A new species of antbird in the Hypocnemis cantator complex from the Aripuanã-Machado interfluvium in central Amazonian Brazil

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In June, 2000, during a brief visit to the town of Manicoré on the right bank of the middle Rio Madeira in Amazonas, Brazil, BMW and MCH were attracted to an unusual vocalization of Hypocnemis‘ cantator (Warbling Antbird) that appeared to be homologous to a call commonly heard from other populations across the wide range of the complex. Fieldwork by BMW in July and October, 2001 on the middle and lower Rio Aripuanã and at the mouth of the Rio Roosevelt, and in June, 2002 on the lower Rio Machado (or Ji-Paraná) in Rondônia with MCH defined the distribution of this unique call, restricted to the Aripuanã-Machado interfluvium. The taxonomic study of the H. cantator complex presented by Isler et al. (2007) confirmed the diagnostic characteristics of this vocalization and mapped its geographical distribution, but did not introduce a name for the population (which was referred to as “implicata 2, taxon novum”). Collection of fresh specimens of most members of the H. cantator complex accompanied by recordings of their songs and calls has permitted DNA-based phylogenetic analyses that corroborate the taxonomic revision proposed by Isler et al. (2007) including the significant differentiation of “implicata 2”, which we are now prepared to name:

Hypocnemis rondoni
Manicoré Warbling-Antbird
Cantar-de-rondon (Portuguese)

Holotype.— Museu de Zoologia da Universidade de São Paulo (MZUSP) 92306, adult male from Brazil: Mato Grosso; left bank of the Rio Roosevelt in the Municipality of Colniza (09°07'54"S/60°42'31"W) at about 150 m elevation; collected 5 August 2011 by Fabio Schunck, prepared by Marcelo Félix. Voice recorded by Bret M. Whitney, original numbers BMW 13977-79; Macaulay Library of Natural Sounds (ML) 169980; Isler inventory (ISL) BMW C 0518. Pectoral muscle tissue preserved in approximately 96% alcohol: MZUSP 92306, field number ROO-09.

Diagnosis: Morphology.— As is typical of the several allospecies in the Hypocnemis cantator complex, morphological and plumage differentiation is weak. Based on the large series of the Hypocnemis cantator complex housed in the collections of MZUSP and the Museu Paraense Emílio Goeldi (MPEG), H. rondoni shows, on average, stronger rufous edging on the bases of the rectrices. Voice.— The “common call” (sensu Isler et al. 2007) is immediately distinguishable in the field from those of all other members of the complex and, in spectrographic analysis, by its structure and pace (described below). Male loudsongs are distinguished from those of the closely related H. ochrogyna (Rondônia Warbling-Antbird) by three characters; female loudsongs by one (Isler et al. 2007). Selected audio files for inter-taxon comparisons, including those used for spectrograms in Isler et al. (2007) and this paper, are available for listening to on the Internet Bird Collection (IBC) website. Genetic divergence.— Separated from its sister-species H. ochrogyna by approximately 4.2% sequence divergence in the mitochondrial gene ND2 (see Phylogenetic relationships, below).

Distribution.— Restricted to central Amazonian Brazil on the right bank of the Rio Madeira in the Aripuanã-Machado interfluvium: from the left bank of the Rio Aripuanã upriver to its confluence with the Rio Roosevelt, from which point upriver it is known only from the left bank of the Roosevelt in the state of Amazonas and extending into northwest Mato Grosso south and west to the right bank of the Rio Machado (or Ji-Paraná) in the state of Rondônia; southern range limits unknown (Fig. 1).

Description of holotype.— See color illustration. Alphanumeric color designations determined through direct comparison with Munsell soil color charts (1994); colors in quotation marks are chart designations. Plumage fresh and un worn, tail and wing not in molt; skull 100% ossified. Forecrown blackish directly over base of bill, becoming whitish to either side to blend with whitish lores. Crown blackish with a pale central stripe imparted by whitish proximal webs on these tiny feathers, appearance of stripe varying toward centralized spot-streaking depending on feather arrangement. Whitish superciliaries contrast with blackish sides of crown and prominent blackish line from lores posterior through eye; auriculles similarly whitish and defined along the lower edge by a uniformly narrow blackish malar streak. Nuchal region blackish irregularly speckled whitish. Mantle and back feathers blackish with whitish proximal and “olive brown” (2.5Y 4/4) distal margins pro-

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**Figure 1.** Geographic distribution of taxa in the Hypocnemis cantator complex in south-central Amazonian Brazil. Some symbols were shifted slightly from georeferenced locations to permit better clarity of relative positions at this scale (the map is viewable at larger scale in online SI). Red dots = H. rondoni. Red star = type locality of H. rondoni. Black squares = H. ochrogyna. Black triangles = H. peruviana. Black diamonds = H. striata implicata. The white circle on the right bank of the Rio Roosevelt marks an area from which we have recordings of both striata and ochrogyna. A white ? indicates areas that have not been inventoried where range limits of taxa need to be determined. Adjacent letters provide documentation: S = specimen; V = vocal recording. Black lines mark the boundaries of Brazilian states as indicated by their official abbreviations:

- AM = Amazonas
- RO = Rondônia
- MT = Mato Grosso

The federal highway BR-230 (“Transamazônica”) is shown in white.

