ORNITOLOGIA NEOTROPICAL 20: 299–303, 2009

THE NEST OF THE STRIPE-NECKED TODY-TYRANT (*HEMITRICCUS STRIATICOLLIS*), WITH THE FIRST DETAILED NESTING DATA FOR THE DRAB-BREASTED PYGMY-TYRANT (*H. DIOPS*)

Guy M. Kirwan[1] & Andrew Whittaker[2]

[1]74 Waddington Street, Norwich NR2 4JS, UK. *E-mail:* GMKirwan@aol.com
[2]Museu Paraense Emílio Goeldi, CP 399, Belém, Pará, Brazil.

El nido del Titirijí Gorgiestriado (*Hemitriccus striaticollis*), con los primeros datos detallados sobre nidificación para el Titirijí Pechigrís (*H. diops*).

Key words: Stripe-necked Tody-Tyrant, *Hemitriccus striaticollis*, nesting, Drab-breasted Pygmy-Tyrant, *Hemitriccus diops*, Brazil.

The genus *Hemitriccus*, Cabanis & Heine, 1859, is usually considered to comprise c. 21 species (Ridgely & Tudor 1994, Clock 2004) of small, drab, and often difficult to identify Tyrannidae, which are distributed throughout the northern two-thirds of South America. Peak diversity in the genus is achieved in the Andes and eastern Brazil. Following the work of Traylor (1977), most subsequent authors have merged the following genera within *Hemitriccus*: *Snethlagea* (but see Cohn-Haft 1996), *Idioptilon*, *Microcochlearius*, and *Ceratotriccus*. However, a recent genetic study recovered evidence to resurrect the genus *Snethlagea* (Tello & Bates 2007). This study sampled just three species of *Hemitriccus* (*minor*, *zosterops*, and *margaritaceiventer*), each of which was found to occupy a different clade within the overall 'tody-tyrant' assemblage. Further molecular work clearly is required to assist in resolving the systematics of this group of Tyrannidae.

Nest architecture has been demonstrated to be an informative tool in revealing phylogenetic relationships amongst many suboscine passerines (e.g., Sheldon & Winkler 1999, Zyskowski & Prum 1999). Clock (2004) presented data concerning the nests of 11 of the 21 currently recognized species of *Hemitriccus*, but overlooked the published description of another, *H. kaempferi* (Mazar Barnett *et al.* 2000). However, for five of these species, the available data are extremely basic, being nothing more than a mention that the nest is pendent and or purse-shaped, and similar to others of the genus. The nest of one species, the Brown-breasted Pygmy-Tyrant *H. obsoletus*, is considered somewhat 'unusual' with respect to those described for congenerics because it is non-pendent (cf. Bencke *et al.*

2001, Clock 2004). The nest described by Bencke *et al.* (2001) pertained to the subspecies *H. o. zimmeri*, which exhibits some vocal differences from nominate *H. o. obsoletus* (both authors pers. obs.). Here, we describe for the first time the nest of *Hemitriccus striaticollis*, and provide the first detailed description of the nest of Drab-breasted Pygmy-Tyrant *H. diops*, a species for which only very basic data have been published. Together with the Flammulated Pygmy-Tyrant *H. flammulatus*, *H. diops* is generally considered to be the closest relative of *H. obsoletus*. All three species are largely dependent on bamboo (Ridgely & Tudor 1994) and they comprise the original constituents of the genus *Hemitriccus* (Hellmayr 1927), making the publication of additional nesting data of value in assessing the monophyly of this grouping (Bencke *et al.* 2001).

