Geographic distribution, population size, conservation status and type locality of Slender Antbird *Rhopornis ardesiacus*

Edson Ribeiro Luiz, Sidnei Sampaio dos Santos, Fernando Moreira Flores, Giancarlo Zorzin, Harildon Machado Ferreira, Emília Camurugi, Hermilino Danilo Santana de Carvalho and Romulo Ribon

Received 20 October 2014; final revision accepted 24 February 2015
Cotinga 37 (2015): 101–106

Nós trazemos informações sobre a distribuição geográfica, a estimativa populacional e o estado atual de conservação do gravatazeiro *Rhopornis ardesiacus*, especie ameaçada de extinção. Discutimos também sua localidade tipo e outros registros históricos. O número de localidades onde a espécie é conhecida aumenta agora de seis para 17, com uma extensão de ocorrência de 19.750 km^2. Sua população global provavelmente é superior a 2.500 indivíduos maduros, mas sua área de ocupação atual não supera 500 km^2. Apesar de alguns avanços de conservação obtidos na última década para essa espécie, a situação de suas populações remanescentes ainda é grave.

Slender Antbird *Rhopornis ardesiacus* is the sole representative of its genus and was described in 1831 by German naturalist, Maximilian, Prince of Wied, from an unspecified locality north of Vitória da Conquista in eastern Bahia. In 1928, 111 years after Wied's expedition, Emil Kaempfer collected the same species at Boa Nova and Ituaçú[9], and in 1977 it was also found in the municipality of Jequié[11]. More recently, the species has been discovered further north at, among other localities, Irajuba[4] and Jaguaquara[1]. For many years the species was considered endemic to the 'Planalto da Conquista', where the predominant vegetation is *mata-de-cipó*[11], an ecotone between the Atlantic Forest, to the east, and the Caatinga to the west. However, in 1999 *R. ardesiacus* was found at Fazenda Santana, on the left bank of the rio Jequitinhonha, Salto Divisa municipality, in extreme north-east Minas Gerais[10]. This discovery revealed a large gap in the species' distribution, between the latter locality and the records in Bahia. In 2007–14 we surveyed localities north and south of Boa Nova with the aim of contributing to a better understanding of the current conservation status of *R. ardesiacus*. Our surveys were conducted using binoculars and playback of the species' song and calls.

Results

We recorded *R. ardesiacus* in 11 additional municipalities, six of them south, and five north, of Boa Nova as follows.

Brejões.—12 individuals (including some sound-recorded) on 6–7 October 2007 at Fazenda Lagoa do Morro (13°04'58.6"S 39°51'31.5"W; up to 750 m) c.7 km west of the town. The farm mostly comprises pastures while the legal reserve (c.600 ha) protects the largest representative remnants of the forest that once covered the area. These fragments currently comprise a mix of deciduous forest and *caatinga*, with abundant bromeliads (*Aechmea* and *Ananas* spp.) in the understorey. The general appearance of the region reflects its heavy anthropogenic use, both for agriculture (coffee) and livestock (beef cattle). In addition to *R. ardesiacus*, the Near Threatened Caatinga Antwren *Herpsilochmus sellowi* was also found.

Lafaiete Coutinho.—At least eight *R. ardesiacus* seen on 28 October 2012 in the headwaters of the rio Jequiezinho, a tributary of the rio de Contas (13°40'17.6"S 40°17'07.2"W; 519 m), in an area with large strips of arboreal *caatinga* bordering semi-deciduous Atlantic Forest. Yellow-legged Tinamou *Crypturellus noctivagus zabele* (which is heavily poached), Narrow-billed Antwren *Formicivora iheringi*, and several species endemic to the Caatinga biome, e.g. Greater Wagtail-Tyrant *Stigmatura budytoides*, White-throated Seedeater *Sporophila albogularis*, Silvery-cheeked Antshrike *Sakesphorus cristatus* and White-browed Antpitta *Hylopezus ochroleucus*, also occur in the area.

