Altitudinal and geographical range extension for Bicoloured Antvireo *Dysithamnus occidentalis punctitectus* in south-east Ecuador, with notes on its nesting ecology

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Presentamos una extensión del rango altitudinal y geográfico para el Batarito Bicolor *Dysithamnus occidentalis punctitectus* en la Cordillera de Sabanilla, parroquia Valladolid, provincia de Zamora-Chinchipe, Ecuador. En abril y mayo de 2007 en la Reserva Biológica Tapichalaca en un rango de 2.300–2.460 msnm, se observó en tres ocasiones y capturó en redes de neblina el 11 de junio a *D. occidentalis*. Estos registros extienden el rango altitudinal de la especie en Ecuador 260 m y el rango geográfico 160 km al sur-oeste en Ecuador. Adicionalmente, presentamos nueva información sobre la ecología de anidación y comportamiento reproductivo de la especie del oriente al Ecuador (provincia de Napo).

Bicoloured Antvireo *Dysithamnus occidentalis* is an inconspicuous, low-density bird that occurs locally on the west slope of the Andes in western Colombia[2–6,15] and northern Ecuador[9], and disjunctly along the east slope of the Ecuadorian Andes and in northern Peru[1,2,9,11–15]. It was essentially unknown in life until 1991[14] and is considered Vulnerable due to habitat loss[2,4,11,15]. Two subspecies are recognised. *D. o. occidentalis* occurs in Colombia at 900–2,800 m[4–6] and in north-west Ecuador at 2,200 m[9] (subspecies inferred by range). *D. o. punctitectus* is known from Ecuador's east slope at 1,500–2,050 m[11], including specimens taken in the 1920s 'below Oyacachi', 'reportedly near Baeza', and 'Sumaco abajo'[11], and two recent specimens, from 1,500 m, at Río Abanico near Volcán Sangay[9]. Even more recently, the species was recorded further south, on the west slope of the Cordillera del Cóndor near San Pedro de Apondios, prov. Morona-Santiago, at 1,600–1,900 m[1]. It is also now known at 2,000–2,500 m in Peru, on the south slope of the Cordillera del Cóndor, dpto. Cajamarca, and near Abra Patricia, south of the río Marañón, dpto. San Martín[13].

The species' reproductive biology is still poorly known. Only two nests have been described[7,8] and data on eggs and incubation behaviour are available from just one nest[8].

Here we report *D. o. punctitectus* (inferred by range) from the Cordillera de Sabanilla, prov. Zamora-Chinchipe, Ecuador, thereby extending the species' known altitudinal range in Ecuador by 260 m (and that of *punctitectus* by 410 m) and the geographical range by 160 km south-west from the Cordillera del Cóndor[1]. We also present further observations on nesting ecology and behaviour from prov. Napo, north-east Ecuador (at Yanayacu Biological Station; 1,950–2,100 m; 00°36'S 77°53'W).

Range extension

We observed Bicoloured Antvireos in mature forest at 2,300–2,460 m (04°29'S 79°07'W), in Tapichalaca Biological Reserve, a 2,870-ha protected area administered by Fundación Jocotoco, above the town of Valladolid. Forest in this area, described as upper subtropical forest[10], has a mean canopy height of c.10 m, with 20-m emergent crowns, and receives c.4 m of rainfall p.a. The canopy is characterised by Moraceae (*Ficus* sp.), Euphorbiaceae (*Croton* sp.), Lauraceae and Rubiaceae, and the understorey is largely comprised of *Chusquea* sp. bamboo (Poaceae), Piperaceae and Melastomataceae. Steep slopes and heavy epiphyte loads make the forest prone to landslides and treefalls. As reported earlier[1,5,14], we encountered antvireos in areas of localised early-successsional habitat such as bamboo thickets and vine tangles, in otherwise undisturbed forest.

Whilst mist-netting between 25 April and 14 June 2007 we observed Bicoloured Antvireos four times and captured two individuals. On 25 April, RLCA observed a closely associated group of one male and two females, for ten minutes. On 1 May RLCA and JBCH observed and made sound-recordings (to be archived at the Macaulay Library, Cornell University) of two males and two females, for 15 minutes. On 7 May RLCA observed two males for five minutes and on 8 May RLCA observed a pair for two minutes. On 11 June we mist-netted a presumed pair in nets 25 m apart. We caught the female 30 minutes after capturing the male. We estimated skull ossification to be 100% for both individuals and the female had a receding brood patch.

All individual antvireos remained within 2 m of each other during the observations and we never observed an agonistic interaction. They made frequent but quiet vocalisations of both the smooth *peeu* and fast scold *jeer-deer-dur* types[11], corroborat-

ing Greeney's[7] observation that the species is very vocal yet inconspicuous because the calls are so muted. We never observed antvireos forage within a mixed-species flock at Tapichalaca. They never foraged more than 2 m above ground and usually at less than 1 m, or on the ground, as described by Whitney[14], contrary to the brief observations of Ágreda *et al*.[1]. All of our observations involved at least two individuals and twice we observed 3+ individuals. Our record of a male and two females might have represented a family group, although all appeared to be adults[1,3]. It is unclear, however, why the two apparent pairs we observed remained within 2 m of each other for 15 minutes without exhibiting agonistic behaviour.

