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Range extensions for White-shouldered Antshrike *Thamnophilus aethiops*, Imeri Warbling Antbird *Hypocnemis flavescens* and Black-headed Antbird *Percnostola rufifrons* along the Putumayo River in Colombia, and their biogeographical significance

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Summary.—The avifauna on the north bank of the Putumayo River in Colombia is one of the most poorly known in western Amazonia. In February 2017 we spent nine days conducting ornithological field work in and around the community of El Encanto, dpto. Amazonas. We present novel distributional information for six species, the most significant of which concern range extensions for White-shouldered Antshrike *Thamnophilus aethiops*, Imeri Warbling Antbird *Hypocnemis flavescens* and Black-headed Antbird *Percnostola rufifrons minor*. We discuss these records in the context of recent ornithological work on the south bank of the Putumayo in Peru and address their biogeographical significance, especially with regards to the definition of areas of endemism in western Amazonia and the role of the Putumayo River as a distributional barrier. Our findings underscore the need for continued ornithological field work in the Putumayo–Caquetá interfluvium and indeed the Colombian Amazon as a whole.

Of all the major rivers in western Amazonia, the Putumayo is arguably the least known ornithologically. Approximately 1,600 km in length, the Putumayo—known as the Içá in Brazil—is the tenth longest tributary of the Amazon (Goulding *et al*. 2003). Rising in the southern Colombian Andes, it marks the boundary between Colombia and Peru for much of its length; its basin is sparsely populated, and for the most part difficult to access. Several recent surveys by the Field Museum of Natural History (FMNH), Chicago, have shed light on avian distributions immediately south of the Putumayo in Peru (Pitman *et al*. 2004, Alverson *et al*. 2008, Gilmore *et al*. 2010, Pitman *et al*. 2011, 2013, 2016), but the avifauna on the Colombian side is essentially unknown. Ornithological exploration of the Putumayo–Caquetá interfluvium has commenced only very recently, with much of the field work in the vicinity of Puerto Leguizamo (Bonilla-Castillo *et al*. 2017); the Colombian side of the Putumayo downstream of Puerto Leguizamo has been almost completely neglected by ornithologists and birders. Here we report on several avian range extensions from a site on the Colombian bank of the Putumayo *c*.240 km downriver of Puerto Leguizamo, and discuss their biogeographical implications.

Study sites and Methods

On 1–9 February 2017, we undertook ornithological field work around the indigenous Muiri communities of El Encanto (01°44′40″S, 73°12′24″W), San Rafael del Caraparaná (01°41′15″S, 73°13′55″W) and Tercera India (01°42′32″S, 73°13′41″W) in dpto. Amazonas, Colombia. El Encanto is located at the confluence of the Putumayo and Caraparaná Rivers, while San Rafael and Tercera India are both a few kilometres upstream along

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the Caraparaná. Elevation at all three sites is *c*.140 m. Rainfall data from Puerto Alegría, *c*.120 km to the north-west along the Putumayo River, indicates that February is the second wettest month after March, with the driest period in June–August (OEA 1993); we experienced some rain on most days, with several very heavy afternoon downpours. To our knowledge, the only previous bird survey of this area was by J. Beckers in March 2015. We concentrated our efforts on several trails through *terra firme* forest on clay soils in the vicinity of the three villages; less time was spent in pasture and second growth in the immediate environs of settlements. We walked trails from dawn to early afternoon conducting qualitative observations and attempting to document interesting sightings using digital photography and sound-recordings using an Olympus LS-11 recorder with Sennheiser ME66 microphone.

Results

We recorded a total of 197 species during our field work (Appendix 1). All of our records, including 116 photos of 45 species, are archived in eBird (www.ebird.org); we documented 40 species with sound-recordings, the more significant of which—nine recordings of seven species—are deposited at www.xeno-canto.org. Major range extensions and other noteworthy records are detailed below, with supporting documentation indicated by its archive number in xeno-canto (XC) or the Macaulay Library (ML). Taxonomy and nomenclature follow Remsen *et al*. (2018).

PEARL KITE *Gampsonyx swainsonii*

One photographed on the outskirts of El Encanto on 4 February (ML 59417331). Until very recently, this open-country species was not mapped for the middle Putumayo by major references (Schulenberg *et al*. 2007, McMullan & Donegan 2014), although more recent works do so (Ayerbe-Quiñones 2018, McMullan 2018). Generally, it is patchily distributed in western Amazonia. The only record from the several expeditions conducted by FMNH to the Peruvian bank of the middle Putumayo is at San Antonio del Estrecho, downstream of El Encanto, on 23 February 2016 (Pitman *et al*. 2016). Additionally, we observed two north of Puerto Leguizamo on 30 January 2017 (ML 58128771), suggesting this species is regular at low densities in cleared areas near settlements along the middle Putumayo.

COMMON NIGHTHAWK *Chordeiles minor*

A massive dusk flight over the Caraparaná River at San Rafael on 5 February was conservatively estimated to number 250 individuals (ML 59418331, 59418331, 59418481). Data on the species' winter range are limited (Brigham *et al.* 2011) and, while it occurs regularly in western Amazonia, this appears to be an exceptionally high count. There are no published counts of more than ten in Ecuador (Freile *et al*. 2017) and in Loreto, Peru, where the species is known to winter, the only eBird counts in double digits are from October, and presumably refer to migrants. Further north in the Colombian Amazon—where the species was recorded for the first time by Stiles (2010)—counts from the vicinity of Mitú, Vaupés, have reached 50 in January and up to 150 in late February (eBird data), the latter possibly involving early spring migrants. Our count from early February should represent wintering birds and suggests that Common Nighthawks may be more numerous in winter than previously thought in this part of Amazonia. Interestingly, for a species generally associated with open habitats, our record is from a heavily forested area.