Maracás.—Seven *R. ardesiacus* on 1 May 2009 (sound-recorded) in a 90-ha forest fragment (13°27'61"S 40°28'82"W; c.650 m) 13 km west of the town. The fragment is located along the BR-330 highway, which connects Maracás and Contendas do Sincorá. Topography is relatively flat and comprises part of the Maracás Plateau, which constitutes the division between the rios de Contas and Paraguaçu watersheds. Vegetation is Sub-Montane Deciduous Forest[6]. Native forest is restricted to small to mid-sized fragments (50–300 ha) of *mata-de-cipó*, with fewer lianas and bromeliads in the understorey than in forests typical of Boa Nova. *R. ardesiacus* is locally known as 'pêga-do-gravatá' and its habitat is being heavily degraded as native forests are cut to make way for eucalyptus plantations.

Manoel Vitorino.—More than ten on 29 November 2005 in forest fragments at Fazenda Mato Verde (14°15'47"S 40°25'38"W), atop the

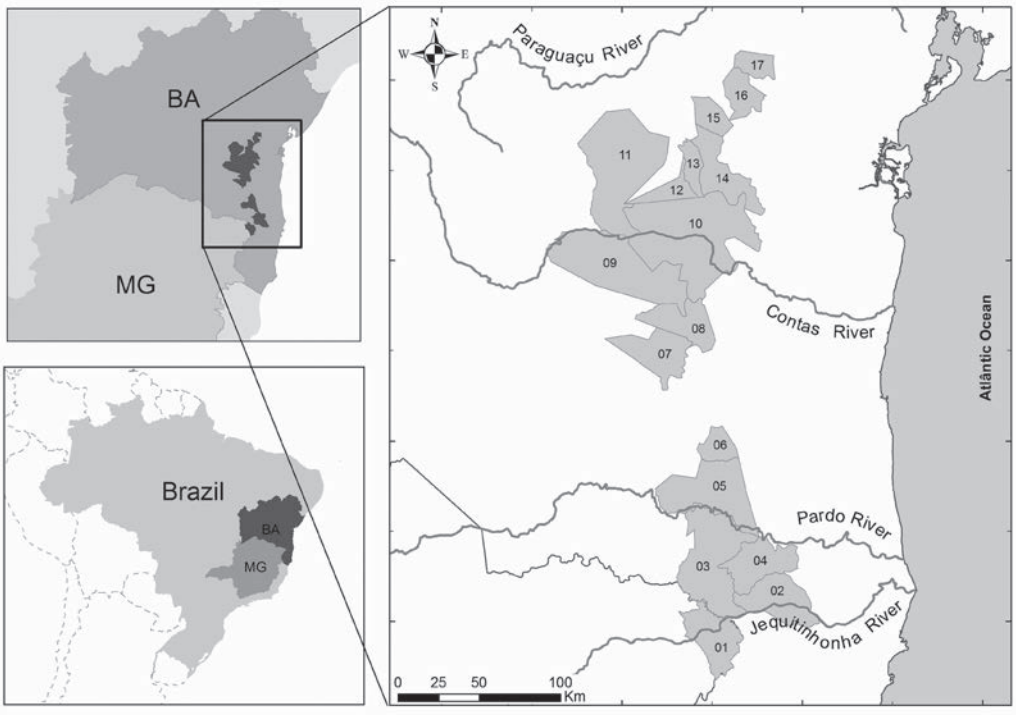


Figure 1. Known localities for Slender Antbird *Rhopornis ardesiacus*: 1. Salto da Divisa; 2. Itapebi; 3. Itarantim; 4. Potiraguá; 5. Itororó; 6. Itapetinga; 7. Poções; 8. Boa Nova, 9. Manoel Vitorino; 10. Jequié, 11. Maracás; 12. Lafaiete Coutinho; 13. Itiruçú; 14. Jaguaquara; 15. Irajuba; 16. Brejões; and 17. Milagres. BA= Bahia; MG = Minas Gerais.

Serra do Recreio (south of Salgado Grande). The region has a slightly hilly topography, reaching up to 700 m and narrow valleys. Native vegetation is similar to the typical Wooded Steppe Savanna of the Caatinga biome[6] with patches of vegetation similar to *mata-de-cipó* on hilltops. Native forests in valleys have been destroyed, replaced by open shrublands and pastures of exotic grasses. Remnant *mata-de-cipó* is isolated on the tops of the highest hills such as Serra do Recreio.