D. occidentalis is an apparently rare resident at Tapichalaca Biological Reserve. Despite that Tapichalaca has been frequented by experienced observers since 1998, *D. occidentalis* was not definitely recorded until 2007. That we always observed at least two individuals, and the presence of a brood patch on the captured female, suggest that the species is resident in the region. The species' apparent scarcity is partially explained by its inconspicuous behaviour and quiet vocalisations, but even when these factors are considered, we suggest a total population size of <30 individuals in the reserve. Recent range extensions in Ecuador[1,9,13] suggest that *D. occidentalis* may yet be discovered in mature forest at 1,500–2,500 m in Podocarpus National Park, to the north of Tapichalaca, or in the Cordillera de las Lagunillas to the south.

Nesting ecology and behaviour

At Yanayacu *D. occidentalis*, whilst frequently found as solitary pairs, often joins small understorey flocks comprised of Spotted Barbtails *Premnoplex brunnescens*, Grey-breasted Wood Wrens *Henicorhina leucophrys* and Chestnut-capped Brush Finches *Buarremon brunneinucha*. Nesting has previously been documented in November and December from the area[7,8]. Here we present data from four other active and three unoccupied nests. We found nests under construction in early March 2003 and late October 2006. We also found a nest with incubation underway in mid-November 2002 and one with two older nestlings in early December 2004. In the same area, R. A. Gelis observed a juvenile with two adults in mid-August 2003. Clutch size at all nests was two eggs. Eggs at one nest measured 21.5 × 16.3 and 21.5 × 16.4 mm, and those at a second 22.1 × 16.2 and 22.2 × 16.4 mm. Using previous egg measurements from this area[8] we calculate mean (± SD) dimensions as 21.9 ± 0.3 × 16.4 ± 0.1 mm. Nests in the area, including previously published data[7,8], were found in small (mean dbh 14 ± 5 mm) saplings of the following families (numbers of nests in parentheses): Solanaceae (4), Piperaceae (1), Melastomataceae (1), Myristicaceae (1), and unknown (2). Mean substrate height was 2.3 ± 0.3 m and mean nest height 1.5 ± 0.4 m. Nests were 0–25 m from small streams (mean 6.4 ± 10.1), always in mature forest, but usually in areas of natural disturbance such as treefalls. All nests were situated next to the trunk of the supporting tree and suspended between two thin (mean 4.6 ± 1.6 mm diameter) horizontal branches, on average separated vertically by 3.9 ± 1.3 cm. Mean nest dimensions (cm) were: outer diameter 9.6 ± 1.0; outer height 7.2 ± 0.8; inner diameter 6.6 ± 0.7; and inner depth 5.2 ± 0.9. All nests were dense pendant cups woven entirely of dark rootlets.

In sum, records from Yanayacu suggest breeding occurs year-round in this area, with a fairly defined peak towards the late drier season, in November–December.

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Reproductive notes on the Slender Antbird *Rhopornis ardesiacus*

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Esse trabalho apresenta dados inéditos relacionados a aspectos reprodutivos do gravatazeiro *Rhopornis ardesiacus*, incluindo a descrição do ninho e a documentação fotográfica de ovos e filhotes encontrados em novembro de 2005 na Fazenda Alvorada, município de Boa Nova, Bahia. Apesar do ninho da espécie ter sido descrito pela primeira vez em 1987, as informações aqui apresentadas não corroboram a descrição existente na literatura que foi baseada apenas em evidências indiretas e interpretadas erroneamente. As informações apresentadas são de grande importância no delineamento das ações de conservação propostas para a conservação da espécie na região.

The Brazilian endemic Slender Antbird *Rhopornis ardesiacus* is considered Endangered at global and national levels[1,6]. Despite being well known amongst birdwatchers, there are few published data concerning its basic biology. Described in 1817, by Wied, from the state of Bahia[5], it was only rediscovered in 1928, by Emil Kaemper around Boa Nova and Ituaçu[7]. In the 1970s and 1980s other records were made in the same region of south-east Bahia[11,13,14]. For many years the species was considered to be restricted to *mata de cipó* (at 700–1,000 m)[10] and it was not until until 1999 that *R. ardesiacus* was found in a forest remnant at Fazenda Santana, near Salto da Divisa, Minas Gerais, where the vegetation is classified as lowland semi-deciduous forest, at c.100 m[9]. However, in both areas the presence of *R. ardesiacus* is closely associated with large terrestrial bromeliads known to be used by the species[5,7,9–11,13,14].

The few data concerning the Slender Antbird's natural history concern its foraging behaviour, home range and vocalisations (at Boa Nova), and morphology and habitat use (Fazenda Santana)[9,14]. Until now, the only information concerning breeding biology involves a nest supposedly of this species found at Boa Nova[13], which was described as having recently been built and contained feathers of a female *R. ardesiacus*. It was mainly constructed of dry leaves and had an elliptical shape, with a tunnel and side entrance. The nest was positioned 25 cm above ground, supported by two terrestrial bromeliads known as *gravatás*. However, Teixeira never saw a Slender Antbird attend the nest, but concluded that it belonged to *R. ardesiacus* based on indirect evidence, pointing out that the structure was similar to nests of *Pyriglena* species[13].

Here I describe for the first time a *R. ardesiacus* nest based on direct observations. In addition to the nest description, details of the eggs and nestlings are also presented.