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Description of the Nest and Eggs of the Black-cheeked Ant Tanager (*Habia atrimaxillaris*)

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ABSTRACT.—The Black-cheeked Ant Tanager (*Habia atrimaxillaris*) is endemic to the Osa Peninsula on the south Pacific coast of Costa Rica. There is little knowledge of the natural history and especially the reproductive habits of this species. We describe the nest and eggs of the Black-cheeked Ant Tanager based on observations of three nests near Puerto Jiménez, Puntarenas, Costa Rica. The nests and eggs were similar to other species of *Habia* supporting previous work suggesting relationships within *Habia*. Received 8 October 2008. Accepted 3 February 2009.

The five species of ant tanagers (*Habia* spp.) inhabit rainforests (0–1,800 m above sea level), throughout much of the Neotropics. The Black-cheeked Ant Tanager (*H. atrimaxillaris*) has the smallest distribution of the two widespread and three range-restricted species (Isler and Isler 1987, Stotz et al. 1996). It is restricted to forest edges and understory of primary and secondary forest in the Osa Peninsula on the south Pacific coast of Costa Rica (Isler and Isler 1987, Stiles and Skutch 1989). This narrow distribution has led to its classification as an endangered species by Bird-Life International (2007), as it is threatened by deforestation and urban development in the Golfo Dulce area. The last 20 years have witnessed a reduction in habitat availability for this species (Roxero-Bixby et al. 2002, Barrantes and Lobo 2005), likely with negative impacts on population size. Knowledge about the natural history of this ant tanager is poor, and nothing is known about its reproductive habits (Isler and Isler 1987, Stiles and Skutch 1989). This lack of information may hinder effective management and conservation. We describe the nest and eggs of the Black-

cheeked Ant Tanager based on observations of three nests near Puerto Jiménez, Puntarenas, Costa Rica.

METHODS

Our study area was mature secondary forest at Bosque del Río Tigre Lodge (BRTL) and Río Pizote (08° 31' N, 83° 24' W), Puerto Jiménez, Puntarenas, at an elevation of 130 m. The habitat in the area is tropical wet forest, characterized by a canopy 30–40 m in height, where common tree species include *Pterygota excelsa* (Sterculiaceae), *Schyzolobium parahyba* (Caesalpinaceae), *Brossimum utile* (Moraceae), *Ochroma lagopus* (Bombacaceae), *Goethalsia meiantha*, and *Trichospermum meiantha* (Tiliaceae). The open understory includes abundant *Heliconia* spp. (Heliconiaceae), *Psycotria* spp. (Rubiaceae), *Calathea* spp. (Marantaceae), and several species of palms (Cyclanaceae and Arecaceae).

We made daily observations from January to April 2007 at BRTL and once a week at Río Pizote from January to March 2007. Our nest descriptions are based on three nests, two of which were collected. We measured the inner diameter and depth at each nest collected with callipers. Two eggs were measured at one nest and the eggshells were collected after depredation. All collected samples were deposited at Museo de Zoología, Escuela de Biología, Universidad de Costa Rica.

RESULTS

Nesting Season.—We observed two adult Black-cheeked Ant Tanagers carrying vegetation fibers into a nest on 28 January 2007. The nest appeared nearly complete and was 68 cm above ground level in a Melastomataceae shrub in an area of open understory at the edge of secondary forest at BRTL. The nest contained two eggs on 4 February. A second, completely finished nest was found by E. Vargas, G. Flores, and P. Elizondo on

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3 February 2007, 1.5 m from the Pizote River bank in young secondary forest. The nest was between the leaves in the top of a *Clavija* sp. (Theophrastaceae) shrub, 2 m above ground level. This nest was destroyed 2 days later, probably by a mammal. The third nest was found on 15 February 2007 at the top of a creek bank inside a riverside secondary forest at BRTL. The nest was embedded between the topmost leaves of a *Dieffenbachia* sp. (Araceae) plant, 50 cm above ground level and contained two eggs on 20 February. The nest held two nestlings on 6 March, which we found dead one week later. We also observed a pair of ant tanagers carrying palm fibers on 16 February 2007 in old secondary forest at BRTL but, despite exhaustive searching, we were unable to locate the nest.