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Figure 1. Green-tailed Goldenthroat *Polytmus theresiae*, San Rafael del Caraparaná, Amazonas, Colombia, 8 February 2017 (Ottavio Janni)

GREEN-TAILED GOLDENTHROAT *Polytmus theresiae*

One photographed (ML 59429851, 59429911, 59429981, 59430021; Fig. 1) on 8 February in open pasture with scattered low shrubs on the outskirts of San Rafael. In Colombia, this species occurs in 'sandy-belt' forest edge and savanna in dptos. Vichada, Guainía, Vaupés and Guaviare (McMullan & Donegan 2014); the closest records are from the Serranía de Chiribiquete, dpto. Caquetá, *c*.215 km to the north (Álvarez *et al*. 2003) and from Mitú, *c*.470 km to the north-west. The species is very patchily distributed in northern Amazonian Peru, where it occurs in sand-forest enclaves, with the nearest records from the río Pastaza *c*.400 km to the south-east (Schulenberg *et al*. 2007); more recently, a small population was also discovered near San Lorenzo, dpto. Loreto (Schmitt *et al*. 2017), and along the río Blanco, also in dpto. Loreto (Socolar *et al.* 2018). The only Ecuadorian record concerns a male and a female collected in 1936 at 'Laguna de Siguin', an untraced locality presumed to be on the north bank of the río Pastaza (Ridgely & Greenfield 2001). Its presence in our study area was surprising, as there is no natural savanna anywhere in the vicinity and the only open areas are small man-made pastures in the immediate environs of settlements. We can only speculate as to whether this was a vagrant from elsewhere in Colombia or Peru, or if there is small resident population along the Putumayo. It has recently been suggested that the species' patchy distribution in western Amazonia is a result of contemporary connectivity between populations, rather than relictual distribution (Socolar *et al*. 2018) and our record from a tiny patch of suitable habitat appears to support this argument.

WHITE-SHOULDERED ANTSHRIKE *Thamnophilus aethiops*

One heard singing in *terra firme* forest near El Encanto on 3 February, and at least three were seen, photographed (male ML 49753351; female ML 49753331, 49753341; Fig. 2) and sound-recorded (XC 357343) in a treefall gap in *terra firme* forest near Tercera India on 7 February.

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Figure 2. Female White-shouldered Antshrike *Thamnophilus aethiops*, Tercera India, Amazonas, Colombia, 7 February 2017 (Ottavio Janni)

T. aethiops is polytypic and a recent genetic study recovered nine reciprocally monophyletic lineages equating to evolutionary species, but not fully matching current subspecies limits (Thom & Aleixo 2015). Our records are from an area where *T. aethiops* was not previously known, and as such their taxonomic affiliation is of special interest. Four different subspecies occur within 500 km of El Encanto. Race *kapouni*, which is unknown north of the Amazon, occurs as close as *c*.210 km south of El Encanto on the south bank of the Amazon opposite the mouth of the Napo River (Robbins *et al*. 1991). North of the Amazon, the closest records of *T. aethiops* to our study site are from the Serranía de Chiribiquete *c*.215 km to the north (Álvarez *et al*. 2003). Examination of these specimens by J. E. Avendaño (*in litt*. 2018) suggests they best match the poorly known race *wetmorei*, for which the nearest otherwise confirmed records to our study site are from the foothills of the Serranía de los Churumbelos, dpto. Cauca, *c*.450 km to the north-west (Salaman *et al*. 1999). Records from the Zona Reservada Pucaruro, dpto. Loreto, Peru (Diaz-Alván *et al*. 2017) approximately 265 km to the west-southwest, and Yasuní National Park, Orellana province, Ecuador (XC86523) *c*.375 km west-southwest, have been assigned to the nominate race, of which the closest specimen records are from Santa Cecilia, Sucumbíos province, Ecuador, *c*.460 km west-northwest of our study site (Ridgely & Greenfield 2001). The status of the nominate race in Colombia is somewhat confused, as Hilty & Brown (1986) reported it to occur in south-eastern dpto. Nariño, and it was included in a recent effort to list all bird taxa known from Colombia (Verhelst-Montenegro & Salaman 2015)—presumably based on Meyer de Schauensee (1952), who reported two males and a female collected along the San Miguel and Churuyacu Rivers in extreme south-east Nariño, *c*.510 km west-northwest of our study site—yet it is not listed by recent field guides (McMullan & Donegan 2014, Ayerbe-Quiñones 2018, McMullan 2018) and taxonomic references (del Hoyo & Collar 2016), perhaps due to the earlier reference being overlooked. There are also records of *T. aethiops* from Estación

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Biológica Caparú, dpto. Vaupés, approximately 415 km to the east-northeast (Bennet-Defler 1994); the race concerned is unknown but is presumed—on range—to be *polionotus*, the closest confirmed records of which come from the lowermost Caquetá / Japurá River in Brazil, *c*.800 km east of our study site (Thom & Aleixo 2015). Assigning our records to race is problematic without specimens. Plumage perhaps best matches *polionotus:* the female was essentially uniformly rufous, whereas in female *wetmorei* the mantle should be 'much paler, which makes the rufous cap stand out more clearly from the rest of the upper parts' (Meyer de Schauensee 1945); the male was rather uniformly blackish grey, with a darker crown and white spots on the wing-coverts, coincident with *polionotus* / *wetmorei*, and should rule out the nominate race, which is mostly black. However, we cannot eliminate *wetmorei* and, given how distant our records are from other known localities, the possibility of an undescribed subspecies also cannot be discarded (A. Aleixo *in litt*. 2018). In Peru, *T. aethiops* is unknown north of the Amazon and it has not been recorded on any of the rapid biological inventories conducted between the Napo and Putumayo Rivers. Given that 'in the *T. aethiops* complex, all splits involving the recognized lineages coincide with at least part of the course of a major Amazonian river' (Thom & Aleixo 2015), it might be speculated that the Putumayo River is also one such barrier.