Stripe-necked Tody-Tyrant. During ornithological field work at the Reserva Particular do Patrimônio Natural do SESC Pantanal (16°39'S, 56°16'W), near Porto Cercado, southwest Mato Grosso, Brazil, a protected area of 106,644 ha (Antas 2004), H. Shirihai and GMK discovered a nest of Stripe-necked Tody-Tyrant in an advanced stage of construction, on 2 November 2006. The nest site was situated within a seasonally inundated gallery forest (canopy height c. 15 m, width of the forest strip c. 10–20 m) on the west bank of the Rio Cuiabá, which at this season (following two months of very little rainfall) was completely dry. Only one individual was seen visiting the nest at one time, but new material was brought as frequently as every 15–30 seconds, suggesting that both adults were involved in collecting it. Material was always collected some distance from the nest, the birds certainly departing at least 8 m on each occasion. At this stage, the birds were solely occupied with completing the inner lining of the nest, but it was not possible to identify the items being brought. On returning to the vicinity of the nest, the birds would fly in and initially perch within 2 m of the nest, remain < 5 seconds, and then fly directly into the nest. The nest was placed slightly less than 1 m above the level ground, which was entirely covered in dead leaves and some river debris, and within an area of comparatively dense understory (much of the gallery forest on the west bank of the river has a rather open understory).

The *H. striaticollis* nest was suspended, using plant fibers and some dark rootlets, from the horizontal branch of an unidentified, narrow-trunked understory tree (total height < 3 m), and the nest site was largely concealed by leaves from both nearby trees and the same tree. From a distance of > 5 m, these leaves completely obscured the nest from view. The nest's structure could be considered typical of the genus *Hemitriccus*, based on data summarized and collated by Clock (2004), the nest being pendent and somewhat 'purse-shaped'. Following the classification system proposed by Simon & Pacheco (2005), the nest can be described as 'closed/ovoid/pensile'. The outer structure comprised some live green mosses, and principally plant fibers and fine grasses, as well as a few dead brown leaves and small pieces of bark, which were used to 'disguise' the nest (a common tactic by many tyrant flycatchers). In order to avoid disturbing the nest building birds, we refrained from closely inspecting the inner cup, which appeared to be present, as is typical of nests of this genus (pers. obs.; Clock 2004). However, we noted the typical side entrance, sheltered by a slight overhang above it, and placed approximately midway between the top and base of the nest (see, e.g., photograph of the nest of Eye-ringed Tody-Tyrant *Hemitriccus orbitatus in* Fitzpatrick 2004: 230). Estimated from a distance of 1.5 m, the nest was c. 10 cm wide at the broadest point (in its middle), and c. 20 cm top to bottom, with some detritus hanging slightly below the main

ovoid shape of the nest, presumably to further disturb the nest's outline and make it less obvious to potential predators.

Few nesting data are available for those *Hemitriccus* species formerly placed in the genus *Idioptilon*. However, the nest data presented here accord reasonably well with those summarized for *H. margaritaceiventer*, *H. nidipendulus*, and *H. orbitatus* (Clock 2004), and the moss pendant nest with a side entrance built by *H. zosterops flaviviridis*, found by AW at São Gabriel do Cachoeira, Amazonas, Brazil. Antas (2004) mentioned that *H. striaticollis* breeds in July to October in the Pantanal, but based on the observations presented here this period can plainly be extended, probably until the year-end. Like most other members of *Hemitriccus* for which clutch size has been recorded, this species apparently lays two eggs (Clock 2004).

Drab-breasted Pygmy-Tyrant. On 3 October 2005, whilst leading a group of birdwatchers at a site known as Caetés, in Vargem Alta municipality, southern Espírito Santo, southeast Brazil, AW discovered an occupied nest of this species, which was independently found by GMK on 17 October. The habitat at this site can be characterized as Atlantic Dense Ombrophyllous Forest, with a canopy height of up to c. 30 m. The forest has many tall, epiphyte-covered trees, and abundant *Euterpe* palms, and is situated at 1100–1250 m (for further details, see Venturini *et al.* 2005).