Milagres.—Three pairs on 17–19 April 2013 (photos and sound-recordings) within a fragmented landscape, at c.730 m, of deciduous forest and *caatinga* amid pastures (12°54'13.9"S 39°50'53.5"W), nearly 4.5 km from the town. The birds were mainly in areas with many *Ananas* and *Aechmea* bromeliads. Remnant forests are confined to hilltops and are frequently invaded by cattle moving between different pastures, damaging the bromeliad-dominated understorey.

Poções.—Five on 2 February 2006 in a forest fragment (14°32'20"S 40°19'15"W; 580 m) of c.400 ha, at the left bank of the rio Mulheres (in the rio Gongogi watershed), near the town of Morrinhos. Topography is undulating and the vegetation Seasonal Sub-Montane Deciduous Forest[6].

Itapetinga.—12 birds (some photographed) on 11 August 2008 in a quite degraded forest, with much Spanish moss *Tillandsia* sp., many Bombacaceae trees and *Ananas* bromeliads, surrounded by exotic pastures, at Fazenda Caracol (15°13'77.1"S 39°57'57.3"W; c.300 m), near the dirt road to Palmares.

Itororó.—At least six pairs in a forest fragment of c.500 ha on 11 August 2008. The fragment lies at 250 m, at Fazenda Barro Branco (15°08'78.6"S 39°57'40.2"W), 5 km from Itororó, within the rio Colônia micro-watershed. The forest fragment is well-preserved Sub-Montane Deciduous Forest[6].

Potiraguá.—A male video-recorded on 11 September 2008 in a forest fragment (15°32'60.6"S, 39°52'53.1"W; 210 m) 6 km from the right bank of the rio Pardo and near the BA-270 highway, 7 km from Potiraguá. The region has been severely disturbed by livestock in recent decades, but there are still some fragments of native vegetation either side of the highway that should be surveyed for *R. ardesiacus* in the future.

Itarantim.—At least eight on 25 March 2013 and 19 August 2013 in a 421-ha forest fragment (15°58'22.33"S 39°53'54.56"W). We found cattle grazing within the forest, as well as evidence of recent logging activity. Of those municipalities we visited, Itarantim is the most degraded with few remaining forests.

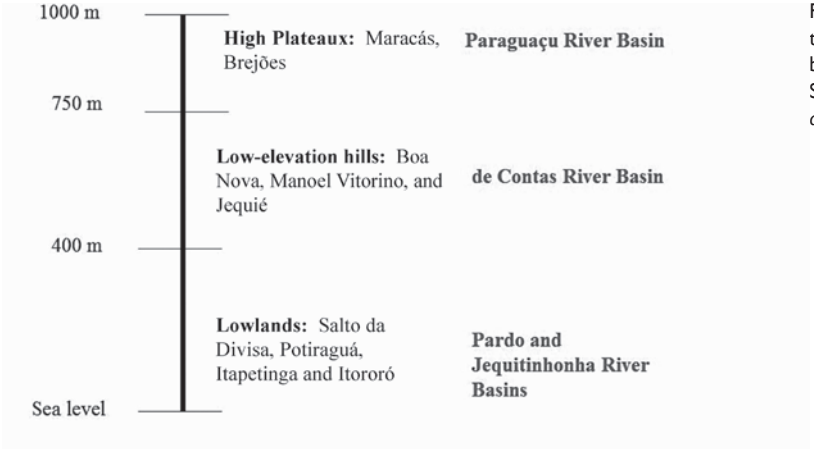


Figure 2. Altitudinal and topographic profile and river basins within the range of Slender Antbird *Rhopornis ardesiacus*.

Itapebi.—Nine seen in three forest fragments (15°54'14.39"S 39°43'58.20"W; 15°56'34.20"S 39°54'23.40"W and 15°55'52.09"S 39°44'59.53"W, of 14, 123 and 336 ha, respectively). Just one bird was found in the smallest fragment. One fragment borders Itapebi Dam, indicating that some habitat of *R. ardesiacus* has been recently flooded.

