; Rodríguez-Ferraro & Azpiroz, 2006). The *T. maculatum* breeding pair builds a nest in approximately two weeks, in which they lay one or two eggs (Hilty & Brown, 1986; Mar-

celiano, 1982; Walther, 2004). This species does not appear to have any systematic preference for a specific type of nest-building material, and will typically combine a range of materials, such as dry leaves, fibers, roots, feathers, and spider web to build a nest (Haverschmidt, 1955; Hilty & Brown, 1986; Marceliano, 1982). Here, we describe the use of mammalian hair as the principal material for the construction of nests by *T. maculatum*.

We recorded the building of three nests by *T. maculatum*, using domestic dog (*Canis lupus familiaris* Linnaeus, 1758) hairs, in the municipality of Tefé, in Amazonas state, northern Brazil (Fig. 1). The nests were built in the backyard of our residence, located in the urban zone of Tefé (3°20'59.10" S, 64°42'55.58" W). We collected the nests as soon as they were vacated by the nestlings. As soon as each nest was removed, the *T. maculatum* pair built a new



**Fig. 1.** Nest of *Todirostrum maculatum* (Desmarest, 1806) built from domestic dog hair in the backyard of an urban residence in the central Amazonia, Brazil. A. Nest collected in January 2022. B. A clump of dog hair found on the ground in the backyard. C. Detail of the nestlings inside the nest, and .D. An adult *T. maculatum* perched next to the nest with an insect prey in its beak.

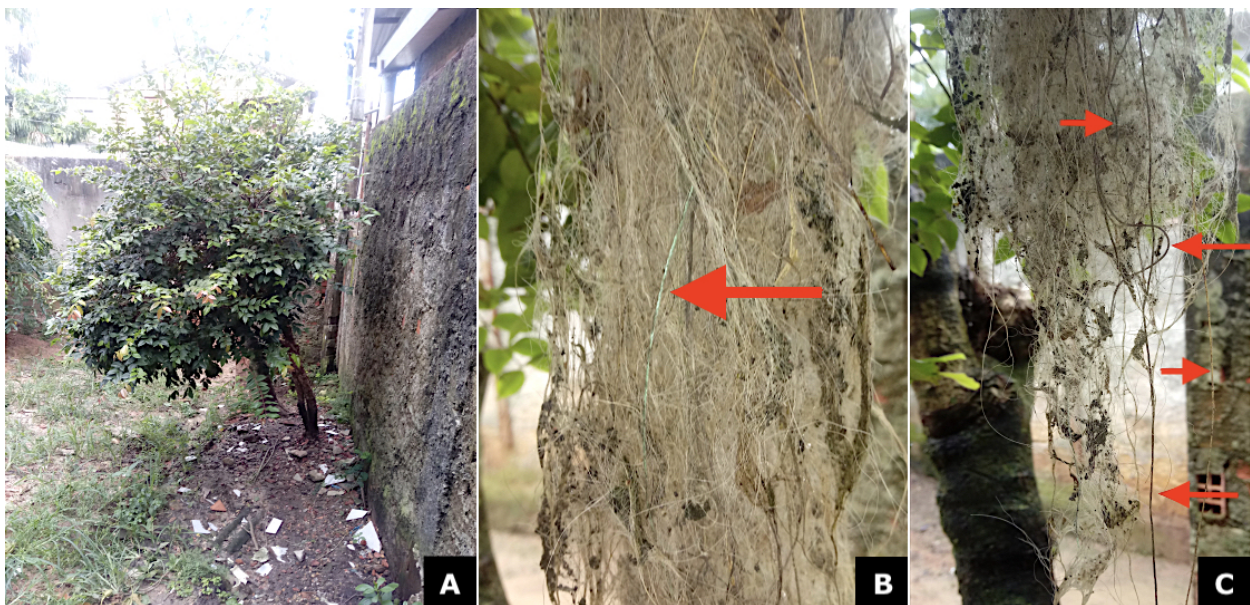


one. The nests took approximately 14 days to build. All the nests were constructed at a height of approximately 2 meters in the same tree, an individual of a species of the genus *Plinia*, family Myrtaceae (Fig. 2A). We collected the first nest in September 2020, the second in December 2021, and the third in January 2022. The first nest was donated to the bird collection of the *Instituto Nacional de Pesquisas da Amazônia* - INPA in Manaus, where it is currently awaiting cataloging. The other nests are in our private collection. The hair was obtained indirectly from our pet dog (cross between undefined breeds), which spends most of its time in the same backyard, but was not exposed systematically to attract birds for the collection of nest-building material. Rather, the hair was encountered spontaneously by the birds on the ground in the backyard of the residence.