The nest of *H. diops* was sited < 2.5 m from a dirt road through the forest, which receives some vehicle traffic, but is not heavily used, and c. 10 m from a clean-water stream that runs through much of the forest. The surrounding area, like much of this forest, has a dense understory, with many small trees and a 5-m long clump of *Chusquea* bamboo on a bank above the nest, and was on gently sloping ground. This nest was placed 1.8 m above the ground, and c. 0.75 m from the top of the steep bank, in an unidentified understory tree (maximum height unrecorded), and under the classification scheme proposed by Simon & Pacheco (2005) could be described as 'closed/globular/lateral'. However, the nest does not well fit their classification scheme, because the supporting branches were not exclusively lateral (see below), and at first glance the structure actually appeared like the typical 'hanging bag' of many tyrant flycatchers. Simon & Pacheco (2005) suggest that the combination 'closed/globular/pensile', the only other possible description for the nest described below, is yet to be recorded amongst Neotropical birds.

The outer structure principally comprised live green mosses and plant fibres, a few fungal rhizomorphs, along with some dark rootlets and dry stems, as well as a few strips of dry bark and several dead bamboo leaves, which were again presumably used to decorate and thereby 'disguise' the nest (Fig. 1). Although generally globular in shape, the maximum diameter of the nest was c. 12 cm, whilst from top to bottom the nest measured c. 16 cm, with one or two dry stems extending a further 7–8 cm below the main structure. It was attached near the top and along part of one side to a very narrow, drooping branch over a length of c. 5 cm, using many dark rootlets as the principal means of support, and much more loosely on the other side of the nest by an even smaller, near-vertical branch. The nest possessed a prominent and slightly rounded side entrance, which was situated close to the top of the nest, and protected by a small awning or overhang. A concentration of dead dry leaves directly below the overhang, and lacking any green moss, had been possibly been placed to mask the dark nest entrance. The nest's lining comprised pale buff-coloured plant down (obvious even from some distance because of the comparatively large nest entrance) and some strips of soft bark. On both visits, two largely

FIG. 1. Nest of Drab-breasted Pygmy-Tyrant *Hemitriccus diops*, Caetés, southern Espírito Santo, southeast Brazil, 17 October 2005 (William Price); the incubating bird can be just seen inside the nest.

white, and slightly subelliptical eggs with extremely sparse, tiny brown speckles (absent from the narrow end, and forming a slight band around the broadest part of the egg) were present in the deep cup in the nest. The cup measured c. 5 cm in diameter and 7 cm top to bottom. The incubating bird sat 'close' on the eggs until approached to < 1 m away. Clock (2004) could only report that the nest is "purse-shaped and pendent, with side entrance, suspended from end of twig", which was presumably adapted from Ihering (1904). Ihering's account, which also mentioned "a round opening in the middle protected by a shelter above", actually referred to *Platyrinchus mystaceus*, but he stated that the nest of *H. diops* (and several other tyrannids) is "similar". However, as already noted by Bencke *et al.*, Ihering's description of the nest of *P. mystaceus* was in fact incorrect, as it is now known to build an open-cup nest. In fact, the nest of *H. diops* described here actually resembled, in several respects, that of *H. obsoletus zimmeri* described by Bencke *et al.* (2001) from southern Brazil, e.g., in the very deep cup, many of the general nest materials, the overall shape of the nest, and, in part, its structural support.

Nonetheless, it should be emphasized that the nest described here was, unlike the *obsoletus* nest described by Bencke *et al.* (2001), not sited within bamboo and, although the nest was in part laterally supported, the branches that held the structure were neither growing upwards from the ground, nor *Chusquea* bamboo. It might also be remarked that one nest,

of four, belonging to *H. orbitatus* discovered by D. Buzzetti, *in* Bencke *et al.* (2001), was not pendent, whereas the other three were. As already noted by Bencke *et al.* (2001), fieldworkers should continue to publish robust breeding data for this genus (and many Neotropical genera), in order to contribute to our understanding of phylogenetic relationships within such poorly known taxa as the tody-tyrants.