Geographic range

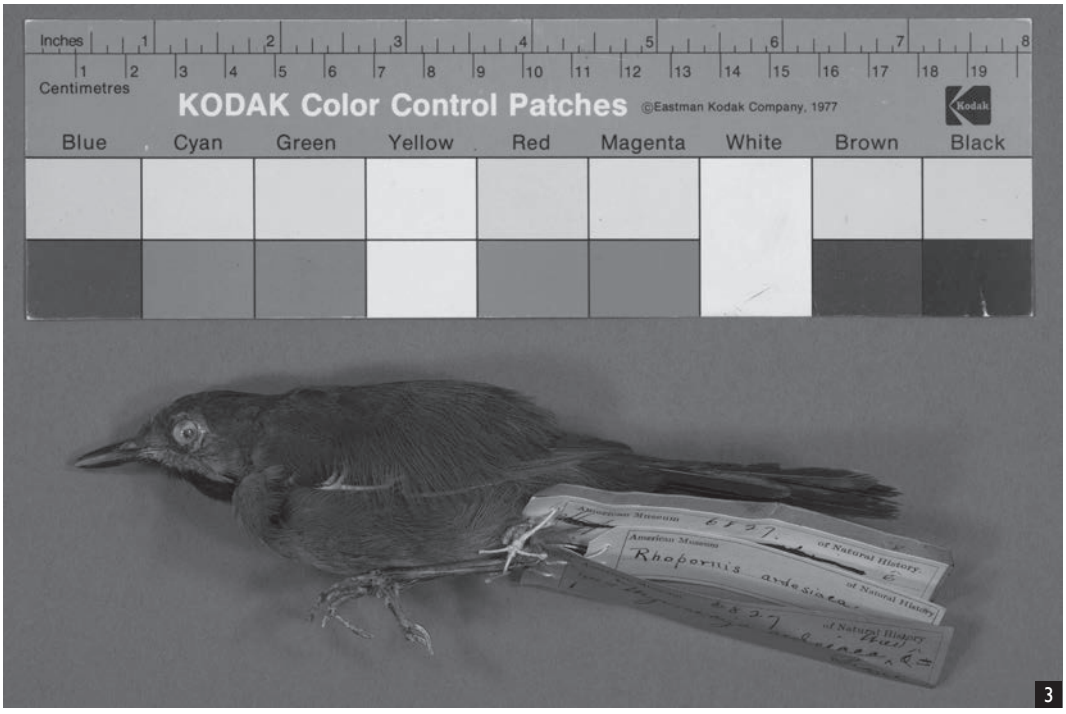
As a result of our findings, the number of municipalities where *R. ardesiacus* is known to occur has increased from six to 17. Its range now encompasses the rios Paraguaçu (right bank), Contas, Pardo and the left bank of the Jequitinhonha (Fig. 1).

Of these localities, 15 are within the Atlantic Forest domain and two (Manoel Vitorino and Milagres) in the Caatinga domain[6]. Until recently only *mata-de-cipó* and Lowland Seasonal Forest had been considered habitats for *R. ardesiacus*[10]. Our findings add three vegetation types in which the species is known to occur: Montane Deciduous Forest, Sub-Montane Deciduous Forest and Wooded Steppe Savanna. The known altitudinal range of *R. ardesiacus* now extends from the lowlands (100–300 m), e.g. at Fazenda Santana and Salto da Divisa in Minas Gerais, across a region of small hills at 400–700 m in the centre of its range (Boa Nova and Jequié, Bahia), to the highest point (Maracás Plateau) at up to 900 m, in the north (Fig. 2).

Type locality and the correct locality of Emil Kaempfer's specimens

Based on a review of the early 19th-century expedition of Maximilian, Prince of Wied[3] throughout Bahia, we now know that he visited many of the known localities for *R. ardesiacus*: September 1816—Quartel do Salto (currently Salto da Divisa); January 1817—Rio Cachoeira (Itororó) and Boqueirão Valley (Itapetinga); March 1817—Possões (Poções), Fazenda Ladeira (Boa Nova), Fazenda Cachoeira (Manoel Vitorino) and Fazenda Coronel de Sá (Jequié). In April 1817, Wied traversed the northern part of the species' range en route to Salvador, where he arrived in early May. Within his accounts of these sites, Wied often describes the main characteristic of these dry forests, namely the many ground bromeliads. For 'Quartel do Salto' he mentioned '... at the top, one enters a tall forest, where bromeliads on the floor form an impenetrable mass ...' and at the rio Pardo '...the soil is covered by clumps of bromeliads, whose leaves, equipped with spines, are very bothersome for Brazilian hunters…'. Wied made it clear that he was in a transition between the humid forests of the coast and the dry Caatinga, and noted in addition to the abundant bromeliads, floss-silk trees (Bombacaceae), zabelê grass and much *Tillandsia* (Spanish moss). These are characteristics of some of the forests inhabited by *R. ardesiacus* (pers. obs.). In his *Beiträge*, published in 1830, Wied described a pair of *R. ardesiacus*, although only the male is at the American Museum of Natural History, New York (AMNH 6827)[8]. Wied stated that they were collected 'close to Conquista' (now the city of Vitória da Conquista). As Poções and Boa Nova are the closest localities to Vitória da Conquista from where *R. ardesiacus* is known, we suggest that Wied probably found the species at one of these two localities.