IMERI WARBLING ANTBIRD *Hypocnemis flavescens*

Common at San Rafael, with 1–6 recorded daily, but rarer at El Encanto, where just one was recorded, on 9 February. Found near large treefall gaps and at forest edge. Identification was based on sound-recordings of the loudsong (XC 357330; Fig. 5, note how the initial notes lack 'tails' and the terminal notes become sharply downslurred; compare with XC 72568 in Fig. 7; see Isler *et al.* 2007) and plumage (ML 49756121, 49756131; whitish breast with sparse and ill-defined black streaks vs. coarser markings on Peruvian Warbling Antbird *H. peruviana*, and black lateral crown-stripe heavily flecked white vs. more solid black in *H. peruviana*). The distributional limits of *H. flavescens* and *H. peruviana* are poorly known: the nearest published records of *H. flavescens* are from Chiribiquete National Park, dpto. Caquetá, *c*.150 km to the north-northwest (Stiles *et al*. 1995, Isler *et al*. 2007); closer to our study site, there is an unpublished specimen record from north of La Chorrera, dpto. Amazonas, *c*.65 km north-east of El Encanto (IavH-A 1526; J. E. Avendaño *in litt*. 2018). On the other hand, *H. peruviana* is mapped as occurring throughout the Putumayo–Caquetá interfluvium in McMullan & Donegan (2014), but our records suggest this is erroneous. Directly across the Putumayo from our study area, the FMNH surveys found *H. peruviana* at most sites sampled, with the closest records just 30 km from ours along the lower Ere River, but failed to record *H. flavescens* (Pitman *et al*. 2013). Our discovery of *H. flavescens* at El Encanto prompted us to review our previous records of the *H. cantator* complex from the Putumayo River. During 11 days of field work in and around Puerto Leguizamo in 2016 (29 January–5 February; OJ, J. Beckers & F. Peña) and 2017 (29–31 January; OJ, AC, MV & F. Peña), we did not record any member of the *H. cantator* complex between the Putumayo and Caquetá Rivers. However, on the north bank of the Caquetá we recorded eight *Hypocnemis* on 31 January 2016 (*c*.00°02'N, 74°38'W). Based on sound-recordings, these were *H. flavescens*, *c*.220 km west-northwest of the nearest known records from Chiribiquete National Park, and the westernmost records to date. The closest documented records of *H. peruviana* north of the Putumayo River known to us are from La Providencia, on the Orteguaza River, in dpto. Caquetá (Lafrancesco *et al*. 1987) approximately 110 km to the north-west, and the Puerto Asís area *c*.190 km west-northwest of Puerto Leguízamo (eBird; ML 50567251, D. R. López). Further field work is required to determine if and where *H. flavescens* and *H. peruviana* are in contact; any such area would lie in the stretch

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of lowland forest that extends between the Puerto Leguízamo / La Tagua area and Puerto Asís, which remains essentially unexplored by ornithologists. Additionally, field work on the Peruvian bank of the Putumayo opposite Puerto Leguízamo should focus on clarifying which member of the *H. cantator* complex occurs there, as records by OJ, J. Beckers & F. Peña in February 2016 and by D. Calderón-Franco *et al*. in March 2017 are not supported by sound-recordings and cannot be identified to species.

BLACK-HEADED ANTBIRD *Percnostola rufifrons minor*

This species, first recorded by J. Beckers in March 2015, was fairly common in the area, with 1–5 encountered daily at all three sites. As the area between the Putumayo and Caquetá Rivers lacked any records of *P. rufifrons*, our finding raises questions as to which taxon of the species occurs there. While *P. r. jensoni* is fairly widespread on the south bank of the Putumayo in Peru, including just 30 km south of our study site along the lower Ere River (Pitman *et al*. 2013), the nearest published records of *minor* appear to be from Chiribiquete National Park, Caquetá, *c*.250 km north-east (Álvarez *et al*. 2003) and Estación Biológica Caparú, Vaupés, 415 km to the east-northeast (Isler *et al*. 2001); closer to our study site are two unpublished specimens from La Chorrera (IavH-A 1563, 5756; J. E. Avendaño *in litt*. 2018). We sound-recorded several individuals (XC 357329, 357334 and 357339; Fig. 6) and photographed a male (ML 49753111; Fig. 3) and female (ML 49752771, 49752761), which we identified as race *minor* based on plumage (dark reddish-brown crown and ferruginous head-sides in the female vs. blackish-grey crown and greyish head-sides in *jensoni*) and vocal features (song slower paced than in *jensoni*; the loudsong pace in our recordings—3.03–3.52 notes / second—matches and in one case slightly exceeds the pace of loudsong reported in Isler *et al*. 2001 for *minor*—2.67–3.31 notes / second—while they are well outside that reported for *jensoni*—4.09–4.50 notes / second; M. L. Isler *in litt*. 2018;

Figure 3. Male Black-headed Antbird *Percnostola rufifrons minor*, El Encanto, Amazonas, 4 February 2017 (Ottavio Janni)

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compare our recording in Fig. 6 to XC 56750 in Fig. 8). Our findings confirm the suggestion by Capparella *et al*. (1997) that the Putumayo / Içá River separates these two taxa. Genetic work on species limits in the *P. rufifrons* complex is ongoing (G. A. Bravo *in litt*. 2017) and our findings shed light on the geographic limits of these taxa. Interestingly, the birds responded strongly to playback of the song of *P. r. jensoni* from Loreto, Peru (XC 56750), albeit during unstructured playback experiments and with the caveat that assessing lack of response is likely to be more taxonomically significant. More formal playback trials along the lines of those conducted for other allopatric, closely related taxa in the Neotropics (Freeman & Montgomery 2017) and including calls, could provide additional data by which to assess the taxonomic rank of these two taxa.

