

FIRST NEST DESCRIPTION FOR NICEFORO'S WREN (*THRYOTHORUS NICEFORI*): A CRITICALLY ENDANGERED COLOMBIAN ENDEMIC SONGBIRD

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Primera descripción del nido del Cucarachero de Nicéforo (*Thryothorus nicefori*): un ave canora endémica de Colombia en peligro crítico.

Key words: Niceforo's Wren, *Thryothorus nicefori*, critically endangered, nest-site selection, endemic, Colombia, dry forest, conservation.

Wrens (Troglodytidae) typically form stable pairs which defend territories and are well known for their complex songs and antiphonal duets (Ridgely *et al.* 1989, Hilty & Brown 1986). In Neotropical *Thryothorus* wrens, pairs build dome-shaped nests with a lateral entrance (Ridgely *et al.* 1989, Ahumada 2001) and, in some species, males build multiple nests (Hilty & Brown 1986, Evans 1997, Ahumada 2001, Brewer 2001) as well as dormitory nests used for sleeping (Skutch 1960, Brewer 2001). Nests have been described for several species of *Thryothorus*, among them the Rufous-and-white Wren (*Thryothorus rufalbus*), a close relative of the Niceforo's Wren (*Thryothorus nicefori*) (Ridgely *et al.* 1989, Brewer 2001, Renjifo *et al.* 2002). The nest of the Niceforo's Wren, however, has not been described.

Niceforo's Wren is a critically endangered bird (IUCN red list), endemic to the Chicamocha Valley of Colombia in the eastern

Andes (Hilty & Brown 1986). The only known population of this species consists of approximately 50–100 birds. The total area of the Chicamocha Valley is about 300,000 ha between 600 m and 2300 m a.s.l. (Freile & Santander 2005). Some estimates suggest that the Niceforo's Wren is in continuous decline due to habitat degradation (Birdlife International 2000).

We conducted an exploratory conservation field study, Project Chicamocha, between 8 July 2004 and 14 January 2005, in order to obtain distribution and natural history data about the Niceforo's Wren. We observed this species in the provinces of Boyacá and Santander, along the Chicamocha, Sogamoso, Suárez, and Fonce river basins. In these regions, the environment has been highly modified for agriculture and only patches of Andean dry forest habitat remain (unpubl.). We found Niceforo's Wrens along streams where tangled riparian vegetation remains as



FIG. 1. Nest of Niceforo's Wren (*Tbryothorus nicefori*) at La Aguada (Galán, Santander Province, Colombia).

well as in shaded coffee and cacao plantation edges, at elevations between 1132 m and 1840 m. We provide here the first nest description for this species.

We discovered the first Niceforo's Wren nest (hereafter nest 1) on 19 August 2004 at an elevation of 1164 m in La Aguada, Galán, Province of Santander (06°38'N, 73°17'W). The nest was observed under construction, with a pair of wrens adding various materials, among them grasses and fibers from abandoned nests of other species. The nest was globular, with a lateral elbow-like entrance downwards, and was located 8.2 m above the ground in the fork of an introduced bush (*Ricinus communis*, Euphorbiaceae) (Fig. 1). A wasp nest (*Polistes* cf. *canadensis*, Vespidae) was attached nearby on another branch. The nest tree was located near a stream and a small road in a human-disturbed fruit farming area.

Remaining nearby trees were approximately 15 m tall. Understory vegetation surrounding the nest was comprised of dense vine tangle with abundant leaf-litter on the ground.

We found a second nest (nest 2) on 1 October 2004 at 1262 m altitude in Butaregua, Barichara, Santander Province (06°43'N, 73°12'W). The nest was observed under construction as individuals of a pair of Niceforo's wrens were seen carrying material to the nest while calling to each other. Calls were also elicited near the nest when other species (e.g., *Saltator albicollis*, *Thamnophilus multistriatus* and *Turdus ignobilis*) and humans approached. Nest 2 was located in the fork of an acacia tree (*Acacia* sp., Fabaceae), 7.75 m above the ground. Like nest 1, this nest was also near a wasp nest (Vespidae) and the habitat had similar vegetation structure. The forest canopy around the nest tree was approximately 15 m



FIG. 2. Nest 3 of Niceforo's Wren (*Thryothorus nicefori*) at Butaregua (Barichara, Santander Province, Colombia).

high with some emergent trees of 20 m. The understory was composed primarily of bushes and climbing plants with abundant leaf-litter. Nest 2 had the same elbow-like globular shape as nest 1, with construction materials such as moss-like bromeliads (*Tillandsia usneoides*, Bromeliaceae), long dry plant fibers, fungal rhizomorphs (*Marasmius* spp.) and withered parts of fern fronds.