ACKNOWLEDGMENTS

GMK thanks H. Shirihai for funding his Brazilian fieldwork in 2006, and for enabling many of his recent travels in the Neotropics. AW thanks Victor Emanuel Nature Tours for facilitating his visits to Espírito Santo. W. Price supplied the photograph of the *H. diops* nest, and A. C. Venturini and P. R. Paz enabled our access to the beautiful forest at Caetés. K. J. Zimmer, an anonymous referee, and the editor, A. Weller, made pertinent comments on the submitted manuscript.

REFERENCES

Antas, P. T. Z. 2004. Pantanal: guia de aves. SESC Departamento Nacional, Rio de Janeiro, Brazil.

Bencke, G. A., C. S. Fontana, J. K. F. Mähler, & C. M. Joenck. 2001. First description of the nest of the Brown-breasted Pygmy-tyrant (*Hemitriccus obsoletus*) and additional information on the nesting of the Striolated Tit-spinetail (*Leptasthenura striolata*). Ornitol. Neotrop. 12: 1–9.

Clock, B. M. 1994. Genus *Hemitriccus*: species accounts. Pp. 321–328 *in* del Hoyo, J., A. Elliott, & D. A. Christie (eds.). Handbook of the birds of the world. Volume 9: Cotingas to pipits and wagtails. Lynx Edicions, Barcelona, Spain.

Cohn-Haft, M. 1996. Why the Yungas Tody-tyrant (*Hemitriccus spodiops*) is a *Snethlagea*, and why it matters. Auk 113: 709–714.

Fitzpatrick, J. W. 1994. Family Tyrannidae (tyrant-flycatchers). Pp. 170–462 *in* del Hoyo, J., A. Elliott, & D. A. Christie (eds.). Handbook of the birds of the world. Volume 9: Cotingas to pipits and wagtails. Lynx Edicions, Barcelona, Spain.

Hellmayr, C. E. 1927. Catalogue of birds of the Americas and the adjacent islands. Part 5, Tyrannidae. Field Mus. Nat. Hist., Publ. 242, Zool. Ser. 13, Chicago, Illinois.

Ihering, R. von. 1904. The biology of the Tyrannidae with respect to their systematic arrangement. Auk 21: 313–322.

Mazar Barnett, J., G. M. Kirwan, M. Pearman, L. N. Naka, & J. A. Tobias. 2000. Rediscovery and subsequent observations of Kaempfer's Tody-tyrant *Hemitriccus kaempferi* in Santa Catarina, Brazil, with notes on conservation, life history and plumage. Bird Conserv. Int. 10: 371–379.

Ridgely, R. S., & G. Tudor. 1994. The birds of South America. Volume 2. Univ. of Texas Press, Austin, Texas.

Sheldon, F. H., & D. W. Winkler. 1999. Nest architecture and avian systematics. Auk 116: 875–877.

Simon, J. E., & S. Pacheco. 2005. On the standardization of nest descriptions of Neotropical birds. Rev. Bras. Ornitol. 13: 143–154.

Tello, J., & J. M. Bates. 2007. Molecular phylogenetics of the tody-tyrant and flatbill assemblage of tyrant flycatchers (Tyrannidae). Auk 124: 134–154.

Traylor, M. A. 1977. A classification of the tyrant flycatchers (Tyrannidae). Bull. Mus. Comp. Zool. 148: 128–184.

Venturini, A. C., P. R. de Paz, & G. M. Kirwan. 2005. A new locality and records of Cherry-throated Tanager *Nemosia rourei* in Espírito Santo, south-east Brazil, with fresh natural history data for the species. Cotinga 24: 60–70.

Zyskowski, K., & R. O. Prum. 1999. Phylogenetic analysis of the nest architecture of Neotropical ovenbirds (Furnariidae). Auk 116: 891–911.

Accepted 3 April 2009.