Discussion

Although our survey was brief, our findings add to the limited but growing body of data on the birds of the Putumayo basin. Previous surveys have concentrated on the Peruvian side of the river, and our records highlight some interesting similarities and differences between the avifaunas on the north and south banks. One similarity is the presence of a suite of birds associated with poor-soil habitats: in addition to *Polytmus theresiae* and *Percnostola rufifrons*, other poor-soil specialists we found included Pearly Antshrike *Megastictus margaritatus* (ML 58147011, XC 357335), Cinnamon Manakin-Tyrant *Neopipo cinnamomea* (ML 59871381, 59871431, 59871491, 59871511; Fig. 4) and Citron-bellied Attila *Attila citriniventris*, despite the absence of white-sand formations. Several poor-soil specialists were also found at some of the FMNH study sites south of the Putumayo, suggesting that such species are widespread in the basin.

Figure 4. Cinnamon Manakin-Tyrant *Neopipo cinnamomea*, Tercera India, Amazonas, Colombia, 7 February 2017 (Ottavio Janni)

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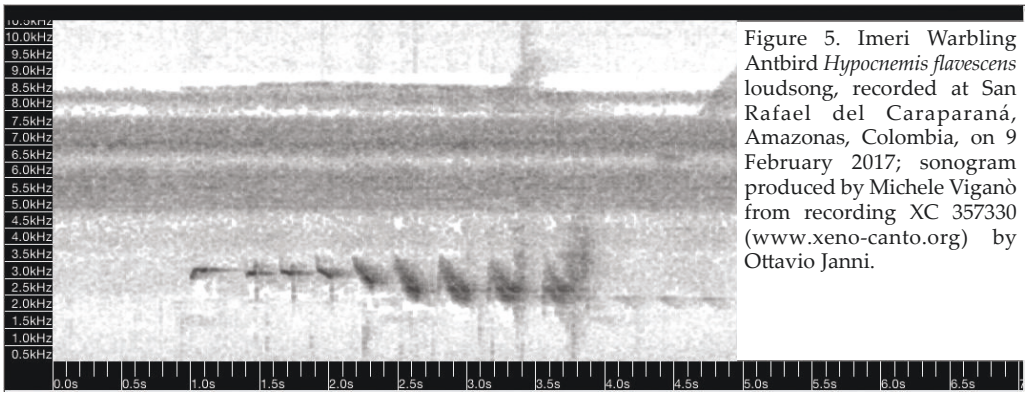

Figure 5. Imeri Warbling Antbird *Hypocnemis flavescens* loudsong, recorded at San Rafael del Caraparaná, Amazonas, Colombia, on 9 February 2017; sonogram produced by Michele Viganò from recording XC 357330 (www.xeno-canto.org) by Ottavio Janni.

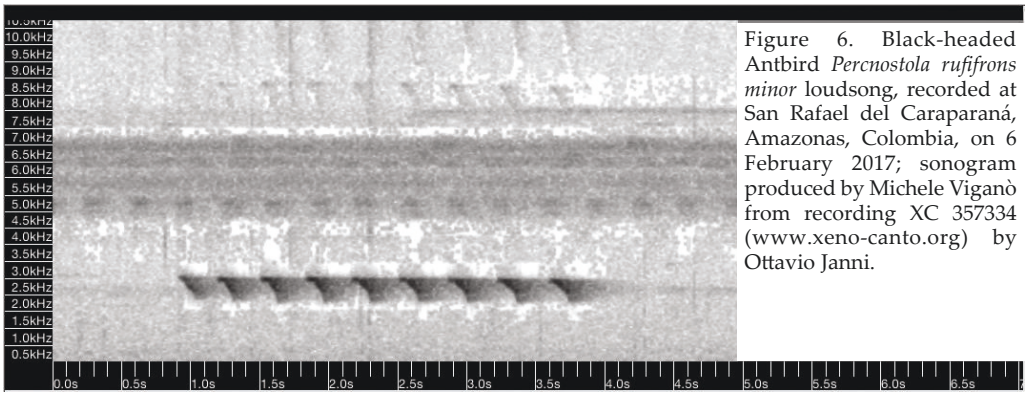

Figure 6. Black-headed Antbird *Percnostola rufifrons minor* loudsong, recorded at San Rafael del Caraparaná, Amazonas, Colombia, on 6 February 2017; sonogram produced by Michele Viganò from recording XC 357334 (www.xeno-canto.org) by Ottavio Janni.

