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

J. Berton C. Harris, Rolando L. Carpio A., Mary K. Chambers and Harold F. Greeney

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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 a 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 Colombia2–6,15 and northern Ecuador7, and disjunctly along the east slope of the Ecuadorian Andes and in northern Peru1,2,9,11–15. It was essentially unknown in life until 199114 and is considered Vulnerable due to habitat loss2,4,11,15. Two subspecies are recognised. *D. o. occidentalis* occurs in Colombia at 900–2,800 m4–6 and in north-west Ecuador at 2,200 m4 (subspecies inferred by range). *D. o. punctitectus* is known from Ecuador’s east slope at 1,500–2,050 m11, including specimens taken in the 1920s ‘below Oyacachi’, ‘reportedly near Baeza’, and ‘Sumaco abajo’11, and two recent specimens, from 1,500 m, at Rio Abanico near Volcán Sangay2. 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 m1. 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 Martin15.

The species’ reproductive biology is still poorly known. Only two nests have been described7,8 and data on eggs and incubation behaviour are available from just one nest8.

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 Cóndor1. 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 forest10, 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 earlier1,5,14, we encountered antvireos in areas of localised early-successional 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 *deer-deer-dur* types11, corroborat-
ing Greeneys’ 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, contrary to the brief observations of Ágreda et al. 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. 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 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 understory flocks comprised of Spotted Barbtailed Premnoplex brunneiscens, 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. 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-December 2004. In the same area, R. A. Gelis observed a juvenile with two adults 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 a second 22.1 × 16.2 and 22.2 × 16.4 mm. Using previous egg measurements from this area we calculate mean (± SD) dimensions as 21.9 ± 0.3 × 16.4 ± 0.1 mm. Nests in the area, including those at a second 22.1 × 16.2 and 22.2 × 16.4 mm, one nest measured 21.5 × 16.3 and 21.5 × 16.4 mm, 8. [7]观测到的群体可能代表了一个家庭组，尽管不清楚为什么这两对显而易见的对保持在2米之内15分钟而没有表现出攻击行为。

*D. occidentalis*显然是爱足西边的珍稀居民在Tapichalaca生物保护区。尽管Tapichalaca已经被经验丰富的观察者频繁光顾自1998年起，*D. occidentalis*直到2007年才被明确记录。我们总是至少观察到两个个体，而在捕获的雌性身上发现了一个窝垫，这表明该物种是该地区的常居种。该物种的明显稀缺性在一定程度上是由其不显眼的行径和沉默的鸣叫所解释的，但即使考虑到这些因素，我们仍然建议该物种在该保留区的总种群数量为<30个个体。最近的范围扩展在厄瓜多尔表明，*D. occidentalis*可能会在海拔1,500–2,500 m的Podocarpus国家公园，北Tapichalaca，或在Cordillera de las Lagunillas以南地区。

**筑巢生态与行为**

在Yanayacu *D. occidentalis*，尽管经常以单对形式出现，但有时会加入小群的Understorey风鸟，如Spotted Barbtailed Premnoplex brunneiscens，Grey-breasted Wood Wrens Henicorhina leucophrys，和Chestnut-capped Brush Finches Buarremon brunneinucha。在该地区有该物种的巢巢被记录。在这里，我们提供了四只其他活动的和三只未占巢的巢巢数据。我们在2003年3月初和2006年10月下旬发现了筑巢活动。R. A. Gelis在同年发现了至少两个个体，以及两次观察到3+个体。在我们被捕获的雌性身上发现了一个窝垫，这表明该物种是该地区的常居种。该物种的明显稀缺性在一定程度上是由其不显眼的行径和沉默的鸣叫所解释的，但即使考虑到这些因素，我们仍然建议该物种在该保留区的总种群数量为<30个个体。最近的范围扩展在厄瓜多尔表明，*D. occidentalis*可能会在海拔1,500–2,500 m的Podocarpus国家公园，北Tapichalaca，或在Cordillera de las Lagunillas以南地区。

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J. Berton C. Harris, Rolando L. Carpio A. and Mary K. Chambers
Fundación de Conservación Jocotoco, Av. Los Shyris N37–146 y El Comercio, Quito, Ecuador. E-mail: bertdichrozona@hotmail.com.

Harold F. Greeney
Yanayacu Biological Station & Center for Creative Studies, Cosanga, Ecuador, c/o 721 Foch y Amazonas, Quito, Ecuador.