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**Etymology.** — Cândido Mariano da Silva Rondon (1865-1958) was the first one to use the name Hypocnemis rondoni. The name is a tribute to Cândido Mariano da Silva Rondon, a Brazilian explorer, botanist, zoologist, and linguist, who was one of the key figures in the exploration of the Amazon rainforest. The pronunciation of “Rondon” is: roh-DON-nee, with the accent on the final syllable. We think “Rondon’s Warbling-Antbird” would be confusingly similar to the name of H. ochrogyna, Rondonia Warbling-Antbird.

**Remarks.** — The allotype of Hypocnemis rondoni is MZUSP 92305, adult female, from the same locality as the holotype. The remaining paratypes of H. rondoni are the following fifteen specimens: MZUSP 62294 male (AM, left bank rio Aripuanã at Prainha), 80610 male, 80611 male, 80617 male, and 80615 female (AM, left bank rio Roosevelt at “trilha Esperança”); MPEG 31146 female (AM, left bank rio Aripuanã at the mouth of the rio Guairá), 57661-57665 female, male, male, female, male respectively, (AM, Manicoré, “rodovia do estanco” km 126-137); and Instituto Nacional de Pesquisas da Amazônia (INPA) 749 female (AM, left bank rio Aripuanã at rio Arawaunha), 1798 sex unknown (RO, right bank upper rio Machado in Reserva Biológica do Jaru). Louisiana State University Museum of Natural Science (LSUMNS) 182835 male and 182836 female (MT, left bank rio Roosevelt).

Sex for sex, there is minor variation among specimens in the extent (mostly width) of the breastband and pattern of dark markings on individual feathers comprising it, and also in size and extent of pale markings on the crown and wing coverts and width of dark streaking in the mantle, but none of this is pertinent to diagnosability of the taxon.

**Ecology and behavior.** — Hypocnemis rondoni, like other members of the H. cantator complex, forages in the understory of terra firme forest and joins mixed-species flocks only when these pass through its territory. It does not appear to be associated with any microhabitat variance but tends to occupy borders of light gaps, treefalls, road edges, and other places where sunlight penetrates to the forest understory promoting locally denser vegetative growth. Two stomachs were examined, one of which held insects (Coleoptera and Orthoptera) and one had material too fully digested to identify; stomach contents are preserved at the MZUSP. The nest and eggs of H. rondoni remain unknown.

High-definition video of Hypocnemis rondoni in habitat may be viewed on the IB.C website.

**Vocalizations.** — When compared to common calls of other taxa in the Hypocnemis cantator complex (Fig. 2), the common call of rondoni is unique (Isler et al. 2007). This vocalization (n = 25 from localities indicated “V” on Fig. 1; see SI for a list) typically consists of four, less often three or five, notes. The first note is short but usually embellished with overtones, typically rises in frequency, and has a unique, sereeechly quality. The subsequent two, three, or four short notes are delivered at successively higher frequencies although the final two notes are sometimes at the same frequency. Pace is rapid, the most rapid of any Hypocnemis (cantator) population, and rondoni never ends its call with raspy notes as do some other populations. Principal
Identification information: Isler et al. (2007) demonstrated that common calls were important species-level indicators in the Hypocnemis cantator complex.

Although indistinguishable from the neighboring striata population to the north, the male and female loudsongs of rondoni were found in an earlier study (Isler et al. 2007) to differ discernibly from ochrogyna, the population to the south, by three characters and one character respectively and from peruviana to the west in an even greater number of vocal characters. Vocal analysis for this study documented loudsong types of both striata and ochrogyna in close proximity on the right bank of the Rio Roosevelt (Fig. 1, symbols circled). Whether this interesting situation reflects sympathy of two species or perhaps introgression between them remains a (fascinating!) subject for further research.

Phylogenetic relationships.— DNA sequence data for the mitochondrial gene NADH subunit 2 (ND2, 1041 base pairs) were obtained for 63 individuals in the genus Hypocnemis from scattered locations across its distribution, representing the seven currently recognized species (see SI for a list of ingroup and outgroup taxa). Phylogenies by maximum-likelihood and Bayesian inference methods (see details in SI) were largely consistent with a previous species-level phylogenetic hypothesis of the genus Hypocnemis (Tobias et al. 2008; Fig. 3). We identified, however, three well-supported lineages south of the Amazon and east of the Madeira instead of two: H. striata, H. ochrogyna, and H. rondoni. The latter two represent genetically distinctive groups that replace each other across the Aripuanã/ Roosevelt and Machado rivers and are more closely related to each other than they are to any other lineage in the genus. These results confirm that H. striata (sensu Isler et al. 2007) is paraphyletic; additional observed genetic structure within it remains unresolved and awaits further analysis of a denser and appropriately geographically distributed sample. For the time being, at least, we recommend maintaining implicata and affinis as subspecies.

Conservation.— Hypocnemis rondoni has the most restricted global population of any member of the Hypocnemis cantator complex and a smaller population than most currently recognized species of Amazonian birds, but it is not currently threatened by anthropogenic alteration of its habitat or other sources. Of great concern, however, is the fragmentation and outright destruction of forest in the narrow headwaters region of the Machado, Roosevelt, and Aripuanã rivers, which is mostly unprotected, and some of these watersheds will soon be altered drastically by installation of massive hydroelectric dams. Unless this area is adequately sampled very soon, we stand to lose much critical information on the processes involved in the differentiation of Amazonian birds in general and the dynamics of secondary contact in particular.

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**Literature Cited**