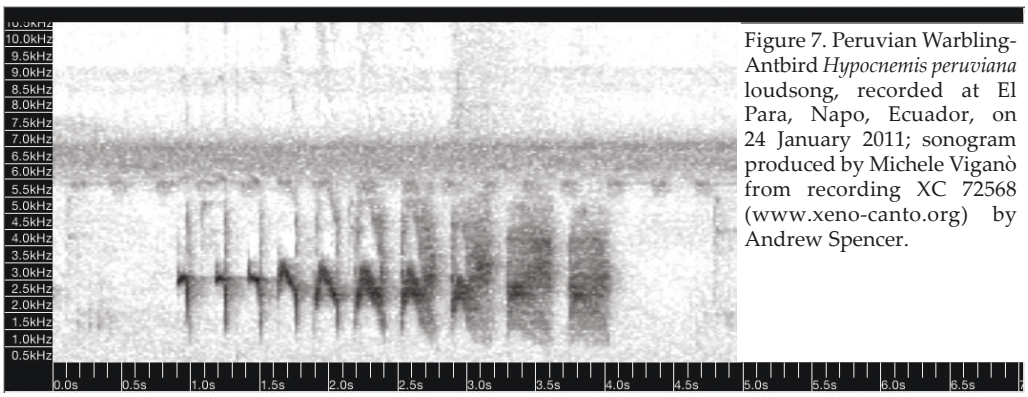

Figure 7. Peruvian Warbling-Antbird *Hypocnemis peruviana* loudsong, recorded at El Para, Napo, Ecuador, on 24 January 2011; sonogram produced by Michele Viganò from recording XC 72568 (www.xeno-canto.org) by Andrew Spencer.

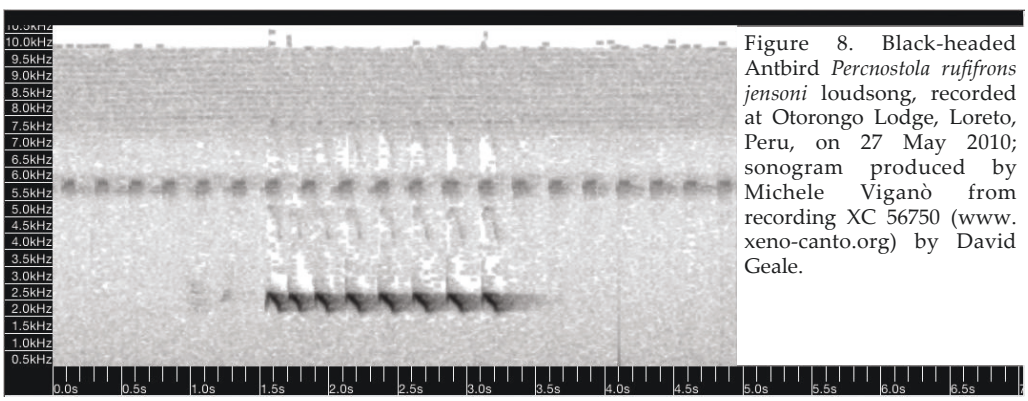

Figure 8. Black-headed Antbird *Percnostola rufifrons jensoni* loudsong, recorded at Otorongo Lodge, Loreto, Peru, on 27 May 2010; sonogram produced by Michele Viganò from recording XC 56750 (www.xeno-canto.org) by David Geale.

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Perhaps more interestingly, our findings evidence that the Putumayo River is a biogeographic barrier. Although the role of rivers in shaping the distribution and speciation of Amazonian fauna has long been known (Wallace 1852) and extensively studied (Haffer 1969, Weir *et al*. 2015), the role of the Putumayo has received virtually no attention in the ornithological literature, despite evidence that some vertebrates, such as Red Titi Monkey *Callicebus discolor*, are bound by it (van Roosmalen *et al*. 2002). Our data begin to address this gap: we found that *Hypocnemis flavescens* and *H. peruviana* replace one another across the Putumayo, contrary to published maps, and confirmed the suspicion that the Putumayo also separates *Percnostola rufifrons minor* and *P. r. jensoni*. The lack of records of *Thamnophilus aethiops* from the Peruvian side of the Putumayo despite a number of surveys there strongly suggests that the river serves as a barrier also to this taxon. Several species not yet recorded in Colombia—including an undescribed antwren *Herpsilochmus* sp., Variegated Antpitta *Grallaria varia* and Orange-crowned Manakin *Heterocercus aurantiivertex*—have recently been found across the Putumayo in Peru (Pitman *et al*. 2004, Gilmore *et al*. 2010, Pitman *et al*. 2011), but ornithological field work on the Colombian side of the river—and indeed in the Colombian Amazon as a whole (Avendaño *et al*. 2017)—has been so limited that it is difficult to gauge whether the lack of records provides additional evidence of the Putumayo's role as a barrier, or is merely due to these species remaining undetected to date.

The role of rivers in defining areas of bird endemism in the Amazon basin is also under debate (Naka *et al*. 2010, Fernandes *et al*. 2014), with a recent review finding that 'rivers mark steep changes in species composition, but do not limit areas of endemism' (Oliveira *et al.* 2017). Traditionally, the Putumayo basin has been thought to belong to the North Amazon / Napo centre of endemism (Cracraft 1985), with the Negro / Vaupés River generally mapped as separating it from the Imeri centre to the north (Silva *et al*. 2005, Naka *et al*. 2012, Oliveira *et al.* 2017). However, several taxa we found at our study site—especially *Hypocnemis flavescens* and *Percnostola rufifrons minor*, and potentially *Thamnophilus aethiops* if racial assignment to *polionotus* is confirmed—are limited to the Imeri centre of endemism, and in the latter two cases they replace sister taxa from the Napo centre across the Putumayo. On the other hand, the only *Rhegmatorhina* we found at our study site was Hairy-crested Antbird *R. melanosticta* (XC 357344), whose range encompasses the Napo centre of endemism, and not the Imeri centre representative, Chestnut-crested Antbird *R. cristata*, for which species the Caquetá / Japurá River was recently confirmed as a distributional limit (Ribas *et al*. 2018). Our records of *Selenidera* toucanets were heard only, and we could not determine if they referred to Golden-collared Toucanet *S. reinwardtii* or the Imeri endemic Tawny-tufted Toucanet *S. nattereri*. The picture that emerges is of the area between the Putumayo and Vaupés Rivers being a zone of transition between the Napo and Imeri centres of endemism, with taxa typical of the latter having been found well to the south-west of the centre as traditionally defined, even beyond the geological boundaries of the Guiana Shield (Osmonson *et al*. 2000). Similar transitional areas have been found, for example, in the Branco / Negro interfluvium in Brazil, where two distinct avifaunas from west of the Negro and east of the Branco meet (Naka *et al*. 2010). Recent records of Yellow-throated Antwren *Myrmotherula ambigua* and Rose-breasted Chat *Granatellus pelzelni* from the Puerto Leguízamo area (D. Calderón-Franco *et al*. in prep.) further underscore the Guianan / Imeri 'flavour' to the avifauna on the Colombian bank of the Putumayo, and hint at the complexity of distributional patterns in the poorly explored Colombian Amazon.