Very near nest 2 (the same geographical coordinates), we found another nest (nest 3) on 3 October 2004 at 1187 m in a cocoa plantation terrace near a stream. The vegetation surrounding the nest was similar to nest 2, but with a maximum canopy of 12 m. This nest was 3.2 m above the ground, in the fork of a *Trichanthera gigantea* (Acanthaceae) tree, where a wasp nest (*Agelaiia* cf. *areata*, Vespidae) was also attached to one of the branches of the fork (Fig. 2). The pair entered and left the nest with food, and occasionally with moss-like

bromeliads (*Tillandsia usneoides*) or other plant fibers. We suspect that this nest contained nestlings but, the same as nest 1 and 2, we observed only *in situ* and did not inspect inside nests due to the conservation status of this species.

In San Gil, Santander Province, on 10 October 2004, we located a fourth nest (nest 4) at an altitude of 1196 m (06°32'N, 73°07'W). The surrounding vegetation was mostly composed of *Zanthoxylum* sp., *Z. fagara* (Rutaceae), *Myrsine* sp. (Myrsinaceae), *Lippia* sp. (Verbenaceae), deciduous species such as *Guazuma umifolia* (Malvaceae) and annual species of smaller biomass such as *Lantana* sp. (Verbenaceae) and some asteraceae. There were also abundant lianas, *Serjania* spp. (Sapindaceae), *Aristolochia maxima* (Aristolochiaceae), *Gonolobus* sp. (Asclepiadaceae), *Marsdenia* sp. (Asclepiadaceae), *Smilax* sp. (Smilacaceae) and *Tillandsia usneoides* (Bromeliaceae), among