Specimens of *R. ardesiacus* collected in the late 1920s by Emil Kaempfer were apparently taken at 'Ituaçu'[9]. This locality has been controversial[4] due both to Ituaçu being some distance from current sites for *R. ardesiacus*, and to the existence of a locality called Itiruçu, a district of Jequié, where the species was discovered in the late 1970s[11]. On 8 and 10 September 2008, we surveyed Ituaçu and found that the area is within the floristic domain of the Chapada Diamantina. The vegetation comprises mostly low *cerrado* and shrubland, without the abundant large terrestrial bromeliads that characterise the drier habitats favoured by *R.*



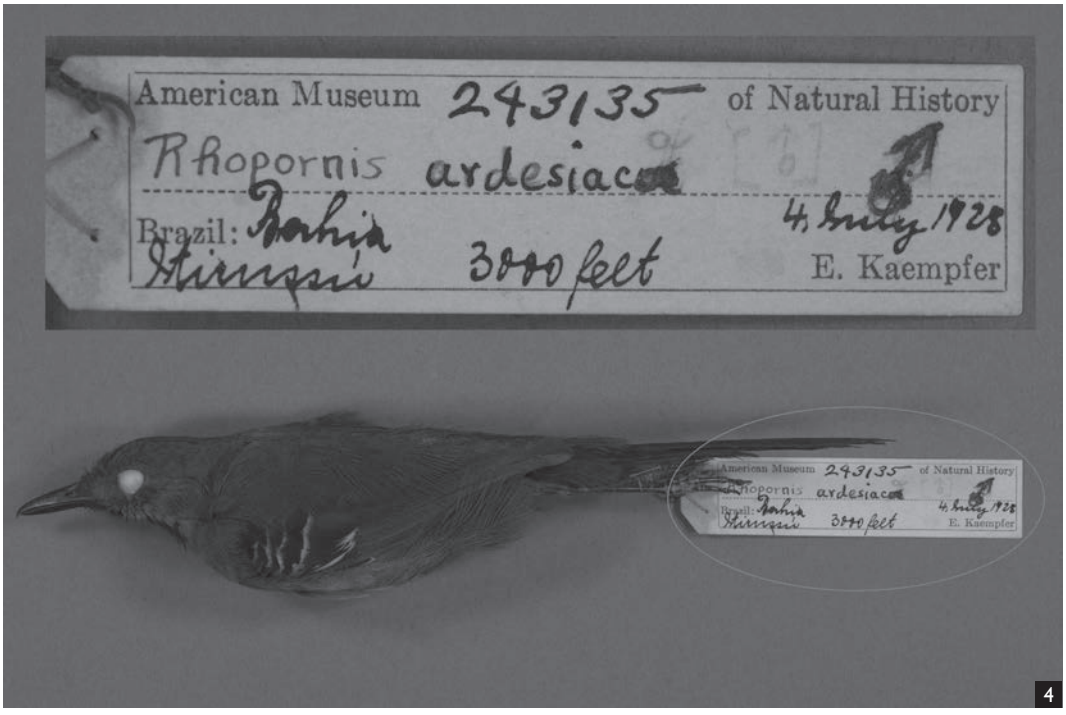


Figure 3. Wied's male Slender Antbird *Rhopornis ardesiacus* specimen (AMNH 6827), collected in 1817, held at the American Museum of Natural History, New York (Matt Shanley)

Figure 4. Male Slender Antbird *Rhopornis ardesiacus* (AMNH 243135) collected by E. Kaempfer in 1928; the label clearly indicates Itirussú (now Itiruçu) as the collecting locality (Matt Shanley)

ardesiacus. In 2011 we requested photographs of the specimens and labels of the birds collected by Kaempfer, which enabled us to confirm that they were taken at Itiruçu, not Ituaçu, as demonstrated by the label 'Itirussú' (an old spelling of the first-named; Fig. 4). Our information reinforces the correction suggested in 1992[4].