Additional field work on the Colombian side of the Putumayo is certain to provide useful data to further unravel these patterns, and to address distributional questions at a finer scale, including the extent to which the Caquetá River, which runs almost parallel to the Putumayo to the north and is even longer (*c*.2,800 km, making it the fourth-largest

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tributary of the Amazon, Goulding *et al*. 2003), also constitutes a biogeographical barrier. Genetic studies of avian populations either side of the Putumayo would also shed light on the river's role as a barrier, especially given increasing awareness of cryptic diversity in Amazonian birds (Whitney & Cohn-Haft 2013), and of the fine-scale nature of endemism in Amazonia (Fernandes 2013). Recent field work on the Colombian side of the Putumayo has already resulted in one new species for the national list—Cocha Antshrike *Thamnophilus praecox* (Williams 2016, Janni *et al*. in prep.)—and more such discoveries surely await. Of the species mentioned above as occurring on the Peruvian side of the Putumayo, *Heterocercus aurantiivertex* seems especially likely to occur in Colombia as well, as its range is very similar to that of *Thamnophilus praecox*. One obstacle to field work along the Colombian Putumayo is difficulty of access: the area downstream of Puerto Asís lacks roads and transport is by boat along the main waterways, with Puerto Leguízamo the only town easily accessed by air. From the latter, a weekly boat visits San Antonio del Estrecho on the Peruvian bank, a journey of *c*.12 hours; El Encanto is about three-quarters of the way downstream and is one of the few settlements where some accommodation can be secured. The small settlement of La Chorrera, *c*.55 km north-east of our study site, is reached by a weekly flight from Leticia, and could also serve as a base for exploration. In part due to these logistical challenges, the Colombian part of the Putumayo basin is one of the frontiers of Amazonian ornithology, and we strongly encourage its continued exploration.

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Appendix 1

List of species recorded during our survey on 1–9 February 2017. S = sound-recorded, P = photographed

Family / English name	Scientific name	Record
TINAMIDAE		
White-throated Tinamou	*Tinamus guttatus*	S
Cinereous Tinamou	*Crypturellus cinereus*	
Undulated Tinamou	*Crypturellus undulatus*	S
CRACIDAE		
Spix's Guan	*Penelope jacquacu*	
Speckled Chachalaca	*Ortalis guttata*	P
Nocturnal Curassow	*Nothocrax urumutum*	
ODONTOPHORIDAE		
Marbled Wood Quail	*Odontophorus gujanensis*	
COLUMBIDAE		
Pale-vented Pigeon	*Patagioenas cayennensis*	
Plumbeous Pigeon	*Patagioenas plumbea*	S
Ruddy Ground Dove	*Columbina talpacoti*	

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CUCULIDAE		
Smooth-billed Ani	*Crotophaga ani*	
Squirrel Cuckoo	*Piaya cayana*	
NYCTIBIIDAE		
Common Potoo	*Nyctibius griseus*	
CAPRIMULGIDAE		
Sand-coloured Nighthawk	*Chordeiles rupestris*	
Common Nighthawk	*Chordeiles minor*	P
Common Pauraque	*Nyctidromus albicollis*	
APODIDAE		
Black Swift / White-chinned Swift	*Cypseloides niger / C. cryptus*	P
Grey-rumped Swift	*Chaetura cinereiventris*	
Short-tailed Swift	*Chaetura brachyura*	P
Fork-tailed Palm Swift	*Tachornis squamata*	
TROCHILIDAE		
Black-throated Hermit	*Phaethornis atrimentalis*	
Reddish Hermit	*Phaethornis ruber*	
Straight-billed Hermit	*Phaethornis bourcieri*	P
Great-billed Hermit	*Phaethornis malaris*	
Green-tailed Goldenthroat	*Polytmus theresiae*	P
Fork-tailed Woodnymph	*Thalurania furcata*	P
Glittering-throated Emerald	*Amazilia fimbriata*	P
RALLIDAE		
Rufous-sided Crake	*Laterallus melanophaius*	S
Grey-breasted Crake	*Laterallus exilis*	
CHARADRIIDAE		
Southern Lapwing	*Vanellus chilensis*	
SCOLOPACIDAE		
Spotted Sandpiper	*Actitis macularius*	
JACANIDAE		
Wattled Jacana	*Jacana jacana*	
LARIDAE		
Yellow-billed Tern	*Sternula superciliaris*	
Large-billed Tern	*Phaetusa simplex*	
ARDEIDAE		
Cattle Egret	*Bubulcus ibis*	
Great Egret	*Ardea alba*	
Snowy Egret	*Egretta thula*	
THRESKIORNITHIDAE		
Green Ibis	*Mesembrinibis cayennensis*	
CATHARTIDAE		
Black Vulture	*Coragyps atratus*	
Greater Yellow-headed Vulture	*Cathartes melambrotus*	
ACCIPITRIDAE		
Pearl Kite	*Gampsonyx swainsonii*	P
Grey-headed Kite	*Leptodon cayanensis*	P
Plumbeous Kite	*Ictinia plumbea*	P
Roadside Hawk	*Rupornis magnirostris*	
STRIGIDAE		
Tropical Screech Owl	*Megascops choliba*	
Tawny-bellied Screech Owl	*Megascops watsonii*	
TROGONIDAE		
Pavonine Quetzal	*Pharomachrus pavoninus*	S, P
Green-backed Trogon	*Trogon viridis*	
Amazonian Trogon	*Trogon ramonianus*	
MOMOTIDAE		
Amazonian Motmot	*Momotus momota*	
ALCEDINIDAE		
Amazon Kingfisher	*Chloroceryle amazona*	
American Pygmy Kingfisher	*Chloroceryle aenea*	