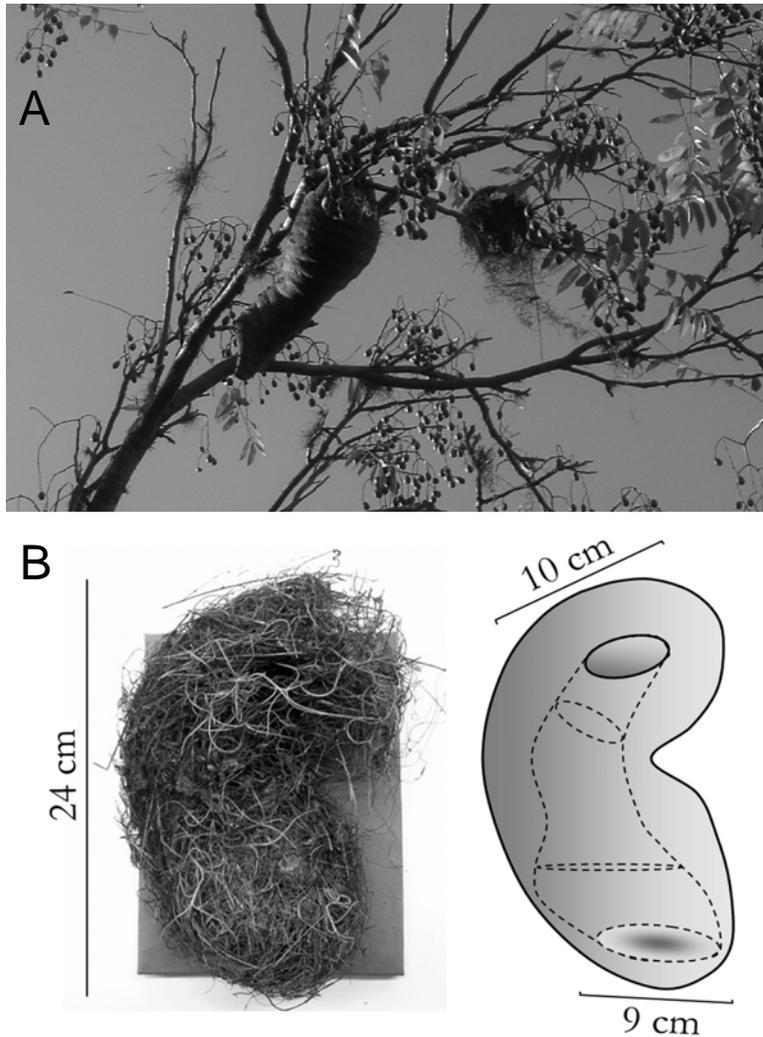


FIG. 3. (A) Nest of Niceforo's Wren (*Thryothorus nicefori*) at San Gil (Santander Province, Colombia); (B) Nest 4 and scheme of the inside room.

others. Nest 4 was located in a fork of a branch 10 m above the ground, on an emergent tree (*Cedrela odorata*, Meliaceae) that was 16.2 m tall, with a 57.6 cm diameter (at breast height). As in the previous cases, we found a wasp nest (*Epipona* sp., Vespidae) a short distance from the wren nest on the same main support branch (Fig. 3A). The wasp nest mea-

sured approximately 50 cm in length and its entrance faced the opposite direction to that of the entrance to the wren nest.

We collected nest 4 when it fell naturally (now stored in the nest collection at the "Instituto de Ciencias Naturales, Universidad Nacional de Colombia") and we were able to measure it in more detail. Similar to the first

nests here described, nest 4 was globular at the bottom with an entrance at the top to one side hung from the tree branches. The nest dimensions were 10 cm deep at the entrance, 24 cm long and 9 cm wide at the bottom (Fig. 3B). Nesting materials included vegetable fibers of *Tillandsia usneoides*, fungal rhizomorphs (*Marasmius* spp.), plant twigs and vines forming a very dense structure. We found the nest empty, although we observed some wrens entering it previously. We suspect this nest had been used as either or both dormitory and breeding nest. It has been reported that Rufous-and-white Wrens build two or three nests at a time inside a given territory and choose one for breeding; but Rufous-and-white Wrens have not been observed using nests as dormitories (Ahumada 2001, D. J. Mennill pers. com.).

Species of *Thryothorus* have been reported to build breeding nests in pairs (Skutch 1960, Brewer 2001), whereas single individuals mated build dormitory nests (Skutch 1960, S. V. Valderrama pers. observ.). However, breeding nests can be used as dormitory nests as well (Brewer 2001). Thus, we described nest 1 and 2 as breeding nests under construction and nest 3 as a breeding nest in an unconfirmed posterior stage.

It is clear from our observations that Niceforo's Wrens nest close to wasp nests. This kind of close association with wasps has been reported for Banded Wrens (*Thryothorus pleurostictus*) (Stiles & Skutch 1989), Rufous-and-white Wrens (D. J. Mennill pers. com.), and it has been studied in Rufous-naped Wrens (*Campylorhynchus rufinucha*) by Joyce (1993). It has also been reported for other tropical species (Wunderle & Pollock 1985, Fraga 1989, Dejean & Fotso 1995, Greeney *et al.* 2004, Beier & Tungbani 2006). Studies reveal a positive correlation between bird nest proximity to wasp's nests and the success of the nest, measured as offspring survival (Wunderle & Pollock 1985, Joyce 1993,

Dejean & Fotso 1995). As Niceforo's Wren constructs nests near wasp colonies, individual reproductive success could be influenced by the quantity of wasp colonies (Beier & Tungbani 2006). Therefore, it is very important to clarify the apparent association between Niceforo's Wrens and wasps in order to establish how significant their relationship is for the species reproductive output, and consequently for its conservation. Wasp colonies as nest site availability might be an indicator of both habitat availability and quality for assessment, in order to inform management decisions in conservation.

It is imperative that studies document further aspects of Niceforo's Wren behavior and ecology to understand and quantify factors contributing in the species decline, in order to develop effective conservation plans in an area under continuous and intense anthropogenic pressure.

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