Range, population size, area of occupancy and conservation status

The minimum convex polygon obtained from the presence of *R. ardesiacus* at 17 locations (11 new localities and six from the literature) covers c.19,750 km^2, with a maximum distance of 355 km between the southernmost locality (Salto da Divisa) and the northernmost (Milagres). Point counts conducted in forest fragments at Boa Nova by ERL (unpubl.) in 2008–09 indicated that, at this locality alone, the total population exceeds 1,000 individuals. Based on this, if we consider the other 16 localities where the species occurs, even taking into account that they differ in both appropriate vegetation cover and species abundance, we infer that the total population of *R. ardesiacus* must be slightly higher than 2,500 adults, the population size under which the species has been classed as Endangered[2]. However, if we apply the criterion 'Area of Occupancy' (AOO), *R. ardesiacus* would meet the threshold for Endangered. The species' AOO at Boa Nova is 35 km^2, if we consider all existing forest remnants, which are very fragmented, and at Salto da Divisa the AOO is a more continuous 15 km^2. Based on our field observations, the other 15 municipalities where the species occurs do not possess >200 km^2 of forest fragments potentially suitable for the species. Thus, *R. ardesiacus* currently has a total AOO <500 km^2, qualifying as Endangered under criteria B2ab(ii, iii).

Major threats and conservation priorities

Since 2005 several initiatives to protect *R. ardesiacus* have occurred in the Boa Nova region, culminating in 2010 in the creation of Boa Nova National Park, encompassing 12,065 ha. Approximately 20% of the area is covered by *mata-de-cipó*, especially at Gorutuba (Mata da Torre), Serra do Anicete (Goiabeira) and Fazenda Alvorada. There has also been a considerable reduction in the exploitation of firewood at Boa Nova during recent years[5], thereby reducing the primary threat to *R. ardesiacus*. Nevertheless, the protected area is still virtually a 'paper park' and immediate measures are required to permit the recovery of degraded vegetation. It must be emphasised that protected *mata-de-cipó* at Boa Nova represents only 0.61% of the species' known range. Thus, we strongly recommend the creation of additional protected areas, especially in Minas Gerais, as Fazendas Santana, Ondina and Jaboti, in Salto da Divisa, have some of the largest remaining continuous forest where *R. ardesiacus* occurs. In Maracás the last remnants of *mata-de-cipó* will soon disappear due to clear-cutting and the expansion of eucalyptus plantations. In 2008–09, we found fires being set illegally to clear pastures in forested areas around Itororó and Potiraguá, which are traditional livestock regions (ERL pers. obs.). In Jequié, significant areas of *mata-de-cipó* are threatened by clearance for the construction of the east–west railway (EF344) planned by the federal government to link the agribusiness centres of central Brazil to the Bahian coast. Compensatory measures such as the creation of conservation areas and corridors to the Boa Nova National Park could mitigate the impacts of habitat loss on *R. ardesiacus*. It must also be stressed that habitat of *R. ardesiacus* also supports other species of global conservation concern such as Scalloped Antbird *Myrmeciza ruficauda*, Narrow-billed Antwren *Formicivora iheringi* and Red-browed Amazon *Amazona rhodocorytha*.

Acknowledgements

Disney Wildlife Conservation Fund, Cleveland Metroparks Zoo, Ricoh and Nature Canada, via SAVE Brazil / BirdLife International, provided financial and logistical support for our field work. Matt Shanley, at the American Museum of Natural History (New York) kindly photographed *R. ardesiacus* specimens. Dr Leonardo Lopes helped with information concerning the Wied expedition. The Bird Division of the Zoology Museum of Feira de Santana State University, Bahia, and the Ministry of Environment (PPBIO Semiarid Project) provided logistical support to our visits to Milagres. Jack Paul Lettieri corrected our translation into English. We also appreciate the important reviews of Mort Isler, Kevin Zimmer and Guy Kirwan of this manuscript.