The three nests were built close to the tip of a branch in the *Plinia* sp. tree crown, at a height of approximately 1.5 m above the ground. All three nests were approximately 40 cm in length, with the egg-laying chamber occupying around a quarter of this length. All the nests were attached to the branch with a mass of intertwined hair, with the egg chamber directly below this anchor, and then a long, apparently decorative hanging tail, which made up more than half of the total length of the nest (Fig. 1A). About 95% of the material used to build the nests was dog hair. In addition to the dog hairs, we identified small amounts of dry fibers in the nesting material, apparently derived from

palm leaves or grass. The hair was collected by the birds within a radius of approximately 2.5 m of the location of the nests. While each individual strand is approximately 5 cm in length, tufts of hair were collected from the ground for nest building (Fig. 1B). Fragments of soil were also found in the nest fabric, although we believe that this material was included unintentionally, apparently when attached to the tufts of dog hair found lying on the ground. We also found man-made materials in all three nests, including a sewing thread and kite lines. In one case, a piece of kite line runs almost the entire length of the nest (Fig. 2C). However, except for the dog hair, we were unable to identify the exact source of the nest-building materials. The entrance to the egg chamber is located at the side of the nest, and is partly covered by a downward-hanging flap of material, which obscures the interior of the chamber.

While Di Giacomo & Lanús (1998) recorded the use of mammalian hair for nest-building by South American birds, the use of this material by Amazonian birds of the family Rhynchocyclidae appears to be rare (Crozariol et al., 2016; Ferreira et al., 2019; Floriano et al., 2020; Haverschmidt, 1955; Ingels et al., 2016; Rodríguez-Ferraro & Azpiroz, 2006). In Argentina, Di Giacomo & Lanús (1998) found material similar to hair in the egg-laying chamber of a nest of the rhynchocyclid *Poecilatriccus plumbeiceps* (Lafresnaye, 1846). Although the nest structure is similar to that described previously for *T. maculatum*, our record appears to be the first to



**Fig. 2.** Nest of *Todirostrum maculatum* (Desmarest, 1806) built from domestic dog hair in the central Amazonia, Brazil. A. The *Plinia* sp. tree in which the nests were built. B. Piece of sewing line (arrow) in the nest, and. C. Kite lines (arrows) used to build one of the nests.

report mammalian hair being used as the primary building material of nests in this species. As sticks and even root fibers are the primary components of the nest in some cases (Haverschmidt, 1955; Marceliano, 1982; Melo & Greeney, 2019; Walther, 2004), the selection of the nest-building material appears to be opportunistic. In general, softer materials such as seed wool, feathers, and wild cotton are chosen for the construction of the egg chamber (Haverschmidt, 1955; Marceliano, 1982; Rodríguez-Ferraro & Azpiroz, 2006). We believe that *T. maculatum* may select nesting sites based on the proximity of the principal type of nest-building material, which would help reduce energy expenditure during nest building.

The presence of kite lines in the material used to build the nests further reinforces the conclusion that the birds construct their nests in the proximity of the building materials, given that these lines are often present in the backyard in which the nests were built. The use of material of human origin by birds for the construction of nests has been widely reported around the world (Jagiello et al., 2019). In urban environments, in fact, some opportunistic species may use materials that they would not normally find in their natural environment (Batisteli et al., 2019; Freile, 2015; Jagiello et al., 2019). In addition to lines and threads, birds may often use plastic fibers collected from anthropogenic habitats to build their nests (Batisteli et al., 2019; Freile, 2015; Jagiello et al., 2019). Given this, it seems likely that *T. maculatum* was able to adapt to the lack of natural materials at the study site by using the materials available in the urban environment.

Some *Todirostrum* species select nesting sites in the vicinity of wasp nests (Haverschmidt, 1955; Greeney, 2004), although there were no wasp nests in the *Plinia* sp. tree used by the nesting pair in the present study. It is interesting to note that the backyard in which this tree is located is relatively isolated, and is visited infrequently by humans, which may have been another factor contributing to the choice of the nesting site. Other rhynchocyclid species, such as *Rhynchocyclus olivaceus* (Temminck, 1820), may be sensitive to human interference, which may often cause pairs to abandon their nests (Floriano et al., 2020). In the present case, however, the *T. maculatum* pair built their nests repeatedly at the same site, even though the old nests were removed, the yard was cleaned regularly, and nearby trees were pruned.

Given this, one potential strategy for birdwatching would be for dog owners to place clumps of hair at strategic locations in their gardens to attract birds in a manner similar to the use of feeders or bird baths. This would permit the appreciation of the breeding habits of opportunistic nest builders, such as *T. maculatum*.

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