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GALBULIDAE		
Paradise Jacamar	*Galbula dea*	P
Great Jacamar	*Jacamerops aureus*	
BUCCONIDAE		
White-fronted Nunbird	*Monasa morphoeus*	
Swallow-winged Puffbird	*Chelidoptera tenebrosa*	
CAPITONIDAE		
Gilded Barbet	*Capito auratus*	
RAMPHASTIDAE		
White-throated Toucan	*Ramphastos tucanus*	S
Toucanet sp.	*Selenidera* sp.	
Lettered Aracari	*Pteroglossus inscriptus*	
Many-banded Aracari	*Pteroglossus pluricinctus*	
PICIDAE		
Yellow-tufted Woodpecker	*Melanerpes cruentatus*	
Little Woodpecker	*Veniliornis passerinus*	
Red-stained Woodpecker	*Veniliornis affinis*	
Red-necked Woodpecker	*Campephilus rubricollis*	
Crimson-crested Woodpecker	*Campephilus melanoleucos*	
Lineated Woodpecker	*Dryocopus lineatus*	
Scale-breasted Woodpecker	*Celeus grammicus*	S
Yellow-throated Woodpecker	*Piculus flavigula*	
FALCONIDAE		
Slaty-backed Forest Falcon	*Micrastur mirandollei*	S, P
Red-throated Caracara	*Ibycter americanus*	
Black Caracara	*Daptrius ater*	
Bat Falcon	*Falco rufigularis*	
PSITTACIDAE		
Cobalt-winged Parakeet	*Brotogeris cyanoptera*	S
Orange-cheeked Parrot	*Pyrilia barrabandi*	
Blue-headed Parrot	*Pionus menstruus*	
Short-tailed Parrot	*Graydidascalus brachyurus*	P
Festive Parrot	*Amazona festiva*	P
Orange-winged Parrot	*Amazona amazonica*	P
Blue-winged Parrotlet	*Forpus xanthopterygius*	
Black-headed Parrot	*Pionites melanocephalus*	
Maroon-tailed Parakeet	*Pyrrhura melanura*	
Red-bellied Macaw	*Orthopsittaca manilatus*	
Chestnut-fronted Macaw	*Ara severus*	
White-eyed Parakeet	*Psittacara leucophthalmus*	
THAMNOPHILIDAE		
Barred Antshrike	*Thamnophilus doliatus*	S, P
Mouse-coloured Antshrike	*Thamnophilus murinus*	S, P
White-shouldered Antshrike	*Thamnophilus aethiops*	S, P
Pearly Antshrike	*Megastictus margaritatus*	S, P
Dusky-throated Antshrike	*Thamnomanes ardesiacus*	S
Cinereous Antshrike	*Thamnomanes caesius*	S, P
Spot-winged Antshrike	*Pygiptila stellaris*	
Fulvous-throated Antwren	*Epinecrophylla pyrrhonota*	
Rufous-tailed Antwren	*Epinecrophylla erythrura*	
Pygmy Antwren	*Myrmotherula brachyura*	S
White-flanked Antwren	*Myrmotherula axillaris*	
Long-winged Antwren	*Myrmotherula longipennis*	
Grey Antwren	*Myrmotherula menetriesii*	
Dugand's Antwren	*Herpsilochmus dugandi*	S
Imeri Warbling Antbird	*Hypocnemis flavescens*	S, P
Yellow-browed Antbird	*Hypocnemis hypoxantha*	
Black Antbird	*Cercomacroides serva*	S
Grey Antbird	*Cercomacra cinerascens*	
Black-faced Antbird	*Myrmoborus myotherinus*	S
Black-chinned Antbird	*Hypocnemoides melanopogon*	S
Black-headed Antbird	*Percnostola rufifrons*	S, P
Slate-coloured Antbird	*Myrmelastes schistaceus*	S, P