Nest Description.—Nests were supported at the bottom and sides by branches or leaf petioles without being woven around the support structures. Nests were bulky, open cups built of three layers (Fig. 1). The exterior layer was thickest, composed of large dead leaves (e.g., Melastomataceae, *Heliconia* sp., and ferns) and parts of twigs and vines. The thickest layer was 71 mm at the widest part, which made the nest look like a group of dead leaves. The middle layer was composed of thinner dry twigs and vines similar to those used in the exterior layer, and grasses. The inner layer was composed solely of black fungal rhizomorphs. The nest ($n = 2$) cup depths were 31 and 20 mm, and the inner cup diameters were 65.5×71.0 and 64.6×70.7 mm, respectively. Nest height ($n = 3$) placement varied from 50 cm to 2 m (1.06 ± 0.82 cm, $\bar{x} \pm$ SD), and nests were near the top of the supporting plant.

Eggs.—Both eggs were immaculate white, and slightly transparent when fresh. Measurements of the two eggs were 26.05×18.89 and 26.57×18.94 mm.

DISCUSSION

The breeding season for this species, based in our observations and those of Stiles and Skutch (1989), lasts from mid January to May during the dry season and the beginning of the rainy season in this area. The nest of the Black-cheeked Ant Tanager is more similar to those of Red-throated (*H. fuscicauda*) and Sooty (*H. gutturalis*) ant tanagers, which are a thick, bulky cup (Willis 1961, Stiles and Skutch 1989). The nest is dissimilar to that of the Red-crowned Ant Tanager (*H. rubica*), which is described as a thin and

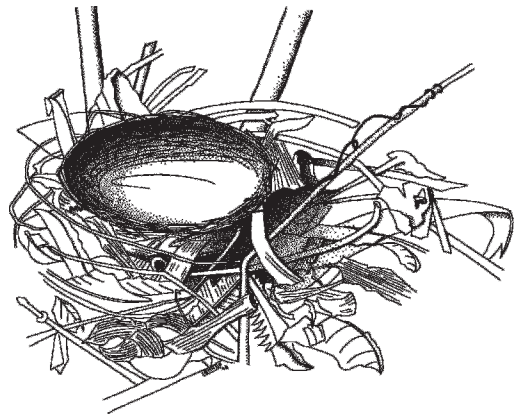


FIG. 1. Nest of Black-cheeked Ant Tanager (*Habia atrimaxillaris*), 4 February 2007 at Bosque del Río Tigre Lodge, Puerto Jiménez, Costa Rica. (Sketch by Luis Sandoval).

shallow cup (Skutch 1954, Willis 1961, Stiles and Skutch 1989). The all white eggs we observed are more similar to those described for the Red-throated Ant Tanager (Willis 1972, Stiles and Skutch 1989), but unlike the spotted eggs described for Red-crowned and Sooty ant tanagers (Isler and Isler 1987, Stiles and Skutch 1989). This observation is congruent with the suggestion by Willis (1972) that Black-cheeked, Red-throated, and Sooty ant tanagers are closely related. The Black-cheeked and Red-throated are also closely related based on shared morphological characters. If these relationships are correct, biogeographically they would also agree with the sister relationships found between other endemic species of the Costa Rican Pacific rainforest in the Caribbean rainforest zone. For example, Cherrie's and Passerini's tanagers (*Ramphocelus costaricensis* and *R. passerini*; Hackett 1996), Charming and Blue-chested hummingbirds (*Amazilia decora* and *A. amabilis*; Stiles and Skutch 1989), Black-hooded and Western Slaty antshrikes (*Thamnophilus bridgesi* and *T. atrinucha*; Brumfield and Edwards 2007), and Orange-collared and White-collared manakins (*Manacus aurantiacus* and *M. candei*; Brumfield and Braun 2001).

Nest placement (e.g., branch forks and leaf petioles) by Black-cheeked Ant Tanagers was similar to other *Habia* ant tanagers (Isler and Isler 1987, Stiles and Skutch 1989). Of the three nests we found, one was physically damaged, possibly by mammalian predators (Davison and Bollinger 2000). There was no visible damage in two nests,

a pattern more consistent with reptilian predation (Robinson et al. 2005a, b). All nests found were in disturbed habitats (e.g., forest edges, secondary forest) indicating apparent habitat preferences of Black-cheeked Ant Tanagers. There is some evidence that edge and secondary forest have higher rates of nest predation (Tewksbury et al. 2006). Further study is needed to learn how or if habitat selection affects abundance and reproductive success, and to plan strategies for conservation of this endangered species.

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