References

1. Bencke, G. A., Mauricio, G. N., Develey, P. F. & Goerck, J. M. (orgs.) (2006) *Áreas Importantes para a Conservação das Aves no Brasil*, 1. São Paulo: SAVE Brasil.
2. BirdLife International (2014) Species factsheets. www.birdlife.org/datazone/home (accessed 9 September 2014).
3. Bokermann, W. C. A. (1957) Atualização do itinerário da viagem do príncipe de Wied ao Brasil (1815–1817). *Arq. Zool., São Paulo* 10: 209–251.
4. Collar, N. J., Gonzaga, L. P., Krabbe, N., Madroño Nieto, A., Naranjo, L. G., Parker, T. A. & Wege, D. C. (1992) *Threatened birds of the Americas: the ICBP / IUCN Red Data book*. Cambridge, UK: International Council for Bird Preservation.
5. Fabiano, R. B. (2011) *Relatório técnico*: *estudo do potencial de desenvolvimento econômico baseado no ecoturismo em Boa Nova, Bahia*. Florianopólis: Cooperativa para Conservação da Natureza.

6. IBGE (2004) *Mapa de vegetação do Brasil*, 1ª ampliação. Brasília: Instituto Brasileiro de Geografia e Estatística & Ministério do Meio Ambiente.
7. IUCN (2008) Guidelines for using the IUCN Red List categories and criteria. www.iucn.org/webfiles/doc/SSC/RedList/RedListGuidelines.pdf (accessed 7 September 2011).
8. Lecroy, M. & Sloss, R. (2000) Type specimens of birds in the American Museum of Natural History. Part 3. Passeriformes: Eurylaimidae, Dendrocolaptidae, Furnariidae, Formicariidae, Conopophagidae and Rhinocryptidae. *Bull. Amer. Mus. Nat. Hist*. 257: 1–88.
9. Naumburg, E. M. (1934) Rediscovery of *Rhopornis ardesiaca* (Wied). *Auk* 51: 493–496.
10. Ribon, R. & Maldonado-Coelho, M. (2001) Range extension for Slender Antbird *Rhopornis ardesiaca* with comments on external morphology of adults. *Cotinga* 16: 52–56.
11. Sick, H. (1997) *Ornitologia brasileira*. Rio de Janeiro: Ed. Nova Fronteira.

Edson Ribeiro Luiz
Sociedade para Conservação das Aves do Brasil (SAVE Brasil), Rua Fernão Dias 219-2, Pinheiros, São Paulo*, Brazil; and Programa de Mestrado em Ecologia de Biomas Tropicais, Dpto. Ciências Biológicas e Exatas, Universidade Federal de Ouro Preto, Campus Morro do Cruzeiro, Ouro Preto, Minas Gerais, Brazil. E-mail: gravatazeiro@gmail.com.*

Sidnei Sampaio dos Santos
Associação Baiana para Conservação dos Recursos Naturais, Salvador, Bahia, Brazil.

Fernando Moreira Flores
Coleção da Divisão de Aves do Museu de Zoologia da Universidade Estadual de Feira de Santana, Bahia, Brazil.

Giancarlo Zorzim
Programa de Pós-Graduação em Biologia Animal, Museu de Zoologia João Moojen de Oliveira, Dpto. Biologia Animal, Universidade Federal de Viçosa, Vila Gianetti, casa 32, 36570-000 Viçosa, Minas Gerais, Brazil.

Harildon Machado Ferreira
Programa de Pós Graduação em Zoologia da Universidade Estadual de Santa Cruz, Rodovia Ilhéus-Itabuna, km 16, Bahia, Brazil.

Emilia Camurugi and Hermilino Danilo Santana de Carvalho
Coleção da Divisão de Aves do Museu de Zoologia da Universidade Estadual de Feira de Santana, Bahia, Brazil.

Rômulo Ribon
Programa de Pós-Graduação em Ecologia de Biomas Tropicais, Universidade Federal de Ouro Preto; and Programa de Pós-Graduação em Biologia Animal, Museu de Zoologia João Moojen de Oliveira, Dpto. Biologia Animal, Universidade Federal de Viçosa, Vila Gianetti, casa 32, 36570-000 Viçosa, Minas Gerais, Brazil.