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White-shouldered Antbird	*Akletos melanoceps*	S
Hairy-crested Antbird	*Rhegmatorhina melanosticta*	S
Common Scale-backed Antbird	*Willisornis poecilinotus*	
Black-spotted Bare-eye	*Phlegopsis nigromaculata*	
GRALLARIDAE		
Thrush-like Antpitta	*Myrmothera campanisona*	
RHINOCRYPTIDAE		
Rusty-belted Tapaculo	*Liosceles thoracicus*	S
FURNARIIDAE		
Plain-brown Woodcreeper	*Dendrocincla fuliginosa*	
Wedge-billed Woodcreeper	*Glyphorynchus spirurus*	S
Amazonian Barred Woodcreeper	*Dendrocolaptes certhia*	
Strong-billed Woodcreeper	*Xiphocolaptes promeropirhynchus*	
Buff-throated Woodcreeper	*Xiphorhynchus guttatus*	
Straight-billed Woodcreeper	*Dendroplex picus*	
Plain Xenops	*Xenops minutus*	
Chestnut-winged Foliage-gleaner	*Philydor erythropterum*	P
Chestnut-winged Hookbill	*Ancistrops strigilatus*	
Buff-throated Foliage-gleaner	*Automolus ochrolaemus*	
Olive-backed Foliage-gleaner	*Automolus infuscatus*	
TYRANNIDAE		
Yellow-crowned Tyrannulet	*Tyrannulus elatus*	S, P
Grey Elaenia	*Myiopagis caniceps*	
Slender-footed Tyrannulet	*Zimmerius gracilipes*	S, P
Spotted Tody-Flycatcher	*Todirostrum maculatum*	
Yellow-browed Tody-Flycatcher	*Todirostrum chrysocrotaphum*	P
Cinnamon Manakin-Tyrant	*Neopipo cinnamomea*	P
Ruddy-tailed Flycatcher	*Terenotriccus erythrurus*	
Eastern / Western Wood Pewee	*Contopus virens* / *C. sordidulus*	P
Piratic Flycatcher	*Legatus leucophaius*	
Social Flycatcher	*Myiozetetes similis*	
Grey-capped Flycatcher	*Myiozetetes granadensis*	P
Great Kiskadee	*Pitangus sulphuratus*	P
Tropical Kingbird	*Tyrannus melancholicus*	
Drab Water Tyrant	*Ochthornis littoralis*	
Greyish Mourner	*Rhytipterna simplex*	
Short-crested Flycatcher	*Myiarchus ferox*	P
Rufous-tailed Flatbill	*Ramphotrigon ruficauda*	S, P
Citron-bellied Attila	*Attila citriniventris*	S
Bright-rumped Attila	*Attila spadiceus*	
COTINGIDAE		
Purple-throated Fruitcrow	*Querula purpurata*	S
Amazonian Umbrellabird	*Cephalopterus ornatus*	
Screaming Piha	*Lipaugus vociferans*	S
PIPRIDAE		
Dwarf Tyrant-Manakin	*Tyranneutes stolzmanni*	S
Blue-crowned Manakin	*Lepidothrix coronata*	P
Striolated Manakin	*Machaeropterus striolatus*	S
Golden-headed Manakin	*Ceratopipra erythrocephala*	P
TITYRIDAE		
Black-crowned Tityra	*Tityra inquisitor*	
Black-tailed Tityra	*Tityra cayana*	
Black-capped Becard	*Pachyramphus marginatus*	
Pink-throated Becard	*Pachyramphus minor*	
INCERTAE SEDIS		
Wing-barred Piprites	*Piprites chloris*	P
VIREONIDAE		
Dusky-capped Greenlet	*Pachysylvia hypoxantha*	
Red-eyed Vireo	*Vireo olivaceus*	P
CORVIDAE		
Violaceous Jay	*Cyanocorax violaceus*	S, P

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HIRUNDINIDAE		
White-banded Swallow	*Atticora fasciata*	P
Southern Rough-winged Swallow	*Stelgidopteryx ruficollis*	
Grey-breasted Martin	*Progne chalybea*	
White-winged Swallow	*Tachycineta albiventer*	P
Barn Swallow	*Hirundo rustica*	
TROGLODYTIDAE		
Scaly-breasted Wren	*Microcerculus marginatus*	
House Wren	*Troglodytes aedon*	S
Thrush-like Wren	*Campylorhynchus turdinus*	
Coraya Wren	*Pheugopedius coraya*	
White-breasted Wood Wren	*Henicorhina leucosticta*	
POLIOPTILIDAE		
Collared Gnatwren	*Microbates collaris*	
TURDIDAE		
Lawrence's Thrush	*Turdus lawrencii*	S
Black-billed Thrush	*Turdus ignobilis*	S, P
White-necked Thrush	*Turdus albicollis*	S
THRAUPIDAE		
Blue-black Grassquit	*Volatinia jacarina*	
Flame-crested Tanager	*Tachyphonus cristatus*	
Fulvous-crested Tanager	*Tachyphonus surinamus*	P
Silver-beaked Tanager	*Ramphocelus carbo*	
Purple Honeycreeper	*Cyanerpes caeruleus*	
Chestnut-bellied Seedeater	*Sporophila castaneiventris*	
Chestnut-bellied Seed Finch	*Sporophila angolensis*	P
Buff-throated Saltator	*Saltator maximus*	
Greyish Saltator	*Saltator coerulescens*	
Slate-coloured Grosbeak	*Saltator grossus*	
Bananaquit	*Coereba flaveola*	
Magpie Tanager	*Cissopis leverianus*	
Paradise Tanager	*Tangara chilensis*	
Bay-headed Tanager	*Tangara gyrola*	
Green-and-gold Tanager	*Tangara schrankii*	
Blue-grey Tanager	*Thraupis episcopus*	
Palm Tanager	*Thraupis palmarum*	
EMBERIZIDAE		
Yellow-browed Sparrow	*Ammodramus aurifrons*	
ICTERIDAE		
Russet-backed Oropendola	*Psarocolius angustifrons*	
Yellow-rumped Cacique	*Cacicus cela*	
Giant Cowbird	*Molothrus oryzivorus*	
FRINGILLIDAE		
White-vented Euphonia	*Euphonia minuta*	
Orange-bellied Euphonia	*Euphonia xanthogaster*	
Rufous-bellied Euphonia	*Euphonia rufiventris*	

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